TRAFFIC IMPACT AND MITIGATION ANALYSIS

# SEC SR101 and Pima Road
## Scottsdale, Arizona

Prepared for:

**Mack Real Estate Development**

Kimley»Horn

# TRAFFIC IMPACT AND MITIGATION ANALYSIS

# SEC SR101 and Pima Road
## Scottsdale, Arizona

NOTES:

1. To show the full impacts of a project, other project phases can't be shown as background traffic.
2. To show the full impacts of a project phase, all land uses within that phase need to be included.
3. We recommend restricting WB to SB left turns at 90th Street and Bell Road.
4. Access to the Frontage Road will not be permitted until all other project mitigation is constructed.

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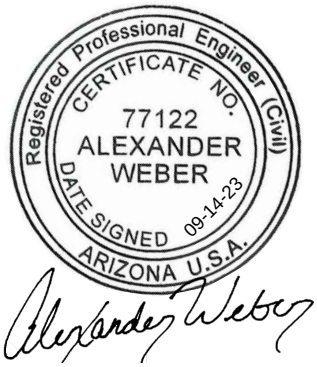


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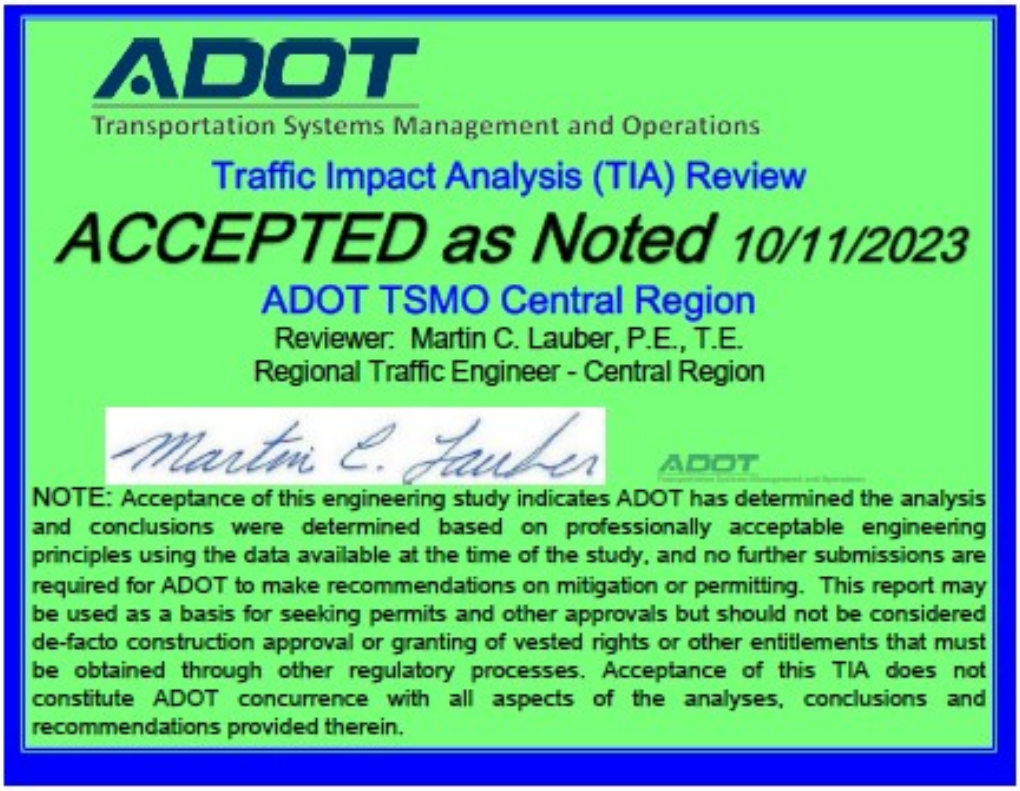


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September 2023
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## Contents


1.0 Executive Summary ..... 5
1.1 Introduction ..... 5
1.2 Report Purpose and Objectives ..... 5
1.3 Principal Findings and Recommendations ..... 6
2.0 Proposed Development ..... 9
2.1 Site Location ..... 9
2.2 Land Use and Site Plan ..... 9
2.3 Site Accessibility ..... 9
2.4 Site Circulation ..... 10
3.0 Study Area ..... 13
3.1 Study Area ..... 13
3.2 Adjacent Land Use and Surrounding Improvements ..... 13
4.0 Existing Conditions ..... 15
4.1 Physical Characteristics ..... 15
4.2 Traffic Volumes ..... 17
4.3 Level of Service ..... 17
4.4 Crash Data ..... 19
5.0 Projected Traffic ..... 22
5.1 Site Traffic Forecasts ..... 22
5.2 Future Traffic Forecasting ..... 23
5.3 Total Traffic ..... 24
6.0 Traffic and Improvement Analysis ..... 31
6.1 Level of Service Analysis ..... 31
6.2 Left-Turn Lanes ..... 40
6.3 Right-Turn Lanes ..... 43
6.4 Driveway Criteria ..... 46
6.5 Cross-Sections ..... 46
6.6 Site Circulation ..... 47
6.7 Sight Triangles ..... 47
7.0 Conclusions and Recommendations ..... 48

## Figures

Figure 1. Vicinity Map....11
Figure 2. Site Plan....12
Figure 3. Existing Conditions....21
Figure 4. Trip Distribution....25
Figure 5. Total Site Traffic Assignment....26
Figure 6. 2025 Background Traffic and Geometry....27
Figure 7. 2028 Background Traffic and Geometry....28
Figure 8. 2025 Total Traffic and Geometry....29
Figure 9. 2028 Total Traffic and Recommended Geometry....30

## Tables

Table 1. Land Use and Phasing....9
Table 2. Existing Level of Service: Unsignalized Intersections....17
Table 3. Existing Level of Service: Signalized Intersections....18
Table 4. Crashes by Injury Severity....19
Table 5. Crashes by Crash Type....20
Table 6. Project Trip Generation....22
Table 7. Adjacent Development Trip Generation....24
Table 8. 2025 Background Level of Service: Unsignalized Intersections....31
Table 9. 2025 Background Level of Service: Signalized Intersections....32
Table 10. 2028 Background Level of Service: Unsignalized Intersections....33
Table 11. 2028 Background Level of Service: Signalized Intersections....34
Table 12. 2025 Total Traffic Level of Service: Unsignalized Intersections....35
Table 13. 2025 Total Traffic Level of Service: Signalized Intersections....36
Table 14. 2028 Total Traffic Level of Service: Unsignalized Intersections....37

Table 15. 2028 Total Traffic Level of Service: Signalized Intersections .....38

Table 16. Alternative Scenario Analysis Level of Service .....39

Table 17. Left-Turn Storage .....41

Table 18. Right-Turn Storage.....44

# 1.0 EXECUTIVE SUMMARY

## 1.1 INTRODUCTION

This report documents a traffic impact and mitigation analysis performed for a proposed mixed-use development on the southeast corner of the Arizona State Route 101 (SR101) and Pima Road/Princess Drive traffic interchange (TI) in Scottsdale, Arizona. The site is proposed to include warehousing land use that is anticipated to be built out by 2025 and future land uses consistent with the current zoning that are anticipated to be office buildings and restaurant land uses.

## 1.2 REPORT PURPOSE AND OBJECTIVES

Kimley-Horn and Associates, Inc. has been retained by Mack Real Estate Development to perform the traffic impact and mitigation analysis for the proposed development.

The purpose of this study is to address traffic and transportation impacts of the proposed development on surrounding streets and intersections. This traffic impact analysis was prepared based on the Category 2 TIMA criteria set forth by the City of Scottsdale (COS). The specific objectives of this study are:

- To evaluate lane requirements on all existing roadway links and at all existing intersections within the study area;
- To determine future level of service (LOS) for all existing intersections within the study area and recommend any capacity-related improvements;
- To determine necessary lane configurations at all new driveways within the proposed development in order to provide acceptable future levels of service;
- To determine appropriate functional classification and cross-section at buildout of all study area roadways; and
- To evaluate the need for auxiliary lanes at all study area intersections.

Due to the proximity of the site to SR101, it is anticipated that Arizona Department of Transportation (ADOT) will review the traffic impact analysis. A horizon year analysis was completed for the TIs within the study area to satisfy ADOT Traffic Engineering Guidelines and Processes Section 240, Traffic Impact Analyses.

## 1.3 PRINCIPAL FINDINGS AND RECOMMENDATIONS

The overall proposed development is expected to generate 2,644 daily trips, with 297 trips occurring in the AM peak hour and 293 trips occurring in the PM peak hour. Parcel 1 of the proposed development is expected to generate 980 daily trips, with 97 trips occurring in the AM peak hour and 103 trips occurring in the PM peak hour.

**Capacity Analysis:**

The unsignalized study area intersections are expected to operate at a satisfactory LOS in 2028 total traffic conditions.

The signalized study area intersections are expected to operate at a satisfactory LOS in 2028 total traffic conditions except for the following intersections:

- SR101 SB Frontage Road & Bell Road (AM/PM peak hours)
- SR101 NB Frontage Road & Bell Road (AM/PM peak hours)

These results are generally consistent with the background traffic conditions.

**Turn Lanes:**

Left-turn lanes are recommended to be constructed at the following intersections:

- 90th Street & Bell Road – eastbound approach (250 feet of storage)
- 91st Street & Bell Road – southbound approach (150 feet of storage), eastbound approach (400 feet of storage)
- 91st Street & Driveway D3 – northbound approach (150 feet of storage)
- 91st Street & Driveway D4 – northbound approach (150 feet of storage)

The westbound dual left-turn lanes at the intersection of SR101 NB Frontage Road & Bell Road are geometrically constrained by the existing median width east of the TI. Since these turn lanes are unlikely to be extended in the future, the proposed eastbound left-turn lane storage at the intersection of 90th Street & Bell Road is recommended to be maximized to provide approximately 250 feet of storage.

The proposed eastbound left-turn lane at the intersection of 91st Street & Bell Road is geometrically constrained by the existing westbound left-turn lane at the intersection of 90th Street & Bell Road. The eastbound left turn lane storage is recommended to be maximized. Approximately 400 feet of eastbound left-turn storage is anticipated to be provided.

The existing outer northbound left-turn lane at the intersection of 91st Street & Bell Road is recommended to be restriped as a dedicated through lane to accommodate northbound through traffic on 91st Street. It is anticipated that the existing two-way left-turn lane on 91st Street south of Bell Road will accommodate expected left-turn queues.

Right-turn lanes are recommended to be constructed or modified at the following intersections and site driveways:

- Driveway D1 & Pima Road – eastbound approach (150 feet of storage; trap lane)
- Pima Road & Trailside View – northbound approach (300 feet of storage)
- SR101 NB Frontage Road & Driveway D2 – northbound approach (300 feet of storage)
- SR101 NB Frontage Road & Bell Road – westbound approach (350 feet of storage)

Per coordination with ADOT and the City of Scottsdale, dual channelized free-flow right-turn lanes are recommended to be installed on the northbound approach to the intersection of the SR101 NB Frontage Road & Pima Road/Princess Drive with construction of Parcel 1 to improve traffic operations at the TI. Per coordination with ADOT, the SR101 NB Frontage Road is recommended to be restriped with two northbound travel lanes that will transition to the dual channelized free-flow right-turn lanes at the intersection of SR101 NB Frontage Road & Pima Road/Princess Drive. Additional pavement extending to approximately the existing gore is recommended on the east side of SR101 NB Frontage Road approaching Pima Road/Princess Drive to provide a five-lane approach that traps the two northbound frontage road lanes into the dual channelized free-flow right-turn lanes. The right turn lanes are recommended to be striped to match the existing storage with approximately 275 feet of storage. An exhibit showing the recommended improvements is included in the **Appendix**.

An additional eastbound receiving lane is anticipated to be constructed along Pima Road/Princess Drive to accommodate the additional free-flowing northbound right-turn lane. The additional through lane is anticipated to transition to an eastbound right-turn lane at Driveway D1.

The outer southbound through lane at the intersection of 91st Street and Bell Road is recommended to transition to a right-turn trap lane with 250 feet of storage.

**Driveways:**

Based on the site plan and coordination with the City of Scottsdale, the proposed driveway locations are anticipated to satisfy City of Scottsdale driveway spacing requirements.

Driveway D3 is recommended to align with the existing driveway on the east side of 91st Street that provides access to the Bell 94 Sports Complex. A northbound right-turn trap lane is recommended to be striped at the intersection of 91st Street & Driveway D3 to transition the 91st Street cross-section to a single northbound through lane north of Driveway D3. The northbound trap lane is recommended to be striped with 150 feet of storage.

Driveway D2 is recommended to be constructed with a throat length of at least 150 feet prior to the first drive aisle. Driveways D1, D3, are all recommended to be constructed with a throat length of at least 100 feet prior to the first drive aisle or parking space.

A three-quarter access (right in/left in/right out) driveway aligning with 90th Street is proposed on the north side of Bell Road with the development of the adjacent site to the south. Per coordination with ADOT and the City of Scottsdale, the median along Bell Road at 90th Street will be modified to restrict exiting southbound movements from the driveway and northbound movements from 90th Street to right turns only.

Per City of Scottsdale DSPM Section 5-3.123D, it is recommended that sight triangles be provided at all site access points to give drivers exiting the site a clear view of oncoming traffic. The landscaping within sight triangles must not obstruct drivers' views of the adjacent travel lanes.

Per ADOT coordination, all recommended improvements must be completed before access to the SR101 NB Frontage Road at Driveway D2 will be permitted.

**91st Street Cross-Section and Intersection Modifications:**

It is recommended that 91st Street be constructed to a suburban major collector cross-section from the northern property boundary to Bell Road to match the street section on the south side of Bell Road. The cross-section should maintain a raised median and two travel lanes in each direction. The pavement markings and traffic signal equipment and phasing at the intersection of 91st Street and Bell Road are recommended to be modified with the construction of 91st Street to accommodate northbound through traffic.

# 2.0 PROPOSED DEVELOPMENT

## 2.1 SITE LOCATION

The proposed development is located on the southeast corner of the SR101 & Pima Road TI in Scottsdale, Arizona. The project location is shown in **Figure 1**.

## 2.2 LAND USE AND SITE PLAN

The development is bound by Pima Road to the north, a private east-west drive aisle to the south, the SR101 Northbound Frontage Road to the west, and a private north-south drive aisle to the east. The site plan proposes constructing the north-south drive aisle and a connection to Pima Road that will share cross access with the adjacent parcels to the south, west, and north.

The development is divided into three portions, referred to as Parcel 1, Parcel 5, and Parcel 6:

- Parcel 1 contains warehousing land uses and is located central to the site.
- Parcel 5 contains office and restaurant land uses and is located adjacent to Parcel 1 to the north.
- Parcel 6 contains office building land uses and is located adjacent to Parcel 1 to the west.

Parcel 1 is the portion of the site that is currently being rezoned. This report focuses on the traffic impacts of Parcel 1. Parcels 5 and 6 adhere to the current zoning and are future phase developments whose buildout dates are currently unknown. Therefore, Parcels 5 and 6 were assumed to be completed by the 2028 horizon year for the purposes of this analysis and were included in the background traffic assignment volumes. **Table 1** illustrates the land use of the proposed development.

**Table 1. Land Use and Phasing**

| Parcel | General Description | ITE Land Use Code | Size |
|---|---|---|---|
| Parcel 1, Building A | Warehousing | 150 | 97,205 SF |
| Parcel 1, Building B | Warehousing | 150 | 169,590 SF |
| Parcel 1, Building C | Warehousing | 150 | 184,960 SF |
| Parcel 1, Building D | Warehousing | 150 | 120,415 SF |
| Parcel 5 | General Office Building | 710 | 54,000 SF |
| | High-Turnover Restaurant | 932 | 6,000 SF |
| Parcel 6 | General Office Building | 710 | 40,000 SF |

The layout of the site is illustrated in **Figure 2**.

## 2.3 SITE ACCESSIBILITY

The site is accessed locally via Bell Road, the SR101 Northbound Frontage Road, Pima Road, Trailside View, and the future 91st Street alignment. Regional access is expected to be provided by SR101 and by the arterial streets in the vicinity such as Bell Road, Pima Road, and Frank Lloyd Wright Boulevard.

## 2.4 SITE CIRCULATION

The site plan is shown in previously referenced **Figure 2**. Access to the development is proposed to be provided by three site driveways, described below:

- **Driveway D1** is a proposed right in/right out (RIRO) driveway located on the south side of Pima Road approximately 1,050 feet east of the SR101 Northbound Frontage Road. Driveway D1 provides cross access to the adjacent parcels to the south via a private north-south drive aisle.
- **Driveway D2** is a proposed RIRO driveway located along the SR101 Northbound Frontage Road approximately 1,225 feet north of Bell Road and 1,525 feet south of Pima Road. Driveway D2 provides direct access to the site's private east-west drive aisle. Driveway D2 provides cross access to the adjacent parcels to the south, west, and north.
- **Driveway D3** is a proposed full-access driveway located on the west side of the future 91st Street alignment approximately 1,240 feet north of Bell Road. Driveway D3 provides direct access to the site's private east-west drive aisle and cross access to the adjacent parcels to the south, west, and north. Driveway D3 aligns with the existing driveway on the east side of 91st Street that provides access to the Bell 94 Sports Complex.
- An additional RIRO driveway for Parcel 5 is proposed along the southside of Trailside View. Final access locations and provisions to Parcel 5 will be determined with a more detailed site plan.

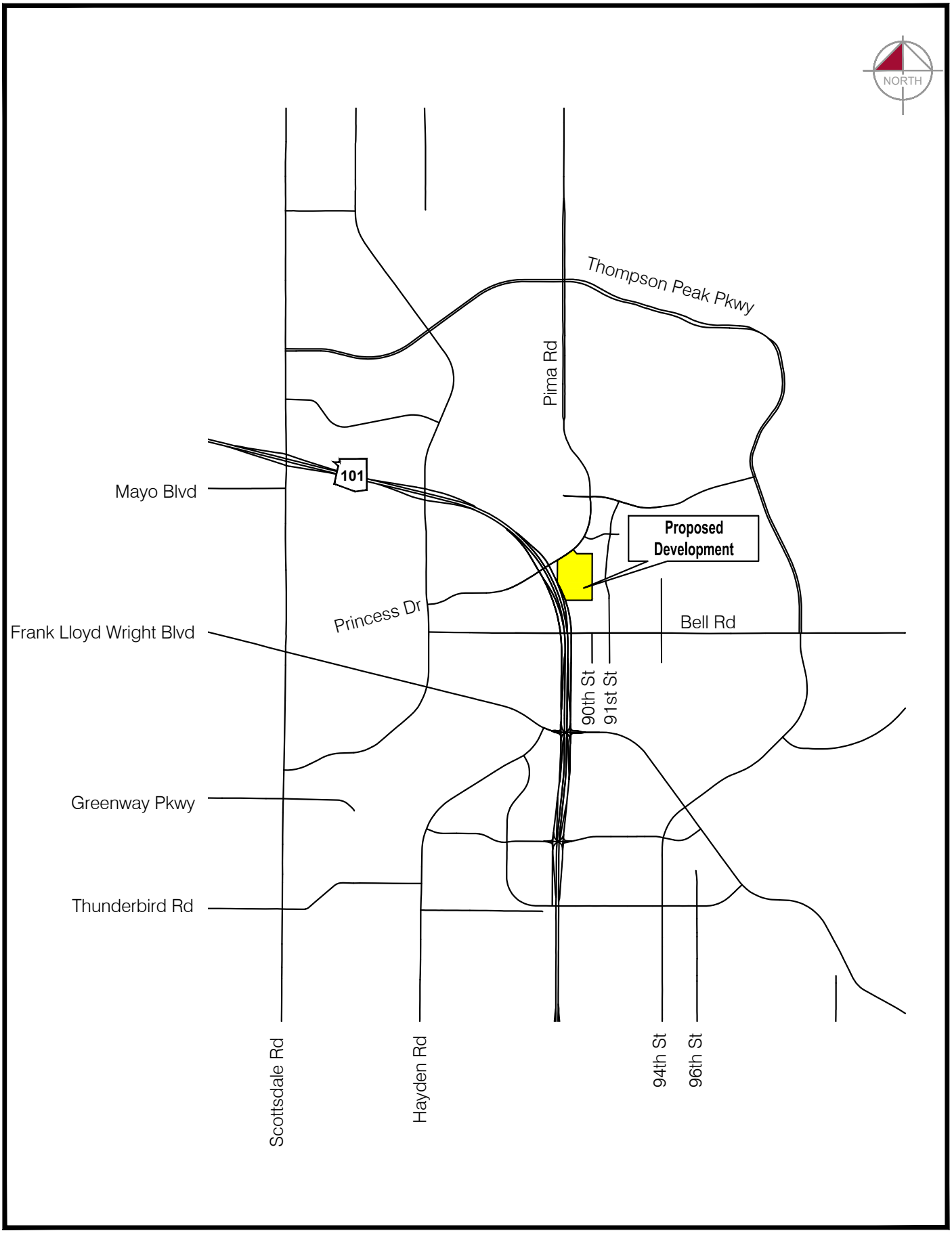


Figure 1
Vicinity Map

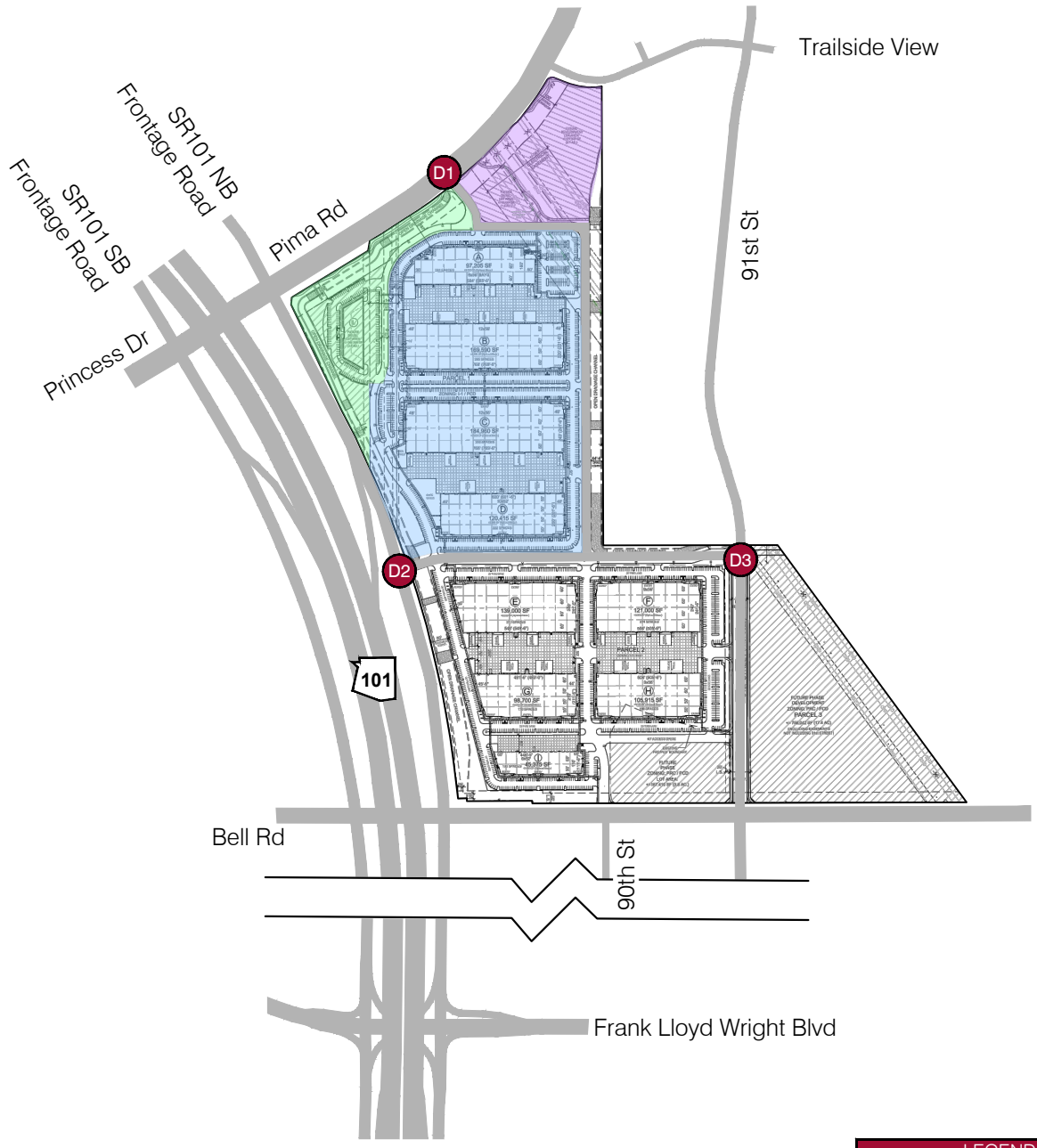


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Figure 2
Site Plan

# 3.0 STUDY AREA

## 3.1 STUDY AREA

In addition to the site driveways, the following existing intersections and traffic interchanges were included in the study area:

- SR101 SB Frontage Road & Pima Road/Princess Drive;
- SR101 NB Frontage Road & Pima Road/Princess Drive;
- Pima Road & Trailside View;
- 91st Street & Trailside View;
- SR101 NB Frontage Road & Bell Road;
- SR101 SB Frontage Road & Bell Road;
- SR101 & Frank Lloyd Wright Boulevard;
- 90th Street & Bell Road; and
- 91st Street & Bell Road.

## 3.2 ADJACENT LAND USE AND SURROUNDING IMPROVEMENTS

The area in the vicinity of the site is primarily composed of residential, commercial, and undeveloped land. Residential developments are located north and east of the site. Commercial developments are located south and west of the site. Undeveloped land is located northwest of the site. The Bell Road Sports Complex is located east of the site.

The DC Ranch Neighborhood Park is a proposed City of Scottsdale capital improvement plan (CIP) project located on the southwest corner of the intersection of 91st Street and Trailside View. The park borders the adjacent development to the northeast.

There are three nearby developments that were utilized to account for the magnitude of traffic anticipated to be generated by adjacent developments:

- The first development, referred to as Parcel 2, is a warehousing development located adjacent to the site to the south. Parcel 2 is anticipated to share cross-access to the internal north-south and east-west drive aisles with the proposed development. Parcel 2 is anticipated to construct the 91st Street alignment and the internal north-south and east-west drive aisles if it is constructed prior to the proposed development.
- The second development, referred to as Parcel 3, is an office development located on the northeast corner of the intersection of the future 91st Street alignment and Bell Road. Parcel 3 is anticipated to be accessed by driveways along the future 91st Street alignment and on the north side of Bell Road.
- The third development, referred to as Parcel 4, is an office development located on the northwest corner of the intersection of the future 91st Street alignment and Bell Road. Parcel 4 is anticipated to share cross access with Parcel 2 at the intersection of 90th Street and Bell Road and at a driveway along the future 91st Street alignment.

The anticipated buildout years of these developments are currently unknown; therefore, it was assumed that the developments are completed by the 2028 horizon year for the purposes of this analysis. A three-quarter access (right in/left in/right out) driveway aligning with 90th Street is proposed on the north side of Bell Road with the adjacent developments. Per coordination with ADOT and the City of Scottsdale, the median along Bell Road at 90th Street will be modified to restrict exiting southbound movements from the driveway and northbound movements from 90th Street to right turns only. Final access locations and provisions to the adjacent developments will be determined with more detailed site plans. See Section 5.2 for the anticipated adjacent site trip generation. The adjacent development background traffic assignment volumes are included in the **Appendix**.

A City of Scottsdale Public Improvements project has recently been completed for the intersection of Pima Road and Trailside View. The intersection improvement plans are included in the **Appendix**.

As documented in the *Pima Freeway (SR 101L): Princess Drive to Shea Boulevard* Design Concept Report (Pima Freeway DCR) prepared by Kimley-Horn in February 2021, ADOT plans to widen SR101 from Pima Road/Princess Drive to Shea Boulevard. The project will construct the SR101 & Frank Lloyd Wright Boulevard interchange from its current single-point urban interchange (SPUI) to a tight-diamond interchange (TDI). At the SR101 & Pima Road/Princess Drive interchange, a third westbound left-turn lane will be added, and the right-turn slip lane for the northbound offramp will be redesigned. These improvements are anticipated to be completed by 2025 and were therefore included in the buildout year 2025 analysis. Relevant excerpts from the ADOT website and the Pima Freeway DCR are included in the **Appendix**.

# 4.0 EXISTING CONDITIONS

## 4.1 PHYSICAL CHARACTERISTICS

The existing roadway network within the study area includes the SR101 Northbound Frontage Road, the SR101 Southbound Frontage Road, Princess Drive, Pima Road, Bell Road, Frank Lloyd Wright Boulevard, 91st Street, and Trailside View. The existing intersection lane use and traffic control are shown in **Figure 3**.

The **Arizona State Route 101 Loop (SR101)** generally extends north-south in the vicinity of the site. SR101 has traffic interchanges with Princess Drive/Pima Road, Bell Road, and Frank Lloyd Wright Boulevard in the vicinity of the site.

The ***SR101 Northbound Frontage Road*** generally extends north-south with three northbound travel lanes south of Bell Road and two northbound travel lanes north of Bell Road in the vicinity of the site. The SR101 Northbound Frontage Road provides access to and from SR101 at Frank Lloyd Wright Boulevard and Pima Road within the vicinity of the site. Per coordination with ADOT and the City of Scottsdale, dual channelized free-flow right-turn lanes are anticipated to be installed on the northbound approach to the intersection of SR101 NB Frontage Road & Pima Road/Princess Drive with construction of Parcel 1 to improve traffic operations at the TI. Per coordination with ADOT and with construction of Parcel 1, the SR101 NB Frontage Road between Pima Road and Bell Road is anticipated to be restriped with two northbound travel lanes that will transition to the dual channelized free-flow right-turn lanes at the intersection SR101 NB Frontage Road & Pima Road/Princess Drive. SR101 NB Frontage Road approaching Pima Road/Princess Drive is anticipated to be constructed as a five-lane approach that traps the two northbound frontage road lanes into the dual channelized free-flow right-turn lanes.

The ***SR101 Southbound Frontage Road*** generally extends north-south with two southbound travel lanes in the vicinity of the site. The SR101 Southbound Frontage Road provides access to and from SR101 at Princess Drive and Frank Lloyd Wright Boulevard within the vicinity of the site.

***Princess Drive*** is a curvilinear roadway that generally extends west from SR101. Princess Drive currently has two travel lanes in each direction and a raised median in the vicinity of the site. Curb, gutter, and sidewalk are in place along both sides of Princess Drive in the vicinity of the site. The posted speed limit on Princess Drive is 35 miles per hour (mph). The COS *Transportation Master Plan 2016* classifies Princess Drive as a minor arterial roadway.

***Pima Road*** is a curvilinear roadway that generally extends east from SR101 before curving north. Pima Road currently has two travel lanes in each direction and a raised median in the vicinity of the site. Curb and gutter are in place along both sides of Pima Road in the vicinity of the site. The posted speed limit on Pima Road is 45 mph. The COS *Transportation Master Plan 2016* classifies Pima Road as a major arterial roadway.

***Bell Road*** currently extends east-west with two travel lanes in each direction and a raised median in the vicinity of the site. Curb, gutter, and sidewalk are in place along both sides of Bell Road in the vicinity of the site. The posted speed limit on Bell Road is 45 mph. The COS *Transportation Master Plan 2016* classifies Bell Road as a minor arterial roadway.

***Frank Lloyd Wright Boulevard*** is a curvilinear roadway that generally extends west and southeast of SR101. Frank Lloyd Wright Boulevard currently has three travel lanes in each direction and a raised median in the vicinity of the site. Curb, gutter, and sidewalk are in place along both sides of Frank Lloyd Wright Boulevard in the vicinity of the site. The posted speed limit on Frank Lloyd Wright Boulevard is 45 mph. The City of Scottsdale *Transportation Master Plan 2016* classifies Frank Lloyd Wright Boulevard as a major arterial roadway.

***91st Street*** is a discontinuous roadway that currently extends north-south from Legacy Boulevard to approximately one-half mile south of Trailside View and from Bell Road to approximately 800 feet south of Bahia Drive. 91st Street has one travel lane in each direction and a two-way left-turn lane from Legacy Boulevard to approximately one-half mile south of Trailside View, two travel lanes per direction and a raised median between Bell Road and Bahia Drive, and one travel lane in each direction south of Bahia Drive. Curb and gutter are in place along both sides of 91st Street. A sidewalk is in place along the east side of 91st Street from Legacy Boulevard to approximately one-half mile south of Trailside View and along both sides of 91st Street south of Bell Road. The posted speed limit on 91st Street is 35 mph. The 2016 COS Transportation Master Plan classifies 91st Street as a major collector roadway. If Parcel 2 is not developed before construction of the site, the site is anticipated to construct 91st Street from approximately one-half mile south of Trailside View to Bell Road and will transition the current urban minor collector cross-section north of the site to the urban major collector cross-section to match the street section on the south side of Bell Road. The pavement markings and traffic signal equipment and phasing at the intersection of 91st Street and Bell Road are recommended to be modified with the construction of 91st Street to accommodate northbound through traffic.

***Trailside View*** generally extends east from Pima Road with one travel lane in each direction. A two-way left-turn lane is in place between Pima Road and approximately 180 feet west of 91st Street, where the two-way left-turn lane becomes a raised median. Curb and gutter are in place along both sides of Trailside View, and a sidewalk is in place along the north side of Trailside View in the site vicinity. The posted speed on Trailside View is 25 mph.

The following existing intersections were analyzed in this report:

- SR101 SB Frontage Road & Pima Road/Princess Drive (signalized; protected westbound left-turn phasing)
- SR101 NB Frontage Road & Pima Road/Princess Drive (signalized; protected eastbound left-turn phasing, northbound right-turn overlap phase)
- Pima Road & Trailside View (signalized; protected/permitted southbound left-turn phasing, permitted westbound left-turn phasing)
- SR101 SB Frontage Road & Bell Road (signalized; protected westbound left-turn phasing)
- SR101 NB Frontage Road & Bell Road (signalized; protected eastbound left-turn phasing)
- SR101 SPUI & Frank Lloyd Wright Boulevard (signalized; protected left-turn phasing)
- 90th Street & Bell Road (northbound stop control)
- 91st Street & Bell Road (signalized; protected/permitted westbound left-turn phasing, protected northbound left-turn phasing)

## 4.2 TRAFFIC VOLUMES

Turning movement counts were collected at the intersections of SR101 NB Frontage Road & Pima Road, Pima Road & Trailside View, SR101 SB Frontage Road & Pima Road, SR101 NB Frontage Road & Bell Road, SR101 SB Frontage Road & Bell Road, SR101 & Frank Lloyd Wright Boulevard, 90th Street & Bell Road, and 91st Street & Bell Road on Thursday, August 25, 2022. The counts were performed between 7:00 AM and 9:00 AM and between 4:00 PM and 6:00 PM. A copy of the counts is attached in the **Appendix.**

Peak hour turning movement counts were estimated at the intersection of 91st Street and Trailside View based on the turning movement counts collected at the nearby driveway along Trailside View approximately 500 feet east of Pima Road. The counts were performed on Thursday, August 25, 2022, between 7:00 AM and 9:00 AM and between 4:00 PM and 6:00 PM.

In addition to the peak hour turning movement counts, 24-hour bi-directional volume counts were performed on Pima Road east of SR101 NB Frontage Road, Bell Road east of SR101 NB Frontage Road, and SR101 NB Frontage Road north of Bell Road on Thursday, August 25, 2022. A copy of the counts is attached in the **Appendix.**

The City of Scottsdale generally requires that collected volumes be adjusted to account for seasonal variations in traffic volumes. Based on the monthly adjustment factors provided in the COS 2018 average daily segment traffic volume map, all collected counts were multiplied by a factor of 1.05 to account for variations in traffic in August versus the annual average. The adjusted traffic counts are shown in **Figure 3**. The COS 2018 average daily segment traffic volume map is shown in the **Appendix**.

## 4.3 LEVEL OF SERVICE

The LOS at the existing study area intersections was evaluated using the traffic counts collected on Thursday, August 25, 2022. The LOS at the study area intersections was analyzed using *Synchro 11* analysis software. The unsignalized and signalized intersections and the signalized SPUI of SR101 and Frank Lloyd Wright Boulevard were evaluated using the *Highway Capacity Manual 6th Edition* (HCM 6) methodology for unsignalized and signalized intersections. The TDIs of SR101 with Pima Road/Princess Drive and Bell Road were evaluated using the *Synchro* methodology for signalized diamond interchanges. The existing intersection geometry and control shown in **Figure 3** was used to obtain the LOS. Signalized intersections were evaluated using signal timing data from the City of Scottsdale. The results of this analysis are shown in **Table 2** and **Table 3**. Delay in seconds is shown for all movements at the SR101 TIs. LOS analysis worksheets and existing signal timing data are included in the **Appendix**.

**Table 2. Existing Level of Service: Unsignalized Intersections**

| Intersection | NB | | | SB | | | EB | | | WB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| ***Pima Road & Trailside View**** | | | | | | | | | | | | |
| AM Peak | | - | - | D | - | | | | | F | | C |
| PM Peak | | - | - | D | - | | | | | F | | C |
| ***91st Street & Trailside View*** | | | | | | | | | | | | |
| AM Peak | A | - | | A | - | | B | | A | B | | |
| PM Peak | A | - | | A | - | | B | | A | B | | |

| Intersection | NB | | | SB | | | EB | | | WB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| ***90th Street & Bell Road*** | | | | | | | | | | | | |
| AM Peak | F | | B | | | | | - | - | B | - | |
| PM Peak | F | | C | | | | | - | - | B | - | |

*Intersection was analyzed with westbound stop control to match the intersection configuration at the time of the data collection.

The existing unsignalized study area intersections operate at an acceptable LOS except for the following movements:

- Pima Road & Trailside View – westbound left-turn movement (AM/PM peak hours)
- 90th Street & Bell Road – northbound left-turn movement (AM/PM peak hours)

It is common for left-turn movements from a two-way stop-controlled minor street to experience a poor level of service during peak hours due to a reduction in acceptable gaps in major street through traffic. It is anticipated that the intersection operates at an acceptable level of service outside of peak hours.

**Table 3. Existing Level of Service: Signalized Intersections**

| Intersection | NB | | | SB | | | EB | | | WB | | | Intersection LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | L | T | R | L | T | R | L | T | R | |
| ***SR101 SB Frontage Road & Pima Road/Princess Drive*** | | | | | | | | | | | | | |
| AM Peak | | | | F<br>83 | E<br>79 | A<br>7 | | E<br>56 | A<br>1 | C<br>22 | A<br>1 | | D<br>41 |
| PM Peak | | | | E<br>69 | E<br>64 | A<br>1 | | E<br>63 | D<br>50 | B<br>12 | A<br>1 | | D<br>37 |
| ***SR101 NB Frontage Road & Pima Road/Princess Drive*** | | | | | | | | | | | | | |
| AM Peak | D<br>54 | D<br>48 | E<br>75 | | | | D<br>41 | A<br>3 | | | C<br>27 | A<br>4 | D<br>37 |
| PM Peak | D<br>47 | E<br>58 | D<br>50 | | | | D<br>52 | A<br>4 | | | C<br>21 | B<br>15 | C<br>33 |
| ***SR101 SB Frontage Road & Bell Road*** | | | | | | | | | | | | | |
| AM Peak | | | | F<br>100 | E<br>61 | A<br>1 | | D<br>54 | A<br>10 | F<br>88 | D<br>40 | | E<br>62 |
| PM Peak | | | | F<br>82 | E<br>68 | A<br>1 | | D<br>51 | A<br>9 | F<br>123 | D<br>35 | | E<br>72 |
| ***SR101 NB Frontage Road & Bell Road*** | | | | | | | | | | | | | |
| AM Peak | E<br>77 | E<br>67 | A<br>10 | | | | D<br>53 | F<br>138 | | | E<br>58 | A<br>10 | E<br>77 |
| PM Peak | E<br>75 | E<br>64 | A<br>9 | | | | D<br>45 | E<br>80 | | | E<br>61 | B<br>11 | E<br>57 |
| ***91st Street & Bell Road*** | | | | | | | | | | | | | |
| AM Peak | E | | D | | | | | A | A | A | A | | A |
| PM Peak | D | | D | | | | | C | B | B | A | | B |
| ***SR101 & Frank Lloyd Wright Boulevard*** | | | | | | | | | | | | | |
| AM Peak | F<br>84 | E<br>60 / 70 | | F<br>80 | E<br>56 | F<br>370 | E<br>65 | E<br>59 | - | D<br>42 | E<br>66 | - | F<br>98 |
| PM Peak | F<br>127 | E<br>60 / 72 | | D<br>52 | E<br>55 | E<br>71 | E<br>65 | E<br>60 | - | F<br>128 | E<br>68 | - | E<br>74 |

The existing signalized study area intersections operate at an overall acceptable LOS except for the following intersections:

- SR101 SB Frontage Road & Bell Road (AM/PM peak hours)
- SR101 NB Frontage Road & Bell Road (AM/PM peak hours)
- SR101 & Frank Lloyd Wright Boulevard SPUI (AM/PM peak hours)

It is important to note that Synchro outputs a LOS E for the northbound right-turn movement at the SR101 NB Frontage Road & Pima Road/Princess Drive intersection in the AM peak hour due to the non-standard signal phasing at the TI and limitations in the Synchro methodology. Realistically, this movement is free-flowing and turns into a dedicated eastbound receiving lane, theoretically resulting in little to no delay. Therefore, the free flow condition and the overall intersection likely operates at an acceptable LOS in the existing scenario. The site minimally impacts the operational characteristic of the northbound right turn movement.

## 4.4 CRASH DATA

Crash data at the existing study area intersections was obtained from the City of Scottsdale for the years 2019 to 2021. The City of Scottsdale also provided the 2020 Traffic Volume & Collision Report, revised June 2022, which contains segment and intersection crash volumes and rates for 2018 to 2020. The crash data provided by the City of Scottsdale is included in the **Appendix**.

**Table 4** summarizes the number of crashes by injury severity at each intersection, and **Table 5** summarizes the number of crashes by crash type at each intersection.

**Table 4. Crashes by Injury Severity**

| Intersection | Injury Severity | | | | | | Total |
|---|---|---|---|---|---|---|---|
| | No Injury | Possible Injury | Non-Incapacitating Injury | Incapacitating Injury | Fatal Injury | Not Reported/ Unknown | |
| SR101 & Princess Drive/Pima Road TI | 39 | 8 | 4 | 2 | 0 | 3 | **56** |
| Pima Road & Trailside View | 19 | 0 | 3 | 0 | 0 | 1 | **23** |
| SR101 & Bell Road TI | 33 | 5 | 2 | 0 | 0 | 0 | **40** |
| 90th Street & Bell Road | 2 | 1 | 0 | 0 | 0 | 0 | **3** |
| 91st Street & Bell Road | 7 | 2 | 0 | 0 | 0 | 0 | **9** |
| SR101 & Frank Lloyd Wright Boulevard TI | 203 | 41 | 15 | 4 | 0 | 2 | **265** |

**Table 5. Crashes by Crash Type**

| Intersection | Crash Type | | | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Single Vehicle | Angle | Left Turn | Rear End | Head-on | Sideswipe (same direction) | Sideswipe (opposite direction) | Rear-to-Side | Rear-to-Rear | Other | Unknown | |
| SR101 & Princess Drive/Pima Road TI | 4 | 18 | 1 | 22 | 1 | 8 | 0 | 0 | 1 | 1 | 0 | **56** |
| Pima Road & Trailside View | 3 | 3 | 7 | 6 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | **23** |
| SR101 & Bell Road TI | 3 | 3 | 2 | 22 | 1 | 8 | 0 | 0 | 0 | 1 | 0 | **40** |
| 90th Street & Bell Road | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | **3** |
| 91st Street & Bell Road | 2 | 1 | 1 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | **9** |
| SR101 & Frank Lloyd Wright Boulevard TI | 12 | 60 | 21 | 116 | 2 | 48 | 2 | 2 | 1 | 0 | 1 | **265** |

Based on the 2020 intersection crash rate data provided in the COS 2020 Traffic Volume & Collision Report, the SR101 & Frank Lloyd Wright Boulevard TI has the highest crash rate of all intersections and interchanges within the City of Scottsdale, with a rate of 2.03 crashes per million entering vehicles. The SR101 & Bell Road TI has the 32nd highest crash rate at 0.92 crashes per million entering vehicles, and the SR101 & Pima Road/Princess Drive TI has the 41st highest crash rate at 0.83 crashes per million entering vehicles. It is worth noting that the number of TIs included in the COS crash data is limited and the data is largely comprised of standard intersections.

The City of Scottsdale average intersection crash rate was 0.54 crashes per million entering vehicles across 202 intersections included with the data. The average crash rate at major arterial/major arterial intersections was 1.03 crashes per million entering vehicles. The average crash rate at the intersection of a minor arterial roadway with a major arterial or minor arterial roadway was 0.60 and 0.58 crashes per million entering vehicles, respectively. The average crash rate at the intersection of a major collector roadway with a major arterial, minor arterial, or major collector roadway was 0.56, 0.66, and 0.74 crashes per million entering vehicles, respectively.

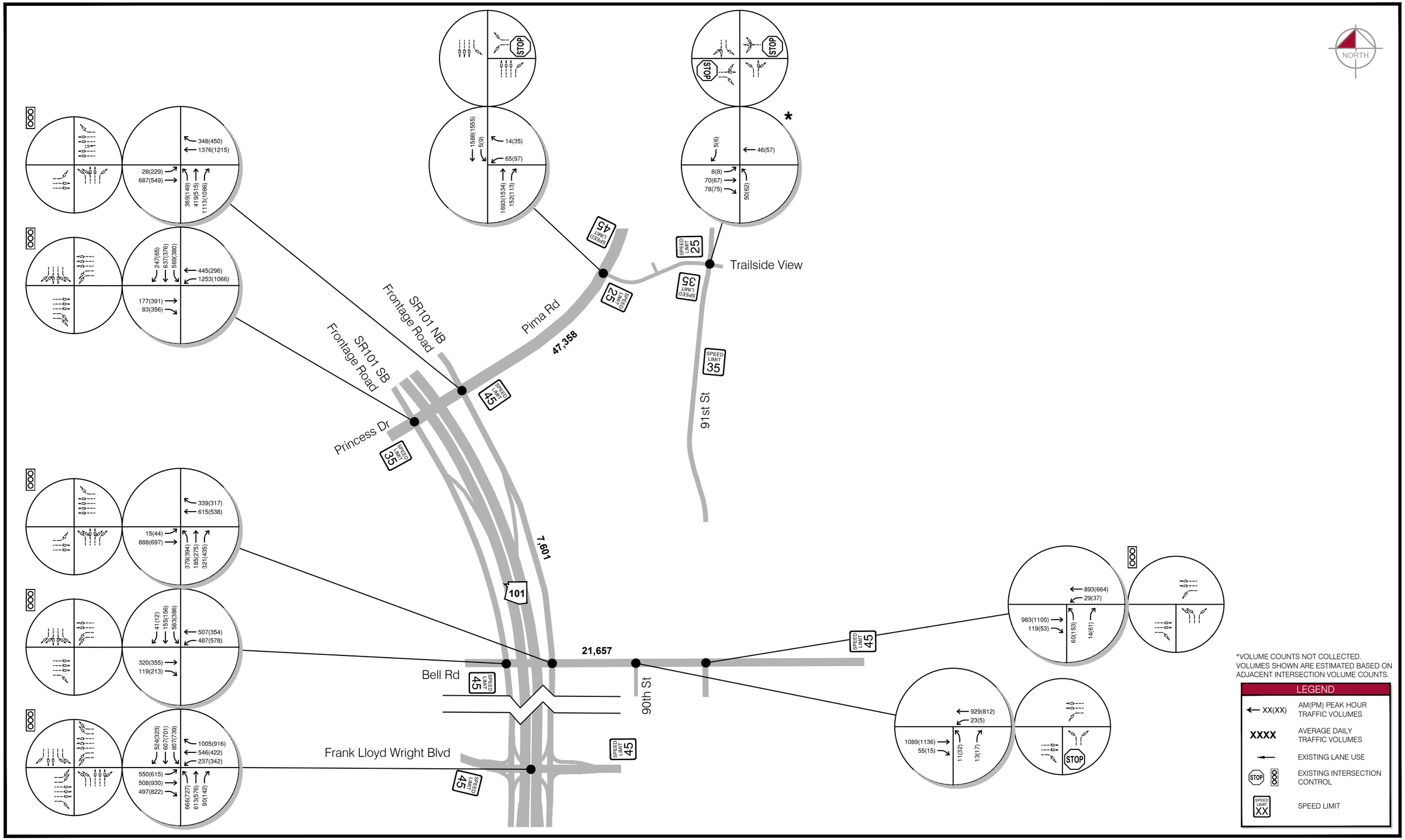


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Figure 3
Existing Conditions

# 5.0 PROJECTED TRAFFIC

## 5.1 SITE TRAFFIC FORECASTS

### 5.1.1 TRIP GENERATION

The Institute of Transportation Engineers' (ITE) *Trip Generation, 11th Edition* was used to obtain daily and peak hour trip generation rates and inbound-outbound percentages, which were then used to estimate the number of daily and peak hour trips that can be attributed to the proposed development. The site trip generation was further divided into car and truck trips based on the truck trip percentages for Warehousing land uses presented in Appendix I of the ITE *Trip Generation Handbook, 3rd Edition*. The trip generation characteristics of the site are summarized in **Table 6**. Trip generation calculations can be found in the **Appendix**.

**Table 6. Project Trip Generation**

| Land Use | ITE Code | Quantity | Units | Daily Total | AM Peak | | | PM Peak | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | In | Out | Total | In | Out | Total |
| **Parcel 1** | | | | | | | | | | |
| Warehousing | 150 | 572,170 | SF | 980 | 75 | 22 | 97 | 29 | 74 | 103 |
| **Parcel 5*** | | | | | | | | | | |
| General Office Building | 710 | 54,000 | SF | 586 | 72 | 10 | 82 | 13 | 65 | 78 |
| High-Turnover (Sit-Down) Restaurant | 932 | 6,000 | SF | 644 | 31 | 26 | 57 | 33 | 21 | 54 |
| **Parcel 6*** | | | | | | | | | | |
| General Office Building | 710 | 40,000 | SF | 434 | 54 | 7 | 61 | 10 | 48 | 58 |
| | | | **Total Trips** | **2,644** | **232** | **65** | **297** | **85** | **208** | **293** |
| | | | Car Trips | 2,448 | 217 | 61 | 278 | 79 | 193 | 272 |
| | | | Truck Trips | 196 | 15 | 4 | 19 | 6 | 15 | 21 |

**Future phase developments to be included in background traffic assignment volumes.*

The proposed development is expected to generate 2,644 daily trips, with 297 trips occurring in the AM peak hour and 293 trips occurring in the PM peak hour. As described previously in Section 2.2, Parcels 5 and 6 are anticipated to be constructed after Parcel 1 and were included in the background traffic assignment. Therefore, only the trip generation volumes of Parcel 1 were included in the site traffic assignment.

Parcel 1 of the proposed development is expected to generate 980 daily trips, with 97 trips occurring in the AM peak hour and 103 trips occurring in the PM peak hour.

### 5.1.2 TRIP DISTRIBUTION

Daily passenger car trips were distributed over the cardinal directions based on the Maricopa Association of Governments' (MAG) estimate of total households within an 11.5-mile radius of the site. This radius is based on the average employment-based trip length as reported in the *2017 National Household Travel Survey.*

| Percent to and from: | 2020 | 2040 |
|---|---|---|
| North | 11 % | 13 % |
| East | 9 % | 8 % |
| South | 32 % | 29 % |
| West | 49 % | 50 % |

The results of this distribution were used as a basis for determining the ultimate passenger car trip distribution for the site. In addition to the MAG land use database for current and future land use projections, the ultimate surrounding roadway system was also taken into consideration when trip distribution was determined; therefore, the distribution shown above was further refined by considering the future roadway network near the site. **Figure 4** illustrates the passenger car trip distribution for the study area.

Truck traffic utilized a different trip distribution that was oriented predominantly to the freeway to account for differences in truck travel patterns. **Figure 4** illustrates the truck trip distribution for the study area.

### 5.1.4 SITE TRAFFIC ASSIGNMENT

Trips generated by the proposed development were assigned to the roadway network based on the trip distribution and the likely travel patterns to and from the site. **Figure 5** shows the results of the site traffic assignment. Additional figures showing the routes into and out of the site from SR101 and the site traffic assignment broken out into car and truck traffic are included in the **Appendix**.

## 5.2 FUTURE TRAFFIC FORECASTING

The background traffic volumes for the buildout year 2025 were calculated based on 2022 traffic counts and the annual traffic growth rate. Based on historical trends in the COS average daily traffic volume data from 2014, 2016, and 2018 and development potential in the area, an annual growth rate of 1.0 percent per year was applied to the existing turning movements to obtain background traffic volumes for the year 2025. The resulting 2025 background traffic volumes are shown in **Figure 6**. The relevant COS average daily segment traffic volume maps are included in the **Appendix**.

In addition to applying the annual traffic growth rate to the existing 2022 traffic counts, traffic from the adjacent developments discussed in Section 3.2 of this report was included in the background traffic volumes for the horizon year 2028. To account for the impacts of the adjacent developments on the surrounding roadway network, trip generation rates from the Institute of Transportation Engineers' (ITE) *Trip Generation, 11th Edition* were used to estimate the development's peak hour trip generation, shown below in **Table 7**.

**Table 7. Adjacent Development Trip Generation**

| Land Use | ITE Code | Quantity | Units | Daily Total | AM Peak | | | PM Peak | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | In | Out | Total | In | Out | Total |
| **Parcel 2** | | | | | | | | | | |
| Warehousing | 150 | 404,075 | SF | 692 | 53 | 16 | 69 | 20 | 53 | 73 |
| **Parcel 3** | | | | | | | | | | |
| General Office Building | 710 | 300,000 | SF | 3,252 | 401 | 55 | 456 | 73 | 359 | 432 |
| **Parcel 4** | | | | | | | | | | |
| General Office Building | 710 | 49,200 | SF | 534 | 66 | 9 | 75 | 12 | 59 | 71 |
| Warehousing | 150 | 105,915 | SF | 182 | 14 | 4 | 18 | 5 | 14 | 19 |
| **Total Trips** | | | | **4,660** | **534** | **84** | **618** | **110** | **485** | **595** |

The adjacent developments are anticipated to generate 4,660 daily trips, with 618 trips occurring in the AM peak hour and 595 trips occurring in the PM peak hour. Trips generated by the adjacent developments were distributed and assigned to the roadway network based on the trip distribution and assignment described in Section 5.1 of this report. Adjacent development trip generation calculations and background traffic assignment volumes are included in the **Appendix**.

It should be noted that with the connection of 91st Street to Bell Road that existing traffic patterns in the vicinity of the site may utilize alternate routes. It is anticipated that approximately 10% of the existing volumes utilizing the intersection of 91st Street and Bell Road may be rerouted along the proposed 91st Street alignment. To remain conservative, the rerouted volumes are minimal and were not reduced from the surrounding study area intersections. The rerouted traffic was accounted for in the 2028 background traffic conditions and the 2025 and 2028 total traffic conditions. The resulting 2028 background traffic volumes are shown in **Figure 7**.

## 5.3 TOTAL TRAFFIC

The results of the site traffic assignment were added to the year 2025 and 2028 background traffic volumes shown in **Figure 6** and **Figure 7** to produce total traffic volumes for the study area. These total traffic volumes are shown in **Figure 8** and **Figure 9**.

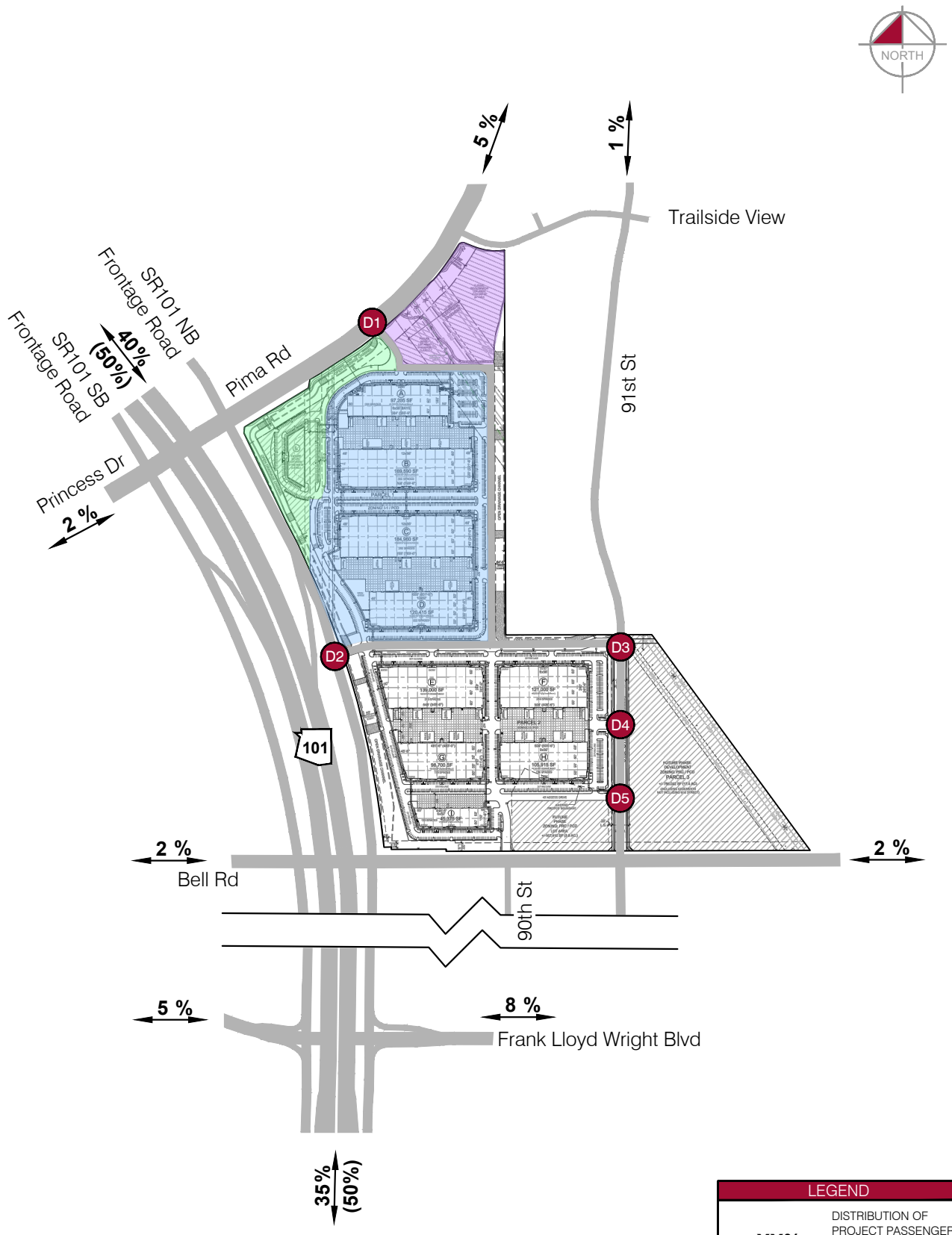


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Figure
Trip Distribution - Mixed-Use

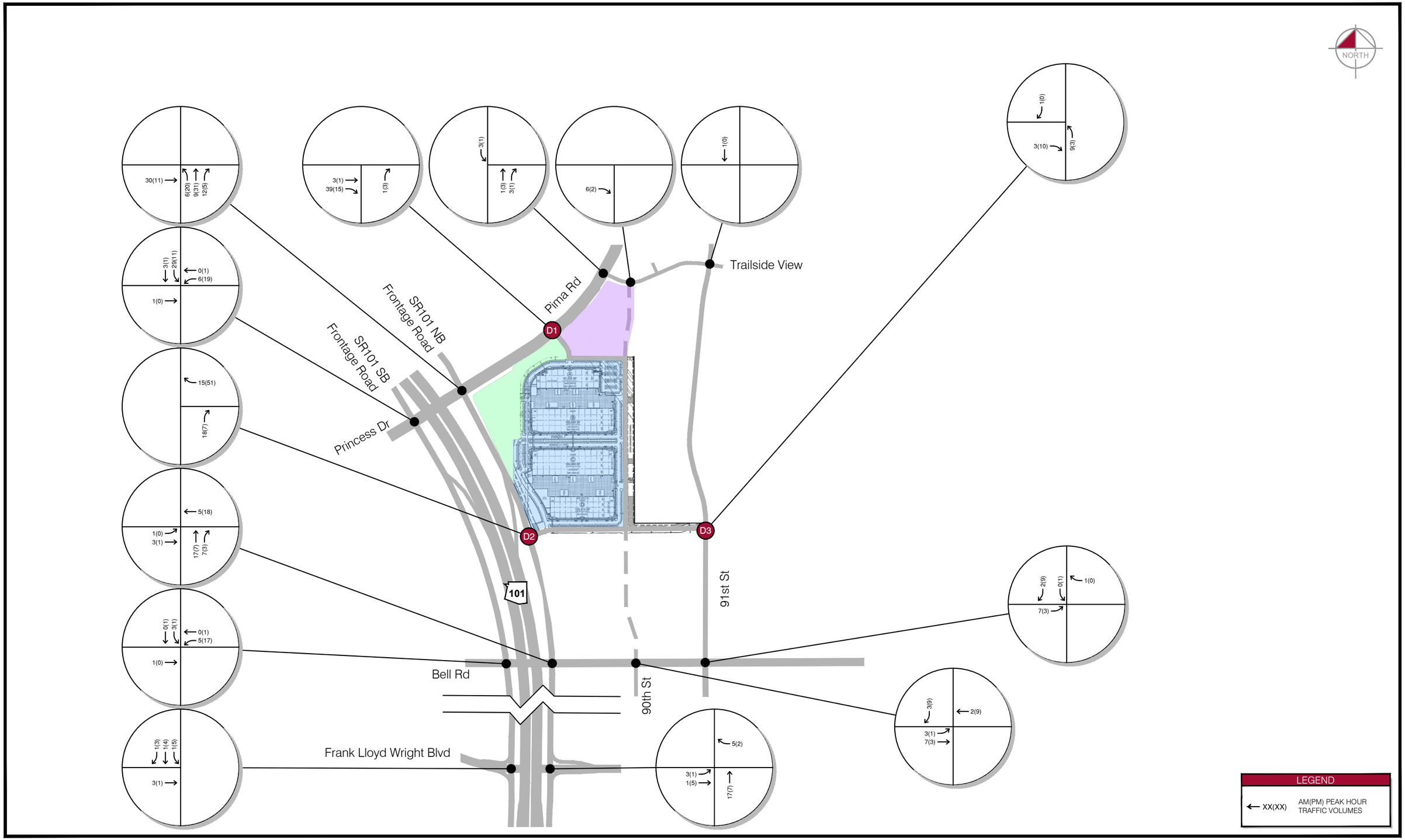


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Figure 5
Total Site Traffic Assignment

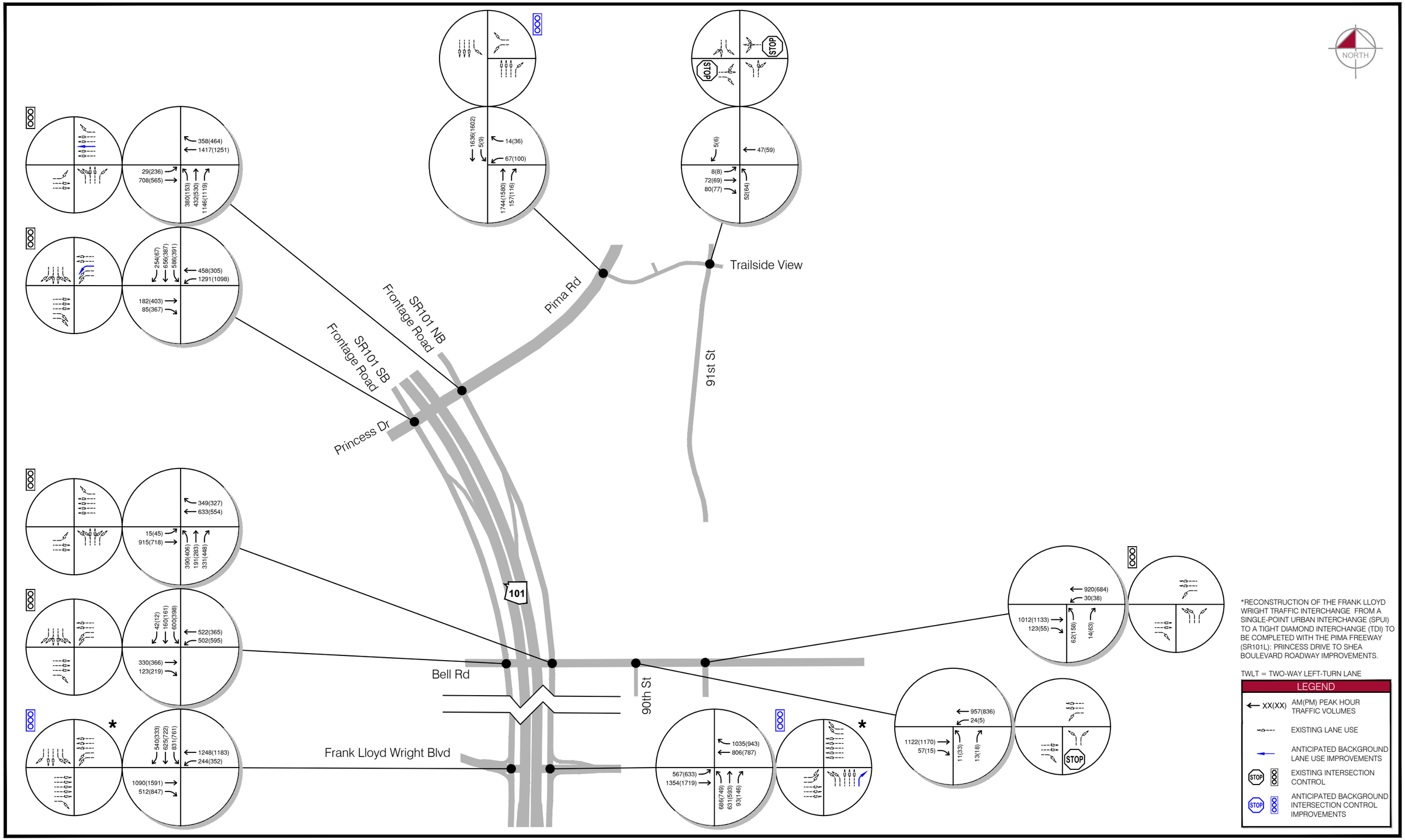


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Figure 6
2025 Background Traffic and Geometry
SEC SR101 and Pima Rd | Traffic Impact and Mitigation Analysis

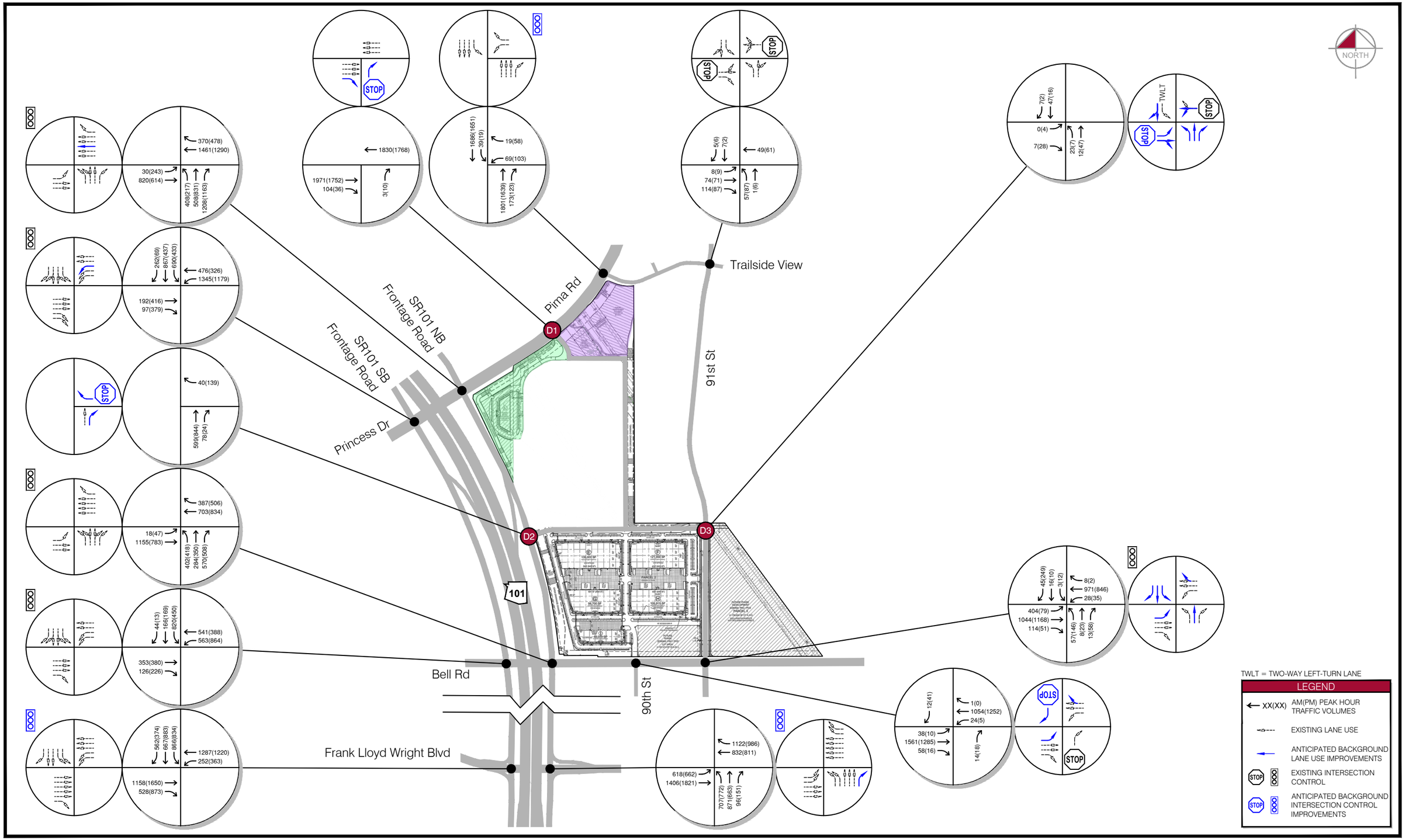


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Figure 7
2028 Background Traffic and Geometry

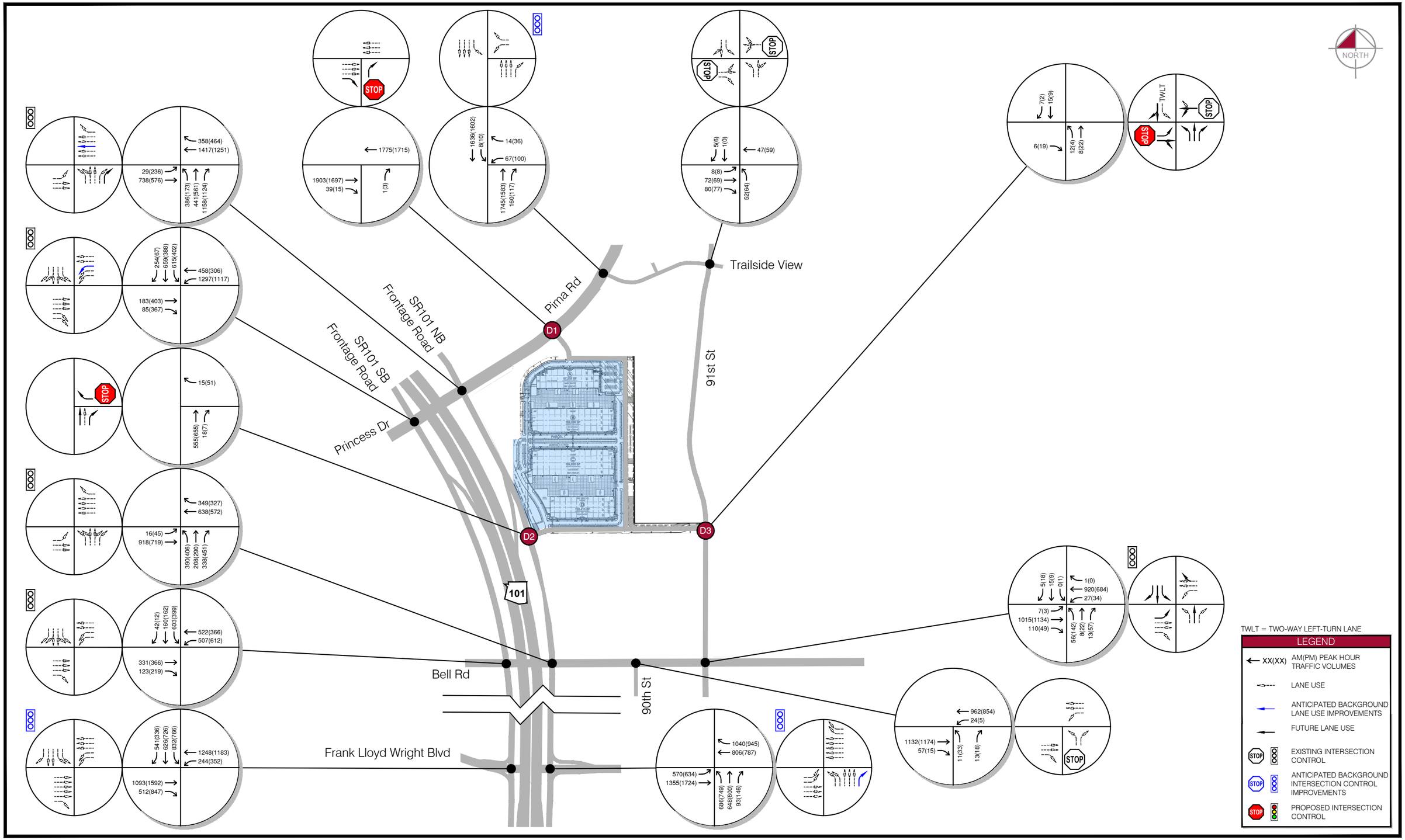


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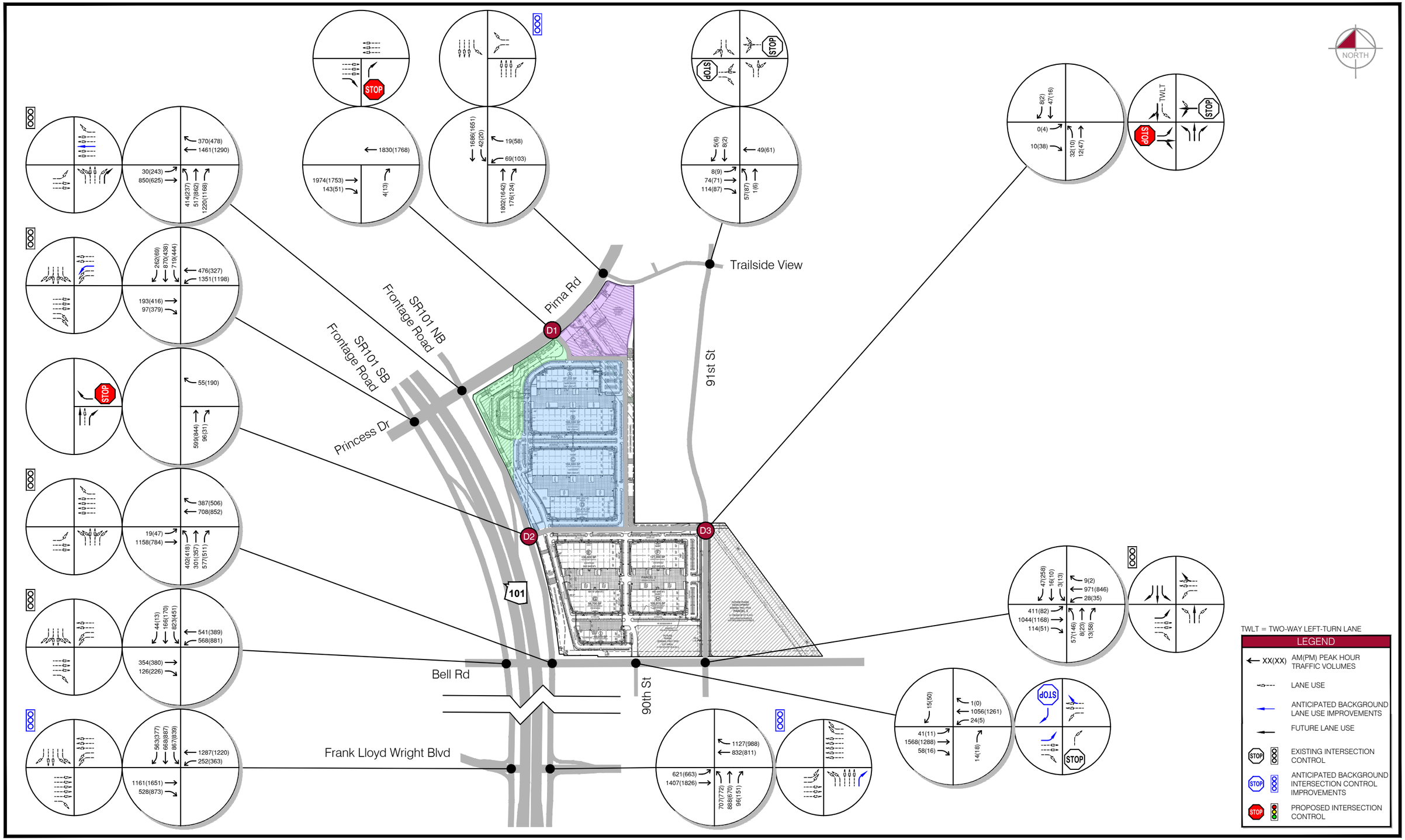
Figure 8
2025 Total Traffic and Geometry




TWLT = TWO-WAY LEFT-TURN LANE

LEGEND

- XX(XX) — AM(PM) PEAK HOUR TRAFFIC VOLUMES
- LANE USE
- ANTICIPATED BACKGROUND LANE USE IMPROVEMENTS
- FUTURE LANE USE
- STOP — EXISTING INTERSECTION CONTROL
- STOP — ANTICIPATED BACKGROUND INTERSECTION CONTROL IMPROVEMENTS
- STOP — PROPOSED INTERSECTION CONTROL

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September 2023

Figure 9
2028 Total Traffic and Recommended Geometry

# 6.0 TRAFFIC AND IMPROVEMENT ANALYSIS

## 6.1 LEVEL OF SERVICE ANALYSIS

The LOS at the study area intersections for the buildout year 2025 and the horizon year 2028 was analyzed using *Synchro 11* analysis software. The unsignalized and signalized intersections as well as the signalized SPUI of SR101 and Frank Lloyd Wright Boulevard were evaluated using the *Highway Capacity Manual 6th Edition* (HCM 6) methodology for unsignalized and signalized intersections, while the TDIs of SR101 with Pima Road/Princess Drive and Bell Road were evaluated using the *Synchro* methodology for signalized diamond interchanges. The existing signal timing data provided by the City of Scottsdale were used as a basis for evaluating and optimizing future traffic signal operations in the background and total traffic conditions. LOS analysis worksheets and signal timing assumptions are included in the **Appendix**.

### 6.1.1 2025 BACKGROUND TRAFFIC LEVEL OF SERVICE ANALYSIS

The unsignalized intersections in the study area were evaluated based on the 2025 background traffic and geometry shown in **Figure 6**. The results of this analysis are shown in **Table 8**.

**Table 8. 2025 Background Level of Service: Unsignalized Intersections**

| Intersection | NB | | | SB | | | EB | | | WB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| ***91st Street & Trailside View*** | | | | | | | | | | | | |
| AM Peak | A | - | | A | - | | B | | A | B | | |
| PM Peak | A | - | | A | - | | B | | A | B | | |
| ***90th Street & Bell Road*** | | | | | | | | | | | | |
| AM Peak | F | | B | | | | | - | - | B | - | |
| PM Peak | F | | C | | | | | - | - | B | - | |

The unsignalized study area intersections are expected to operate at a satisfactory LOS in 2025 background traffic conditions except for the following movements:

- 90th Street & Bell Road – northbound left-turn movement (AM/PM peak hours)

These results are generally consistent with existing traffic conditions.

The signalized intersections in the study area were evaluated based on the 2025 background traffic and geometry shown in **Figure 6**. The results of this analysis are shown in **Table 9**.

**Table 9. 2025 Background Level of Service: Signalized Intersections**

| Intersection | NB | | | SB | | | EB | | | WB | | | Intersection LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | L | T | R | L | T | R | L | T | R | |
| ***Pima Road & Trailside View*** | | | | | | | | | | | | | |
| AM Peak | | B | A | A | A | | | | | D | | D | B |
| PM Peak | | B | A | A | A | | | | | D | | D | B |
| ***SR101 SB Frontage Road & Pima Road/Princess Drive*** | | | | | | | | | | | | | |
| AM Peak | | | | D 42 | D 40 | A 5 | | D 55 | A 1 | C 28 | A 2 | | C 28 |
| PM Peak | | | | D 45 | D 43 | A 1 | | D 54 | D 39 | B 16 | A 7 | | C 30 |
| ***SR101 NB Frontage Road & Pima Road/Princess Drive*** | | | | | | | | | | | | | |
| AM Peak | D 50 | D 45 | F 198 | | | | C 21 | A 4 | | | C 32 | A 7 | E 71 |
| PM Peak | C 33 | D 37 | F 156 | | | | D 50 | A 4 | | | C 28 | C 28 | E 60 |
| ***SR101 SB Frontage Road & Bell Road*** | | | | | | | | | | | | | |
| AM Peak | | | | F 106 | E 63 | A 1 | | D 55 | A 10 | F 94 | D 41 | | E 65 |
| PM Peak | | | | F 83 | E 69 | A 1 | | D 52 | A 9 | F 133 | C 34 | | E 72 |
| ***SR101 NB Frontage Road & Bell Road*** | | | | | | | | | | | | | |
| AM Peak | E 78 | E 68 | A 9 | | | | D 52 | F 165 | | | E 59 | B 10 | F 86 |
| PM Peak | E 75 | E 65 | A 8 | | | | D 43 | D 55 | | | E 61 | B 11 | D 51 |
| ***91st Street & Bell Road*** | | | | | | | | | | | | | |
| AM Peak | E | | E | | | | | A | A | A | A | | A |
| PM Peak | E | | D | | | | | C | B | C | A | | C |
| ***SR101 SB Frontage Road & Frank Lloyd Wright Boulevard*** | | | | | | | | | | | | | |
| AM Peak | | | | D 38 | C 31 | D 41 | | D 40 | A 1 | E 57 | C 28 | | C 33 |
| PM Peak | | | | D 53 | D 43 | C 25 | | D 36 | A 2 | E 73 | C 23 | | C 33 |
| ***SR101 NB Frontage Road & Frank Lloyd Wright Boulevard*** | | | | | | | | | | | | | |
| AM Peak | C 33 | C 28 | A 1 | | | | E 56 | C 24 | | | D 52 | A 1 | C 29 |
| PM Peak | D 46 | C 35 | A 5 | | | | E 71 | B 19 | | | D 43 | A 1 | C 30 |

The signalized study area intersections are expected to operate at a satisfactory LOS in 2025 background traffic conditions except for the following intersections:

- SR101 NB Frontage Road & Pima Road/Princess Drive (AM/PM peak hours)
- SR101 SB Frontage Road & Bell Road (AM/PM peak hours)
- SR101 NB Frontage Road & Bell Road (AM peak hour)

These results are generally consistent with existing traffic conditions. The anticipated conversion of the SR101 & Frank Lloyd Wright Boulevard TI from a SPUI to a TDI improves its LOS substantially.

### 6.1.2 2028 BACKGROUND TRAFFIC LEVEL OF SERVICE ANALYSIS

The unsignalized intersections in the study area were evaluated based on the 2028 background traffic and geometry shown in **Figure 7**. The results of this analysis are shown in **Table 10**.

**Table 10. 2028 Background Level of Service: Unsignalized Intersections**

| Intersection | NB | | | SB | | | EB | | | WB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| ***Driveway D1 & Pima Road*** | | | | | | | | | | | | |
| AM Peak | | | C | | | | | - | - | | - | |
| PM Peak | | | C | | | | | - | - | | - | |
| ***91st Street & Trailside View*** | | | | | | | | | | | | |
| AM Peak | A | - | | A | - | | B | | A | B | | |
| PM Peak | A | - | | A | - | | B | | A | B | | |
| ***SR101 NB Frontage Road & Driveway D2*** | | | | | | | | | | | | |
| AM Peak | | - | - | | | | | | | | | B |
| PM Peak | | - | - | | | | | | | | | C |
| ***91st Street & Driveway D3*** | | | | | | | | | | | | |
| AM Peak | A | - | | | - | | * | | A | | | |
| PM Peak | A | - | | | - | | A | | A | | | |
| ***90th Street & Bell Road*** | | | | | | | | | | | | |
| AM Peak | | | C | | | B | B | - | - | C | - | |
| PM Peak | | | C | | | B | B | - | - | B | - | |

*Zero traffic volume.

The unsignalized study area intersections are expected to operate at a satisfactory LOS in 2028 background traffic conditions.

The signalized intersections in the study area were evaluated based on the 2028 background traffic and geometry shown in **Figure 7**. The results of this analysis are shown in **Table 11**.

**Table 11. 2028 Background Level of Service: Signalized Intersections**

| Intersection | NB | | | SB | | | EB | | | WB | | | Intersection LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | L | T | R | L | T | R | L | T | R | |
| ***Pima Road & Trailside View*** | | | | | | | | | | | | | |
| AM Peak | | B | A | B | A | | | | | D | | D | B |
| PM Peak | | B | A | A | A | | | | | D | | D | B |
| ***SR101 SB Frontage Road & Pima Road/Princess Drive*** | | | | | | | | | | | | | |
| AM Peak | | | | E 62 | E 60 | A 5 | | D 55 | A 2 | D 48 | A 2 | | D 44 |
| PM Peak | | | | D 46 | D 44 | A 1 | | D 54 | D 40 | B 18 | A 7 | | C 31 |
| ***SR101 NB Frontage Road & Pima Road/Princess Drive*** | | | | | | | | | | | | | |
| AM Peak | D 54 | D 47 | F 246 | | | | C 26 | A 4 | | | C 25 | A 7 | F 83 |
| PM Peak | D 36 | D 50 | F 196 | | | | D 54 | A 4 | | | C 29 | C 26 | E 71 |
| ***SR101 SB Frontage Road & Bell Road*** | | | | | | | | | | | | | |
| AM Peak | | | | F 139 | F 119 | A 1 | | E 63 | B 10 | F 125 | D 48 | | F 94 |
| PM Peak | | | | F 85 | E 71 | A 1 | | E 56 | A 9 | F 277 | C 29 | | F 128 |
| ***SR101 NB Frontage Road & Bell Road*** | | | | | | | | | | | | | |
| AM Peak | F 95 | E 73 | A 8 | | | | D 54 | F 400 | | | E 71 | B 16 | F 170 |
| PM Peak | E 80 | E 69 | A 8 | | | | D 49 | F 96 | | | F 114 | C 33 | E 77 |
| ***91st Street & Bell Road*** | | | | | | | | | | | | | |
| AM Peak | D | D | C | D | D | C | D | C | A | C | C | | C |
| PM Peak | D | D | B | D | D | D | C | D | A | D | B | | C |
| ***SR101 SB Frontage Road & Frank Lloyd Wright Boulevard*** | | | | | | | | | | | | | |
| AM Peak | | | | D 43 | C 34 | D 52 | | D 42 | A 1 | D 54 | D 36 | | D 37 |
| PM Peak | | | | D 51 | D 46 | C 28 | | D 54 | A 2 | E 71 | C 34 | | D 41 |
| ***SR101 NB Frontage Road & Frank Lloyd Wright Boulevard*** | | | | | | | | | | | | | |
| AM Peak | D 35 | C 32 | A 1 | | | | E 60 | C 23 | | | E 58 | A 1 | C 31 |
| PM Peak | D 43 | C 34 | A 6 | | | | F 95 | D 35 | | | D 51 | A 1 | D 38 |

The signalized study area intersections are expected to operate at a satisfactory LOS in 2028 background traffic conditions except for the following intersections:

- SR101 NB Frontage Road & Pima Road/Princess Drive (AM/PM peak hours)
- SR101 SB Frontage Road & Bell Road (AM/PM peak hours)
- SR101 NB Frontage Road & Bell Road (AM/PM peak hours)

These results are generally consistent with 2025 background traffic conditions.

### 6.1.3 2025 TOTAL TRAFFIC LEVEL OF SERVICE ANALYSIS

The unsignalized intersections in the study area were evaluated based on the 2025 total traffic and geometry shown in **Figure 8**. Per coordination with ADOT and the City of Scottsdale, dual channelized free-flow right-turn lanes are recommended to be installed on the northbound approach to the intersection of SR101 NB Frontage Road & Pima Road/Princess Drive with the project to improve traffic operations at the TI. The results of this analysis are shown in **Table 12**.

**Table 12. 2025 Total Traffic Level of Service: Unsignalized Intersections**

| Intersection | NB | | | SB | | | EB | | | WB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| ***Driveway D1 & Pima Road*** | | | | | | | | | | | | |
| AM Peak | | | C | | | | | - | - | | - | |
| PM Peak | | | C | | | | | - | - | | - | |
| ***91st Street & Trailside View*** | | | | | | | | | | | | |
| AM Peak | A | - | | A | - | | B | | A | B | | |
| PM Peak | A | - | | A | - | | B | | A | B | | |
| ***SR101 NB Frontage Road & Driveway D2*** | | | | | | | | | | | | |
| AM Peak | | - | - | | | | | | | | | B |
| PM Peak | | - | - | | | | | | | | | B |
| ***91st Street & Driveway D3*** | | | | | | | | | | | | |
| AM Peak | A | - | | | - | | * | | A | | | |
| PM Peak | A | - | | | - | | * | | A | | | |
| ***90th Street & Bell Road*** | | | | | | | | | | | | |
| AM Peak | F | | B | | | | | - | - | B | - | |
| PM Peak | F | | C | | | | | - | - | B | - | |

*Zero traffic volume.

The unsignalized study area intersections are expected to operate at a satisfactory LOS in 2025 total traffic conditions except for the following movements:

- 90th Street & Bell Road – northbound left-turn movement (AM/PM peak hours)

These results are generally consistent with 2025 background traffic conditions.

The signalized intersections in the study area were evaluated based on the 2025 total traffic and geometry shown in **Figure 8**. Additionally, a right-turn overlap phase was considered at the southbound approach to the intersection of 91st Street and Bell Road. The results of this analysis are shown in **Table 13**.

**Table 13. 2025 Total Traffic Level of Service: Signalized Intersections**

| Intersection | NB | | | SB | | | EB | | | WB | | | Intersection LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | L | T | R | L | T | R | L | T | R | |
| ***Pima Road & Trailside View*** | | | | | | | | | | | | | |
| AM Peak | | B | A | A | A | | | | | D | | D | B |
| PM Peak | | B | A | A | A | | | | | D | | D | B |
| ***SR101 SB Frontage Road & Pima Road/Princess Drive*** | | | | | | | | | | | | | |
| AM Peak | | | | D 44 | D 40 | A 5 | | D 55 | A 1 | C 31 | A 2 | | C 30 |
| PM Peak | | | | D 45 | D 42 | A 1 | | D 54 | D 39 | B 15 | A 6 | | C 30 |
| ***SR101 NB Frontage Road & Pima Road/Princess Drive*** | | | | | | | | | | | | | |
| AM Peak | D 51 | D 45 | A 1 | | | | C 22 | A 4 | | | C 32 | A 7 | C 20 |
| PM Peak | D 35 | D 40 | A 1 | | | | D 46 | A 4 | | | C 28 | C 24 | B 20 |
| ***SR101 SB Frontage Road & Bell Road*** | | | | | | | | | | | | | |
| AM Peak | | | | F 114 | E 63 | A 1 | | E 55 | A 10 | F 100 | D 42 | | E 68 |
| PM Peak | | | | F 83 | E 69 | A 1 | | D 52 | A 9 | F 131 | C 34 | | E 72 |
| ***SR101 NB Frontage Road & Bell Road*** | | | | | | | | | | | | | |
| AM Peak | E 78 | E 69 | A 9 | | | | D 52 | F 173 | | | E 60 | B 10 | F 89 |
| PM Peak | E 76 | E 65 | A 8 | | | | D 43 | E 56 | | | E 62 | B 11 | D 51 |
| ***91st Street & Bell Road*** | | | | | | | | | | | | | |
| AM Peak | D | D | B | * | D | D | B | C | A | C | A | | B |
| PM Peak | D | D | B | D | D | D | C | D | A | D | B | | C |
| ***SR101 SB Frontage Road & Frank Lloyd Wright Boulevard*** | | | | | | | | | | | | | |
| AM Peak | | | | D 39 | C 31 | D 41 | | D 40 | A 1 | E 56 | C 28 | | C 33 |
| PM Peak | | | | D 52 | D 43 | C 25 | | D 37 | A 2 | E 72 | C 23 | | C 33 |
| ***SR101 NB Frontage Road & Frank Lloyd Wright Boulevard*** | | | | | | | | | | | | | |
| AM Peak | C 33 | C 28 | A 1 | | | | E 56 | C 24 | | | D 52 | A 1 | C 29 |
| PM Peak | D 46 | C 35 | A 5 | | | | E 71 | B 20 | | | D 43 | A 1 | C 30 |

*Zero traffic volume.

The signalized study area intersections are expected to operate at a satisfactory LOS in 2025 total traffic conditions except for the following intersections:

- SR101 SB Frontage Road & Bell Road (AM/PM peak hours)
- SR101 NB Frontage Road & Bell Road (AM peak hour)

These results are generally consistent with 2025 background traffic conditions.

### 6.1.4 2028 TOTAL TRAFFIC LEVEL OF SERVICE ANALYSIS

The unsignalized intersections in the study area were evaluated based on the 2028 total traffic and recommended geometry shown in **Figure 9**. The results of this analysis are shown in **Table 14**.

**Table 14. 2028 Total Traffic Level of Service: Unsignalized Intersections**

| Intersection | NB | | | SB | | | EB | | | WB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | L | T | R | L | T | R | L | T | R |
| ***Driveway D1 & Pima Road*** | | | | | | | | | | | | |
| AM Peak | | | C | | | | | - | - | | - | |
| PM Peak | | | C | | | | | - | - | | - | |
| ***91st Street & Trailside View*** | | | | | | | | | | | | |
| AM Peak | A | - | | A | - | | B | | A | B | | |
| PM Peak | A | - | | A | - | | B | | A | B | | |
| ***SR101 NB Frontage Road & Driveway D2*** | | | | | | | | | | | | |
| AM Peak | | - | - | | | | | | | | | B |
| PM Peak | | - | - | | | | | | | | | C |
| ***91st Street & Driveway D3*** | | | | | | | | | | | | |
| AM Peak | A | - | | | - | | * | | A | | | |
| PM Peak | A | - | | | - | | A | | A | | | |
| ***90th Street & Bell Road*** | | | | | | | | | | | | |
| AM Peak | | | C | | | B | B | - | - | C | - | |
| PM Peak | | | C | | | B | B | - | - | B | - | |

*Zero traffic volume.

The unsignalized study area intersections are expected to operate at a satisfactory LOS in 2028 total traffic conditions.

The signalized intersections in the study area were evaluated based on the 2028 total traffic and recommended geometry shown in **Figure 9**. Additionally, a right-turn overlap phase was considered at the southbound approach to the intersection of 91st Street and Bell Road. The results of this analysis are shown in **Table 14**.

**Table 15. 2028 Total Traffic Level of Service: Signalized Intersections**

| Intersection | NB | | | SB | | | EB | | | WB | | | Intersection LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | L | T | R | L | T | R | L | T | R | |
| ***Pima Road & Trailside View*** | | | | | | | | | | | | | |
| AM Peak | | B | A | B | A | | | | | D | | D | B |
| PM Peak | | B | A | A | A | | | | | D | | D | B |
| ***SR101 SB Frontage Road & Pima Road/Princess Drive*** | | | | | | | | | | | | | |
| AM Peak | | | | E 64 | E 66 | A 5 | | D 55 | A 2 | D 50 | A 2 | | D 47 |
| PM Peak | | | | D 46 | D 44 | A 1 | | D 54 | D 40 | B 18 | A 7 | | C 31 |
| ***SR101 NB Frontage Road & Pima Road/Princess Drive*** | | | | | | | | | | | | | |
| AM Peak | D 54 | D 47 | A 1 | | | | C 26 | A 4 | | | C 35 | A 7 | C 22 |
| PM Peak | D 37 | D 54 | A 1 | | | | D 54 | A 4 | | | C 29 | C 26 | C 25 |
| ***SR101 SB Frontage Road & Bell Road*** | | | | | | | | | | | | | |
| AM Peak | | | | F 142 | F 122 | A 1 | | E 64 | B 10 | F 129 | D 48 | | F 96 |
| PM Peak | | | | F 86 | E 71 | A 1 | | E 56 | A 9 | F 292 | C 29 | | F 134 |
| ***SR101 NB Frontage Road & Bell Road*** | | | | | | | | | | | | | |
| AM Peak | F 97 | E 74 | A 8 | | | | D 53 | F 405 | | | E 72 | B 16 | F 172 |
| PM Peak | E 79 | E 69 | A 8 | | | | D 49 | F 98 | | | F 115 | C 35 | E 78 |
| ***91st Street & Bell Road*** | | | | | | | | | | | | | |
| AM Peak | D | D | C | D | D | C | D | C | A | C | C | | C |
| PM Peak | D | D | B | D | D | D | C | D | A | D | C | | C |
| ***SR101 SB Frontage Road & Frank Lloyd Wright Boulevard*** | | | | | | | | | | | | | |
| AM Peak | | | | D 44 | C 34 | D 53 | | D 42 | A 1 | D 54 | D 36 | | D 38 |
| PM Peak | | | | D 52 | D 46 | C 28 | | D 54 | A 2 | E 71 | C 34 | | D 41 |
| ***SR101 NB Frontage Road & Frank Lloyd Wright Boulevard*** | | | | | | | | | | | | | |
| AM Peak | D 36 | C 32 | A 1 | | | | E 61 | C 23 | | | E 58 | A 1 | C 31 |
| PM Peak | D 43 | C 34 | A 6 | | | | F 95 | D 36 | | | D 51 | A 1 | D 39 |

*Zero traffic volume.

The signalized study area intersections are expected to operate at a satisfactory LOS in 2028 total traffic conditions except for the following intersections:

- SR101 SB Frontage Road & Bell Road (AM/PM peak hours)
- SR101 NB Frontage Road & Bell Road (AM/PM peak hours)

These results are generally consistent with 2028 background traffic conditions.

### 6.1.5 2028 TOTAL TRAFFIC – ALTERNATIVE SCENARIO ANALYSIS

Per requests from the City of Scottsdale and ADOT, an alternative analysis has been included with this report to determine what would be necessary to fully mitigate the level of service of each movement at the SR101 TIs in the horizon year 2028 that are primarily a result of the background traffic and movements that are minimally or not contributed to by the development. Since only the SR101 TIs had movements with a LOS below D, only the TI intersections were analyzed.

The following changes were implemented to improve the LOS of all movements at the TIs:

SR101 & Pima Road/Princess Drive TI:

- Lane Geometry – add a dedicated southbound through lane at the intersection of SR101 SB Frontage Road & Pima Road/Princess Drive

SR101 & Bell Road TI:

- Signal Timing and Phasing – run NB and SB phases concurrently; signal timing adjustments
- Lane Geometry – add an eastbound through lane through the TI

SR101 & Frank Lloyd Wright TI:

- Signal Timing and Phasing – signal timing adjustments
- Lane Geometry – add an eastbound through lane through the TI; add a third eastbound left-turn lane; add a shared southbound through/right-turn lane

The results of this different analysis scenario are shown in **Table 16**. Synchro analysis worksheets are provided within the **Appendix**.

**Table 16. Alternative Scenario Analysis Level of Service**

| Intersection | NB | | | SB | | | EB | | | WB | | | Intersection LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | L | T | R | L | T | R | L | T | R | |
| ***SR101 SB Frontage Road & Pima Road/Princess Drive*** | | | | | | | | | | | | | |
| AM Peak | | | | D 43 | D 38 | A 5 | | D 55 | A 2 | D 51 | A 2 | | D 37 |
| PM Peak | | | | D 45 | D 41 | A 1 | | D 54 | D 40 | B 17 | A 6 | | C 30 |
| ***SR101 NB Frontage Road & Pima Road/Princess Drive*** | | | | | | | | | | | | | |
| AM Peak | D 54 | D 47 | A 1 | | | | C 23 | A 4 | | | C 33 | A 7 | C 21 |
| PM Peak | D 37 | D 54 | A 1 | | | | D 53 | A 4 | | | C 29 | C 26 | C 25 |
| ***SR101 SB Frontage Road & Bell Road*** | | | | | | | | | | | | | |
| AM Peak | | | | D 53 | C 35 | A 2 | | C 33 | A 7 | D 55 | B 18 | | D 36 |
| PM Peak | | | | D 38 | C 35 | A 1 | | C 33 | A 7 | D 54 | B 14 | | D 36 |

| Intersection | NB | | | SB | | | EB | | | WB | | | Intersection LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | L | T | R | L | T | R | L | T | R | L | T | R | |
| ***SR101 NB Frontage Road & Bell Road*** | | | | | | | | | | | | | |
| AM Peak | D<br>41 | C<br>30 | A<br>6 | | | | D<br>54 | D<br>40 | | | D<br>36 | A<br>7 | C<br>31 |
| PM Peak | D<br>52 | D<br>43 | A<br>7 | | | | D<br>55 | D<br>43 | | | B<br>19 | B<br>15 | C<br>31 |
| ***SR101 SB Frontage Road & Frank Lloyd Wright Boulevard*** | | | | | | | | | | | | | |
| AM Peak | | | | C<br>28 | C<br>28 | D<br>46 | | D<br>43 | A<br>1 | D<br>54 | C<br>29 | | C<br>32 |
| PM Peak | | | | D<br>38 | D<br>50 | D<br>37 | | D<br>51 | A<br>2 | D<br>54 | C<br>22 | | D<br>36 |
| ***SR101 NB Frontage Road & Frank Lloyd Wright Boulevard*** | | | | | | | | | | | | | |
| AM Peak | C<br>29 | C<br>27 | A<br>5 | | | | D<br>55 | C<br>23 | | | D<br>47 | A<br>1 | C<br>27 |
| PM Peak | D<br>45 | C<br>34 | B<br>12 | | | | D<br>54 | B<br>19 | | | D<br>35 | A<br>1 | C<br>27 |

As shown in **Table 16**, the alternative scenario review indicated that the LOS of each movement at the TIs can be improved to LOS D or better with implementation of the previously mentioned improvements.

There are constraints that would need review if geometric improvements were to be considered at these TI locations. These constraints include but are not limited to right-of-way acquisition, underpass bridge modifications, and utility and traffic signal equipment relocations.

## 6.2 LEFT-TURN LANES

The City of Scottsdale requires left-turn lanes at all street intersections on major collector and arterial roadways. Turn lane lengths are to be determined based on the anticipated turning volume and the traffic control type. The City of Scottsdale requires left-turn lanes to be constructed with a standard storage length of 150 feet and minimum storage length of 100 feet. Left-turn lanes should be constructed with a reverse curve length per COS Standard Detail 2225.

The signalized and unsignalized intersections and site driveways in the study area were analyzed to determine the left-turn storage needed to accommodate the expected traffic volumes in the horizon year 2028. The left-turn storage calculations at the traffic interchanges utilized ADOT turn lane criteria. Per ADOT TGP 430, ADOT calculates storage length by summing queue length multiplied by a factor of 1.5 to 2 times plus braking distance. The left-turn storage calculations at the remaining intersections utilized AASHTO turn lane criteria. Additionally, Synchro 95$^{th}$ percentile queues were analyzed at the traffic interchanges, and HCM 95$^{th}$ percentile queues were analyzed at all other intersections. **Table 17** provides the recommended left-turn storage at the study area intersections. The recommended storage lengths are based on total traffic volumes shown in **Figure 9**. The calculations associated with these conclusions and the relevant COS and ADOT standards are included in the **Appendix**.

**Table 17. Left-Turn Storage**

| Intersection and Approach | *Existing Storage Length* | Calculated Queue Length | Desired (Minimum) Braking Distance | 95th Percentile Storage Length | Recommended Storage |
|---|---|---|---|---|---|
| ***SR101 SB Frontage Road & Pima Road/Princess Drive*** | | | | | |
| Southbound Approach | 355 feet (LT)<br>355 feet (Th/LT) | 470 feet (LT)<br>470 feet (Th/LT) | 200 feet<br>(85 feet) | 781 feet (LT)<br>781 feet (Th/LT) | 355 feet (LT) [2]<br>355 feet (Th/LT) |
| Westbound Approach | 765 feet (Dual) | 450 feet (Triple) | 200 feet<br>(85 feet) | 462 feet (Triple) | 1,215 feet [1][5]<br>(Triple) |
| ***SR101 NB Frontage Road & Pima Road/Princess Drive*** | | | | | |
| Northbound Approach | 275 feet (LT)<br>275 feet (Th/LT) | 265 feet (LT)<br>265 feet (Th/LT) | 200 feet<br>(85 feet) | 397 feet (LT)<br>397 feet (Th/LT) | 275 feet (LT) [2]<br>275 feet (Th/LT) |
| Eastbound Approach | 400 feet | 240 feet | 200 feet<br>(85 feet) | 326 feet | 400 feet [1][4] |
| ***Pima Road & Trailside View*** | | | | | |
| Southbound Approach | 140 feet | 150 feet | N/A | 25 feet | 115 feet [1][4][6] |
| Westbound Approach | 195 feet | 225 feet | N/A | 175 feet | 190 feet [1][4][6] |
| ***91st Street & Trailside View*** | | | | | |
| Northbound Approach | 150 feet | 100 feet | N/A | 25 feet | 150 feet [1] |
| ***91st Street & Driveway D3*** | | | | | |
| Northbound Approach | - | 100 feet | N/A | 25 feet | 150 feet |
| Southbound Approach | - | - | N/A | - | TWLT |
| ***91st Street & Driveway D4*** | | | | | |
| Northbound Approach | - | 100 feet | N/A | 25 feet | 150 feet |
| ***SR101 SB Frontage Road & Bell Road*** | | | | | |
| Southbound Approach | 385 feet (LT)<br>385 feet (Th/LT) | 530 feet (LT)<br>530 feet (Th/LT) | 200 feet<br>(85 feet) | 916 feet (LT)<br>916 feet (Th/LT) | 385 feet (LT) [2]<br>385 feet (Th/LT) |
| Westbound Approach | 625 feet<br>(Dual) | 440 feet<br>(Dual) | 200 feet<br>(85 feet) | 992 feet<br>(Dual) | 625 feet (Dual) [1] |
| ***SR101 NB Frontage Road & Bell Road*** | | | | | |
| Northbound Approach | 310 feet (LT)<br>310 feet (Th/LT) | 270 feet (LT)<br>270 feet (Th/LT) | 200 feet<br>(85 feet) | 683 feet (LT)<br>683 feet (Th/LT) | 310 feet (LT) [4]<br>310 feet (Th/LT) |
| Eastbound Approach | 450 feet | 85 feet | 200 feet<br>(85 feet) | 113 feet | 450 feet [1][4] |
| ***90th Street & Bell Road*** | | | | | |
| Eastbound Approach | - | 100 feet | N/A | 25 feet | 250 feet |
| Westbound Approach | 55 feet | 100 feet | N/A | 25 feet | 55 feet [1][4] |

| Intersection and Approach | *Existing Storage Length* | Calculated Queue Length | Desired (Minimum) Braking Distance | 95th Percentile Storage Length | **Recommended Storage** |
|---|---|---|---|---|---|
| ***91st Street & Bell Road*** | | | | | |
| Northbound Approach | 120 feet (Dual) | 275 feet | N/A | 300 feet | 120 feet (4) |
| Southbound Approach | - | 100 feet | N/A | 25 feet | 150 feet |
| Eastbound Approach | - | 550 feet | N/A | 525 feet | 400 feet (3) |
| Westbound Approach | 245 feet | 125 feet | N/A | 50 feet | 245 feet (1)(4) |
| ***SR101 SB Frontage Road & Frank Lloyd Wright Boulevard*** | | | | | |
| Southbound Approach | 250 feet (Dual) (5) | 435 feet (Dual) | 200 feet (85 feet) | 534 feet (Dual) | 250 feet (Dual) (2)(5) |
| Westbound Approach | 580 feet (Dual) (5) | 190 feet (Dual) | 200 feet (85 feet) | 224 feet (Dual) | 580 feet (Dual) (1)(4)(5) |
| ***SR101 NB Frontage Road & Frank Lloyd Wright Boulevard*** | | | | | |
| Northbound Approach | 285 feet (Dual) (5) | 395 feet (Dual) | 200 feet (85 feet) | 442 feet (Dual) | 285 feet (Dual) (4)(5) |
| Eastbound Approach | 450 feet (Dual) (5) | 350 feet (Dual) | 200 feet (85 feet) | 371 feet (Dual) | 450 feet (Dual) (2)(5) |

TWLT = Two-way left-turn lane.
LT and Th/LT = Exclusive left-turn lane and through/left-turn lane.
Dual = Two left-turn lanes.
Triple = three left-turn lanes.
(1) Calculated or 95% Percentile Storage Length value less than or equal to existing.
(2) Additional storage available beyond striped turn lane.
(3) Turn lane is geometrically constrained. Maximize turn storage.
(4) Site does not contribute or minimally contributes traffic to movement.
(5) Value represents proposed improvements per Pima Freeway DCR.
(6) Value represents proposed improvements per Pima Rd and Trailside View Intersection Improvement Plans.

The left-turn lanes should provide the storage recommended in **Table 17** and an appropriate reverse curve length per COS Standard Detail 2225.

The northbound approaches to Driveway D3 and Driveway D4 are recommended to be constructed with 150 feet of northbound left-turn lane storage.

The proposed eastbound left-turn lane at the intersection of 91st Street & Bell Road is geometrically constrained by the existing westbound left-turn lane at the intersection of 90th Street & Bell Road. The eastbound left turn lane storage is recommended to be maximized. Approximately 400 feet of eastbound left-turn storage is anticipated to be provided.

The westbound dual left-turn lanes at the intersection of SR101 NB Frontage Road & Bell Road are geometrically constrained by the existing median width east of the TI. Since these turn lanes are unlikely to be extended in the future, the proposed eastbound left-turn lane storage at the intersection of 90th Street & Bell Road is recommended to be maximized to provide approximately 250 feet of storage.

The existing outer northbound left-turn lane at the intersection of 91st Street & Bell Road is recommended to be restriped as a dedicated through lane to accommodate northbound through traffic on 91st Street. It is

anticipated that the existing two-way left-turn lane on 91st Street south of Bell Road will accommodate expected left-turn queues.

## 6.3 RIGHT-TURN LANES

Right-turn lanes are often recommended on roadways where right-turning vehicles create delays or safety concerns for other traffic movements. The need for a right-turn lane depends on the speed of traffic on the road, the volume of traffic turning right, and the through traffic volume in the same lane as the right-turning traffic.

### 6.3.1 INTERSECTIONS

The City of Scottsdale recommends a right-turn lane at all street intersections on major arterial roadways and on other roadways based on anticipated turning volumes and traffic control.

Based on a review of roadway classifications and the 2028 total traffic volumes, a right-turn lane is recommended at the southbound approach to the intersection of 91st Street & Bell Road. The City of Scottsdale requires right-turn lanes to be constructed with a standard storage length of 150 feet and minimum storage length of 100 feet. Right-turn lanes should be constructed with a reverse curve length per COS Standard Detail 2225.

The signalized and unsignalized intersections and site driveways in the study area were analyzed to determine the right-turn storage needed to accommodate the expected traffic volumes in the horizon year 2028. The right-turn storage calculations at the traffic interchanges utilized ADOT turn lane criteria. Per ADOT TGP 430, ADOT calculates storage length by summing queue length multiplied by a factor of 1.5 to 2 times plus braking distance. The right-turn storage calculations at the remaining intersections utilized AASHTO turn lane criteria. Additionally, Synchro 95th percentile queues were analyzed at the traffic interchanges, and HCM 95th percentile queues were analyzed at all other intersections. **Table 18** provides the recommended right-turn storage at the study area intersections. The recommended storage lengths are based on total traffic volumes shown in **Figure 9**. The calculations associated with these conclusions and the relevant COS and ADOT standards are included in the **Appendix**.

**Table 18. Right-Turn Storage**

| Intersection and Approach | *Existing Storage Length* | Calculated Queue Length | Desired (Minimum) Braking Distance | 95th Percentile Storage Length | Recommended Storage |
|---|---|---|---|---|---|
| ***SR101 SB Frontage Road & Pima Road/Princess Drive*** | | | | | |
| Southbound Approach | 355 feet (RT)<br>355 feet (Th/RT) | 140 feet (RT)<br>140 feet (Th/RT) | 200 feet (85 feet) | 62 feet (RT)<br>62 feet (Th/RT) | 355 feet (RT) [(1)(4)]<br>355 feet (Th/RT) |
| Eastbound Approach | 245 feet (Dual) | 150 feet (Dual) | 200 feet (85 feet) | 159 feet (Dual) | 245 feet (Dual) [(4)] |
| | | | | | |
| ***SR101 NB Frontage Road & Pima Road/Princess Drive*** | | | | | |
| Northbound Approach | 275 feet (Trap, Free Flow) | - [(6)] | 200 feet (85 feet) | - | 275 feet (Dual, Trap) [(2)(9)] (Channelized, Free Flow) |
| Westbound Approach | 285 feet | 350 feet | 200 feet (85 feet) | 233 feet | 285 feet [(1)(4)] |
| ***Pima Road & Trailside View*** | | | | | |
| Northbound Approach | 100 feet | 300 feet | N/A | 225 feet | 300 feet [(4)] |
| Westbound Approach | 200 feet | 175 feet | N/A | 200 feet | 200 feet [(1)] |
| ***91st Street & Trailside View*** | | | | | |
| Eastbound Approach | 125 feet | 150 feet | N/A | 25 feet | 125 feet [(1)] |
| ***SR101 SB Frontage Road & Bell Road*** | | | | | |
| Southbound Approach | 385 feet (RT)<br>385 feet (Th/RT) | 120 feet (RT)<br>120 feet (Th/RT) | 200 feet (85 feet) | 0 feet (RT)<br>0 feet (Th/RT) | 385 feet (RT) [(1)(4)]<br>385 feet (Th/RT) |
| Eastbound Approach | 315 feet | 175 feet | 200 feet (85 feet) | 82 feet | 315 feet [(1)(4)] |
| ***SR101 NB Frontage Road & Bell Road*** | | | | | |
| Northbound Approach | 310 feet (RT)<br>310 feet (Th/RT) | 260 feet (RT)<br>260 feet (Th/RT) | 200 feet (85 feet) | 97 feet (RT)<br>97 feet (Th/RT) | 310 feet (RT) [(2)]<br>310 feet (Th/RT) |
| Westbound Approach | 175 feet | 335 feet | 200 feet (85 feet) | 441 feet | 350 feet [(4)] |
| ***90th Street & Bell Road*** | | | | | |
| Eastbound Approach | 150 feet | 100 feet | N/A | - | 150 feet [(1)(4)] |
| ***91st Street & Bell Road*** | | | | | |
| Northbound Approach | 120 feet | 150 feet | N/A | 75 feet | 120 feet [(1)(4)] |
| Southbound Approach | - | 250 feet | N/A | 175 feet | 250 feet (Trap) |
| Eastbound Approach | 205 feet | 200 feet | N/A | 75 feet | 205 feet [(1)(4)] |
| ***SR101 SB Frontage Road & Frank Lloyd Wright Boulevard*** | | | | | |
| Southbound Approach | 225 feet [(5)] | 270 feet | 200 feet (85 feet) | 672 feet | 225 feet [(2)(5)] |
| Eastbound Approach | 175 feet (Channelized) [(5)] | 435 feet | 200 feet (85 feet) | - (Channelized) | 175 feet (Channelized) [(4)(5)] |

| Intersection and Approach | *Existing Storage Length* | Calculated Queue Length | Desired (Minimum) Braking Distance | 95th Percentile Storage Length | Recommended Storage |
|---|---|---|---|---|---|
| ***SR101 NB Frontage Road & Frank Lloyd Wright Boulevard*** | | | | | |
| Northbound Approach | 285 feet [5] | 120 feet | 200 feet (85 feet) | 50 feet | 285 feet [4][5] |
| Westbound Approach | 225 feet (Dual) (Channelized) [5] | 270 feet (Dual) | 200 feet (85 feet) | - (Channelized) | 225 feet (Dual) (Channelized) [1][5] |

RT and Th/RT = Exclusive right-turn lane and through/right-turn lane.
Dual = Two right-turn lanes.
Trap = Through lane that transitions to right-turn only lane.
Channelized = Channel-separated right-turn lane.
Free Flow = Operates without traffic conflicts.
[1] Calculated or 95% Percentile Storage Length value less than or equal to existing.
[2] Additional storage available beyond striped turn lane.
[3] Turn lane is geometrically constrained.
[4] Site does not contribute or minimally contributes traffic to movement.
[5] Value represents proposed improvements per Pima Freeway DCR.
[6] Calculated value not available for this movement.
[8] Storage length does not account for free-flowing right-turn.
[9] Free-flowing right-turn. Significant queueing not anticipated.

The right-turn lanes should provide the storage recommended in **Table 18** and an appropriate reverse curve length per COS Standard Detail 2225.

Per coordination with ADOT and the City of Scottsdale, dual channelized free-flow right-turn lanes are recommended to be installed on the northbound approach to the intersection of SR101 NB Frontage Road & Pima Road/Princess Drive with the project to improve traffic operations at the TI.

Per coordination with ADOT and the City of Scottsdale, dual channelized free-flow right-turn lanes are recommended to be installed on the northbound approach to the intersection of the SR101 NB Frontage Road & Pima Road/Princess Drive with construction of Parcel 1 to improve traffic operations at the TI. Both turn lanes are recommended to be trap lanes and should be striped with 275 feet of storage.

An additional eastbound receiving lane is recommended to be constructed at the intersection of SR101 NB Frontage Road & Pima Road/Princess Drive to accommodate the additional free-flowing northbound right-turn lane at the intersection. The additional lane is recommended to transition to a right-turn trap lane at Driveway D1. An exhibit showing the recommended improvements at the intersection of the SR101 NB Frontage Road & Pima Road/Princess Drive is included in the **Appendix**.

The westbound right-turn lane at the intersection of SR101 NB Frontage Road & Bell Road is recommended to be extended to provide 350 feet of westbound right turn storage and an appropriate taper length per ADOT TGP 430.

The northbound right-turn lane at the intersection of Pima Road and Trailside View is recommended to be extended to provide 300 feet of northbound right-turn storage and an appropriate reverse curve length per COS Standard Detail 2225.

The outer southbound through lane at the intersection of 91st Street and Bell Road is recommended to transition to a right-turn trap lane with 250 feet of storage.

### 6.3.2 DRIVEWAY

The City of Scottsdale recommends a right-turn lane at site driveways on major arterial roadways and when the criteria specified in the COS Design Standards & Policies Manual (DSPM) are met. These criteria consider the daily traffic volumes on the street, the 85th percentile traffic speed on the street, and the turning volume into the driveway.

Based on a review of the 2028 total traffic volumes and roadway conditions, a right-turn lane is warranted at the eastbound approach of Driveway D1 on Pima Road. An additional eastbound through lane is also anticipated to be installed along Pima Road from SR101 NB Frontage Road and will transition to a right-turn lane at Driveway D1. Therefore, a right-turn trap lane is recommended to be striped at this location with 150 feet of storage.

A northbound right-turn trap lane is recommended to be striped at the intersection of 91st Street & Driveway D3 to transition the 91st Street cross-section to a single northbound through lane north of Driveway D3. The trap lane is recommended to be striped with 150 feet of storage.

ADOT recommends a right-turn lane when the criteria in ADOT TGP 245 are met. These criteria consider the peak hour volume on the adjacent street, the posted speed on the roadway, and the right-turn volume.

Based on a review of the 2028 total traffic volumes and roadway conditions, a right-turn lane is warranted at the northbound approach to Driveway D2 on SR101 NB Frontage Road. Therefore, a right-turn lane is recommended to be constructed at this location with 300 feet of storage and an appropriate taper length per ADOT TGP 430.

The relevant COS and ADOT right-turn lane standards are included in the **Appendix**.

## 6.4 DRIVEWAY CRITERIA

The City of Scottsdale requires driveways to be spaced from each other and street intersections as defined in the COS DSPM Section 5-3.2000. Standard driveway spacing is 500 feet along a major arterial roadway, 330 feet along a minor arterial roadway, and 250 feet along a major collector roadway, measured between centerlines of driveways or roadways. Site driveways are also recommended to align with driveways on the opposite side of the street.

Based on the site plan and coordination with the City of Scottsdale, the proposed driveway locations are anticipated to satisfy these driveway spacing requirements.

## 6.5 CROSS-SECTIONS

The 91st Street alignment is identified as a major collector roadway by the 2016 COS Transportation Master Plan. 91st Street appears to be constructed to a three-lane urban minor collector cross-section north of the site and a five-lane urban major collector cross-section south of the site. Based on the recommended storage lengths along 91st Street, it is recommended that 91st Street be constructed to a suburban major collector cross-section from Driveway D3 to Bell Road to match the street section on the south side of Bell Road. The cross-section should maintain a raised median and two travel lanes in each

direction. The outer northbound through lane is recommended to transition to a right-turn trap lane at Driveway D3 to transition from a major collector to a minor collector cross-section north of the driveway.

## 6.6 SITE CIRCULATION

To provide smooth ingress and egress to the proposed development, all site driveways should be constructed with appropriate throat lengths. Provision of sufficient throat lengths at all site driveways will prevent entering vehicles from obstructing traffic flow on the adjacent public street system and provide adequate on-site storage for exiting vehicles. Based on queuing analysis for unsignalized intersections, Driveway D2 is recommended to be constructed with a throat length of at least 150 feet prior to the first drive aisle. Driveways D1 and D3 are recommended to be constructed with a throat length of at least 100 feet prior to the first drive aisle or parking space.

## 6.7 SIGHT TRIANGLES

Per City of Scottsdale DSPM Section 5-3.123D, it is recommended that sight triangles be provided at all site access points to give drivers exiting the site a clear view of oncoming traffic. The landscaping within sight triangles must not obstruct drivers' views of the adjacent travel lanes.

# 7.0 CONCLUSIONS AND RECOMMENDATIONS

The overall proposed development is expected to generate 2,644 daily trips, with 297 trips occurring in the AM peak hour and 293 trips occurring in the PM peak hour. Parcel 1 of the proposed development is expected to generate 980 daily trips, with 97 trips occurring in the AM peak hour and 103 trips occurring in the PM peak hour.

**Capacity Analysis:**

The unsignalized study area intersections are expected to operate at a satisfactory LOS in 2028 total traffic conditions.

The signalized study area intersections are expected to operate at a satisfactory LOS in 2028 total traffic conditions except for the following intersections:

- SR101 SB Frontage Road & Bell Road (AM/PM peak hours)
- SR101 NB Frontage Road & Bell Road (AM/PM peak hours)

These results are generally consistent with the background traffic conditions.

**Turn Lanes:**

Left-turn lanes are recommended to be constructed at the following intersections:

- 90th Street & Bell Road – eastbound approach (250 feet of storage)
- 91st Street & Bell Road – southbound approach (150 feet of storage), eastbound approach (400 feet of storage)
- 91st Street & Driveway D3 – northbound approach (150 feet of storage)
- 91st Street & Driveway D4 – northbound approach (150 feet of storage)

The westbound dual left-turn lanes at the intersection of SR101 NB Frontage Road & Bell Road are geometrically constrained by the existing median width east of the TI. Since these turn lanes are unlikely to be extended in the future, the proposed eastbound left-turn lane storage at the intersection of 90th Street & Bell Road is recommended to be maximized to provide approximately 250 feet of storage.

The proposed eastbound left-turn lane at the intersection of 91st Street & Bell Road is geometrically constrained by the existing westbound left-turn lane at the intersection of 90th Street & Bell Road. The eastbound left turn lane storage is recommended to be maximized. Approximately 400 feet of eastbound left-turn storage is anticipated to be provided.

The existing outer northbound left-turn lane at the intersection of 91st Street & Bell Road is recommended to be restriped as a dedicated through lane to accommodate northbound through traffic on 91st Street. It is anticipated that the existing two-way left-turn lane on 91st Street south of Bell Road will accommodate expected left-turn queues.

Right-turn lanes are recommended to be constructed or modified at the following intersections and site driveways:

- Driveway D1 & Pima Road – eastbound approach (150 feet of storage; trap lane)
- Pima Road & Trailside View – northbound approach (300 feet of storage)
- SR101 NB Frontage Road & Driveway D2 – northbound approach (300 feet of storage)
- SR101 NB Frontage Road & Bell Road – westbound approach (350 feet of storage)

Per coordination with ADOT and the City of Scottsdale, dual channelized free-flow right-turn lanes are recommended to be installed on the northbound approach to the intersection of the SR101 NB Frontage Road & Pima Road/Princess Drive with construction of Parcel 1 to improve traffic operations at the TI. Per coordination with ADOT, the SR101 NB Frontage Road is recommended to be restriped with two northbound travel lanes that will transition to the dual channelized free-flow right-turn lanes at the intersection of SR101 NB Frontage Road & Pima Road/Princess Drive. Additional pavement extending to approximately the existing gore is recommended on the east side of SR101 NB Frontage Road approaching Pima Road/Princess Drive to provide a five-lane approach that traps the two northbound frontage road lanes into the dual channelized free-flow right-turn lanes. The right turn lanes are recommended to be striped to match the existing storage with approximately 275 feet of storage. An exhibit showing the recommended improvements is included in the **Appendix**.

An additional eastbound receiving lane is anticipated to be constructed along Pima Road/Princess Drive to accommodate the additional free-flowing northbound right-turn lane. The additional through lane is anticipated to transition to an eastbound right-turn lane at Driveway D1.

The outer southbound through lane at the intersection of 91st Street and Bell Road is recommended to transition to a right-turn trap lane with 250 feet of storage.

**Driveways:**

Based on the site plan and coordination with the City of Scottsdale, the proposed driveway locations are anticipated to satisfy City of Scottsdale driveway spacing requirements.

Driveway D3 is recommended to align with the existing driveway on the east side of 91st Street that provides access to the Bell 94 Sports Complex. A northbound right-turn trap lane is recommended to be striped at the intersection of 91st Street & Driveway D3 to transition the 91st Street cross-section to a single northbound through lane north of Driveway D3. The northbound trap lane is recommended to be striped with 150 feet of storage.

Driveway D2 is recommended to be constructed with a throat length of at least 150 feet prior to the first drive aisle. Driveways D1, D3, are all recommended to be constructed with a throat length of at least 100 feet prior to the first drive aisle or parking space.

A three-quarter access (right in/left in/right out) driveway aligning with 90th Street is proposed on the north side of Bell Road with the development of the adjacent site to the south. Per coordination with ADOT and the City of Scottsdale, the median along Bell Road at 90th Street will be modified to restrict exiting southbound movements from the driveway and northbound movements from 90th Street to right turns only.

Per City of Scottsdale DSPM Section 5-3.123D, it is recommended that sight triangles be provided at all site access points to give drivers exiting the site a clear view of oncoming traffic. The landscaping within sight triangles must not obstruct drivers' views of the adjacent travel lanes.

Per ADOT coordination, all recommended improvements must be completed before access to the SR101 NB Frontage Road at Driveway D2 will be permitted.

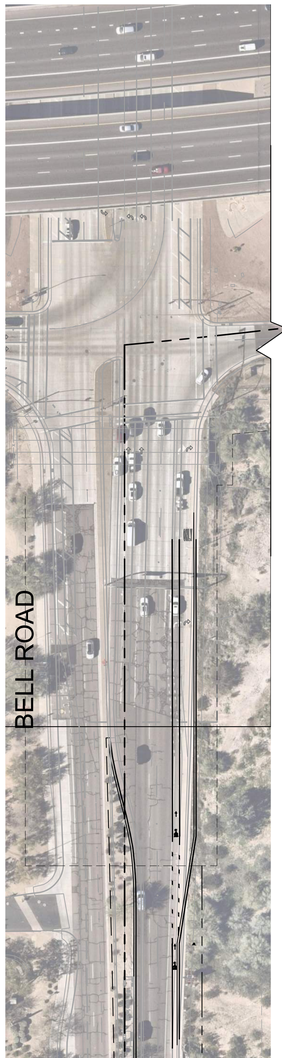
**91st Street Cross-Section and Intersection Modifications:**

It is recommended that 91st Street be constructed to a suburban major collector cross-section from the northern property boundary to Bell Road to match the street section on the south side of Bell Road. The cross-section should maintain a raised median and two travel lanes in each direction. The pavement markings and traffic signal equipment and phasing at the intersection of 91st Street and Bell Road are recommended to be modified with the construction of 91st Street to accommodate northbound through traffic.

## APPENDIX

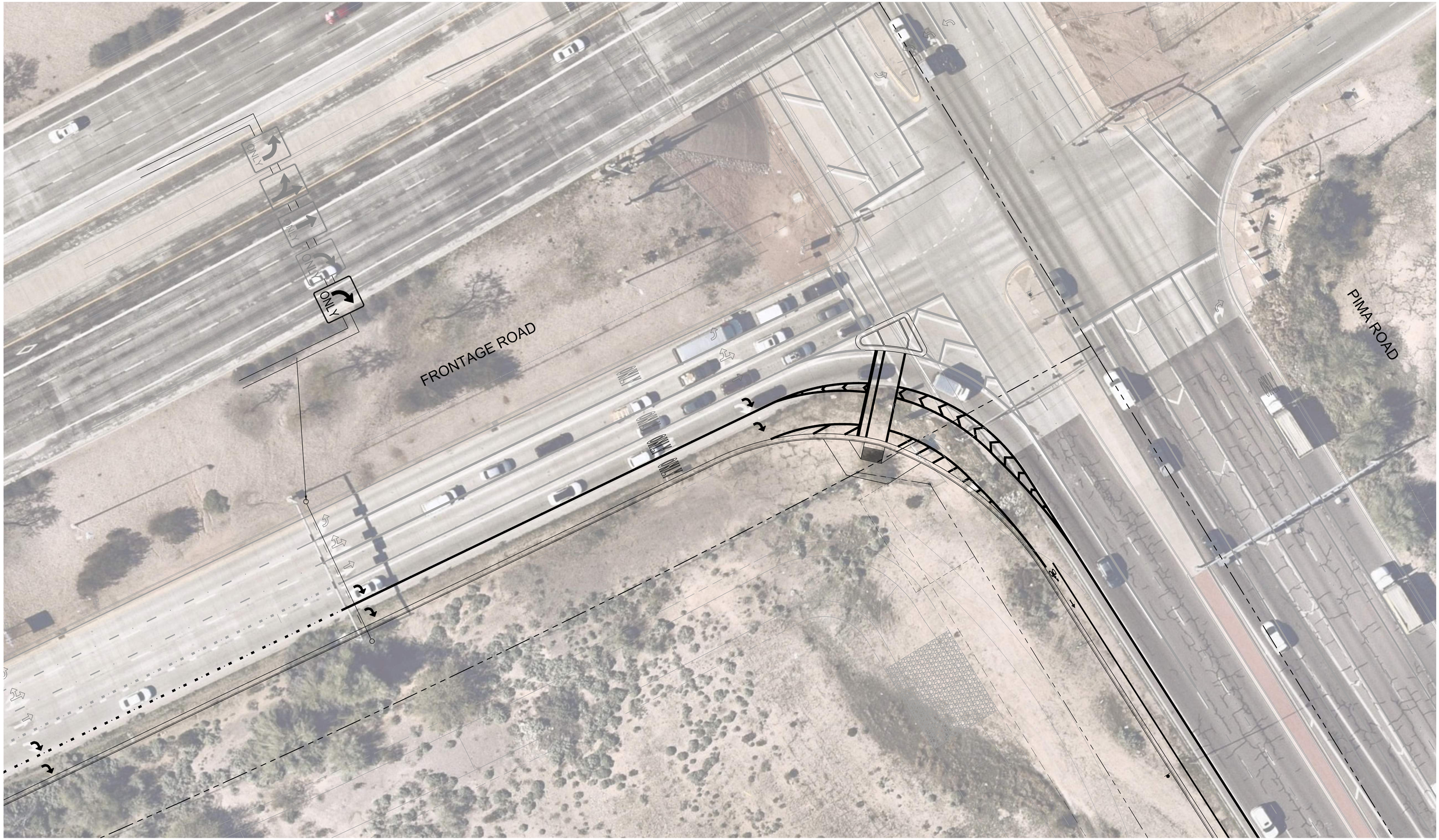
- Proposed Improvements at SR101L NB Frontage Road & Pima Road Intersection
- Pima Freeway (SR101L): Princess Drive to Shea Boulevard Roadway Improvements and COS Pima Rd and Trailside View Intersection Improvements
- Traffic Counts
- City of Scottsdale Signal Timing Data
- Existing AM Traffic Capacity Analysis
- Existing PM Traffic Capacity Analysis
- City of Scottsdale Crash Data
- Trip Generation
- SR101 Traffic Routing
- Passenger Car and Truck Site Traffic Assignment
- City of Scottsdale Average Daily Traffic Volume Maps
- Background Traffic Assignment
- 2025 Background AM Traffic Capacity Analysis
- 2025 Background PM Traffic Capacity Analysis
- 2028 Background AM Traffic Capacity Analysis
- 2028 Background PM Traffic Capacity Analysis
- 2025 Total AM Traffic Capacity Analysis
- 2025 Total PM Traffic Capacity Analysis
- 2028 Total AM Traffic Capacity Analysis
- 2028 Total PM Traffic Capacity Analysis
- 2028 Total ADOT Alternative Scenario Traffic Capacity Analysis
- AASHTO Storage Calculations
- ADOT Storage Calculations
- Relevant City of Scottsdale Standards
- Relevant ADOT Standards

# Proposed Improvements at SR101L NB Frontage Road & Pima Road Intersection



NORTH

GRAPHIC SCALE IN FEET
0 35 70 140




NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

# Pima Freeway (SR101L): Princess Drive to Shea Boulevard Roadway Improvements and Pima Rd and Trailside View Intersection Improvements

Visit OpenBooks Ombudsman-Citizens Aide Get the facts on COVID-19 Search AZ.Gov

ADOT



# Loop 101 (Pima Freeway), Princess Drive to Shea Boulevard Improvements

Overview | Interchange Design Concepts | Documents | Virtual Public Meeting

## Overview

The Arizona Department of Transportation, in partnership with the city of Scottsdale, the Federal Highway Administration and the Maricopa Association of Governments, has initiated a project to widen Loop 101 (Pima Freeway) between Princess Drive and Shea Boulevard and modify existing interchanges to improve traffic flow on Loop 101 and the cross streets.

**Project area map:** (click to enlarge)

## Background

A Design Concept Report (DCR) and environmental study was completed in 2010, which recommended the addition of a general-purpose lane in each direction and interchange improvements. The DCR was updated in 2021 to re-evaluate the interchanges to better accommodate increased traffic volumes in this area.

## Planned Project Elements

- Widening Loop 101 to add one general-purpose lane in both the northbound and southbound directions between Princess Drive and Shea Boulevard. This project will tie into the Loop 101 widening project from I-17 to Pima Road/Princess Drive, completed in 2022, and the earlier Loop 101 widening project south of Shea Boulevard.
- Reconstructing the interchange at Frank Lloyd Wright Boulevard to a new configuration.
- Making minor modifications to the interchanges and cross-streets at Princess Drive, Raintree Drive and Shea Boulevard to improve turning movements.
- Reconstructing sidewalks to comply with current Americans with Disabilities Act (ADA) standards.

## Public Input

The public was surveyed in 2020 to gather input on the proposed interchange concepts. A summary of the survey results will be available in the near future.

## Schedule

- The updated Design Concept Report was released in February 2021.
- Project is currently in the design phase.
- **A Virtual Public Meeting was held on Wednesday, Nov. 2, 2022.**
- Project construction is anticipated to begin in the fall of 2023.

- It's expected to take approximately two years to complete.

## Stay Up to Date

Please subscribe to receive project updates by email.

Submit questions and comments or request information in any of the following ways:

- ADOT English/Spanish Project Information Line: 855.712.8530
- Online: Visit azdot.gov/contact and select Projects from the drop-down menu
- By Mail: ADOT Communications, 1655 W. Jackson St., MD 126F, Phoenix, AZ 85007

Visit OpenBooks Ombudsman-Citizens Aide Get the facts on COVID-19 Search AZ.Gov

ADOT

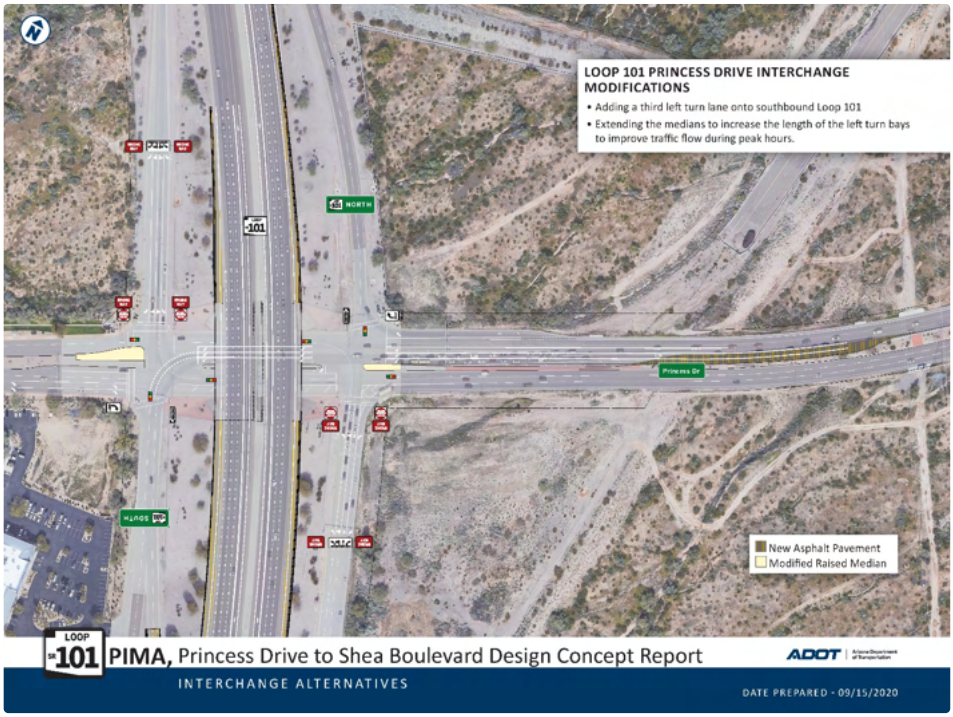


# Interchange Design Concepts - Loop 101 (Pima Freeway), Princess Drive to Shea Boulevard

Overview | Interchange Design Concepts | Documents | Virtual Public Meeting

Below are the proposed preliminary design concepts of the four interchanges included in this project with the recommended modifications. These interchange modifications are being recommended to improve existing and future traffic flow.

## Princess Drive Interchange




Planned improvements include:

- Adding a third left turn lane onto southbound Loop 101
- Extending the medians to increase the length of the left turn bays to improve traffic flow during peak hours.

## Frank Lloyd Wright Boulevard Interchange

## Raintree Drive Interchange

## Shea Boulevard Interchange

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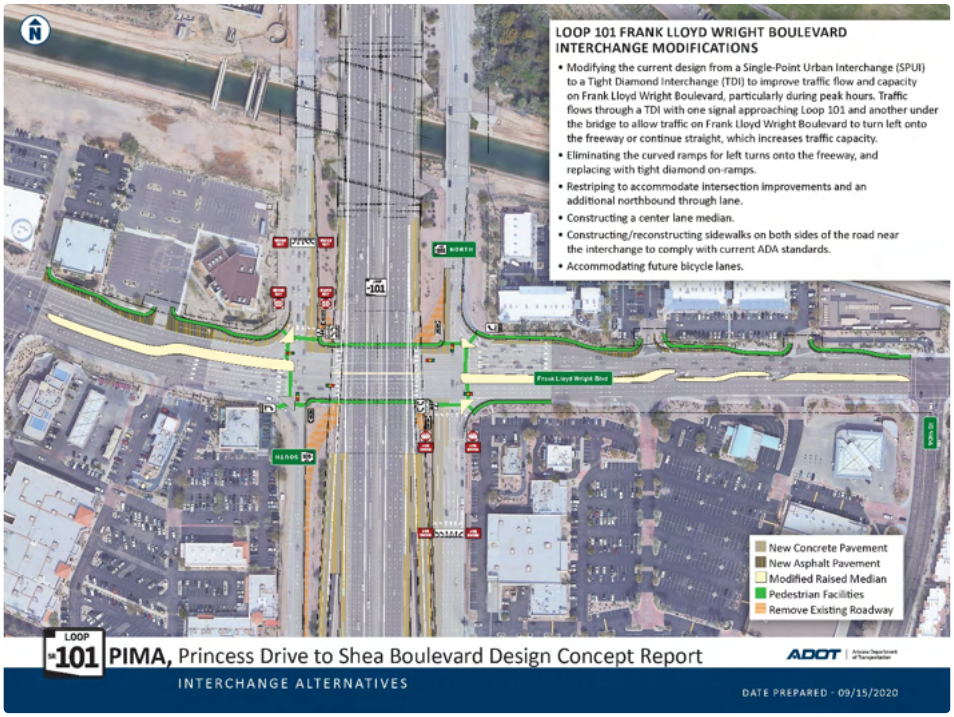
# Interchange Design Concepts - Loop 101 (Pima Freeway), Princess Drive to Shea Boulevard



Below are the proposed preliminary design concepts of the four interchanges included in this project with the recommended modifications. These interchange modifications are being recommended to improve existing and future traffic flow.

## Princess Drive Interchange

## Frank Lloyd Wright Boulevard Interchange




Planned improvements include:

- Modifying the current design from a Single-Point Urban Interchange (SPUI) to a Tight Diamond Interchange (TDI) to improve traffic flow and capacity on Frank Lloyd Wright Boulevard, particularly during peak hours. Traffic flows through a TDI with one signal approaching Loop 101 and another under the bridge to allow traffic on Frank Lloyd Wright Boulevard to turn left onto the freeway or continue straight, which increases traffic capacity.
- Eliminating the curved ramps for left turns onto the freeway, and replacing with tight diamond on-ramps.
- Restriping to accommodate intersection improvements and an additional northbound through lane.
- Constructing a center lane median.
- Constructing/reconstructing sidewalks on both sides of the road near the interchange to

comply with current ADA standards.

- Accommodating future bicycle lanes.

Raintree Drive Interchange

Shea Boulevard Interchange

# Pima Freeway (SR 101L): Princess Drive to Shea Boulevard

*General Purpose Lanes*

*Project 101 MA 036 F0123 01D | Federal Project No.: 101-B(210)T*

*Prepared for ADOT Infrastructure Delivery and Operations Division Project Management Group*

*Prepared by:*

Kimley»Horn

*February 2021*

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | RECORD DRAWING |
|---|---|---|---|---|---|
| 9 | ARIZ. | 101-B(210)T | 4 | 15 | |

101L MA 36

## NB ROADWAY SECTION

12' Outside Shldr
12' Lane
12' Lane
12' Lane
12' HOV Lane
10' Inside Shldr

Match Line Sta 36+00

Hayden Rd ½
Scottsdale Rd 1½
56th St 3½

1955 1955 1960 1960 1965 1965

Exst R/W

New Conc Half Barrier
Std C-10.50, Gutter=2.5'

PI 36+92.91

Removal Limits

Exst Pima Rd Cst ℄

Exst NB Frontage Rd Cst ℄

Pima Road

S58°23'40"W

Exst Princess Dr Ramp 'A'

NB SR 101L CST ℄ STA 1963+00
BEGIN PROJECT 101-B(210)T

New NB Striping

Exst NB SR 101L Cst ℄

Removal Limits

101N2

SR 101L

101-1

Varies

97

83'

40

1600 1605 1610 1595 1590 1585

Exst SR 101L Med & Cst ℄

SB SR 101L CST ℄ STA 1963+00
BEGIN PROJECT 101-B(210)T

Removal Limits

Constructed by F0121 01C
(Typ)

Exst Princess Dr Ramp 'B' Cst ℄

New Conc Half Barrier
Std C-10.50, Gutter=2.5'

Exst Princess Dr Cst ℄

Exst Princess Dr
Ramp 'D' Cst ℄

S28°38'00"E

New SB Striping

Exst R/W

Widen Exst
Princess Drive
Overpass
(Typ)

Princess Drive

Mid-Section Line

## SB ROADWAY SECTION

10' Inside Shldr
12' HOV Lane
12' Lane
12' Lane
12' Lane
0'-12' Lane
12' Outside Shldr

NOTE: See 2010 Final DCR Plans for additional information.

# SR 101L/PRINCESS/PIMA BUILD ALTERNATIVE

| | NAME | DATE |
|---|---|---|
| DESIGN | A. Stake | 01/21 |
| DRAWN | T. Baxter | 01/21 |
| CHECKED | A. Hathcock | 01/21 |

Kimley»Horn
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ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

SR 101L MAINLINE
PLAN SHEET
Sta 1952+00 to Sta 1966+00

ROUTE: SR 101L
LOCATION: PRINCESS DRIVE - SHEA BOULEVARD

TRACS NO. F0123 01D | 101-B(210)T

PRELIMINARY
DCR UPDATE
Review
NOT FOR CONSTRUCTION OR RECORDING

DWG. NO. C-2.1

___ OF ___

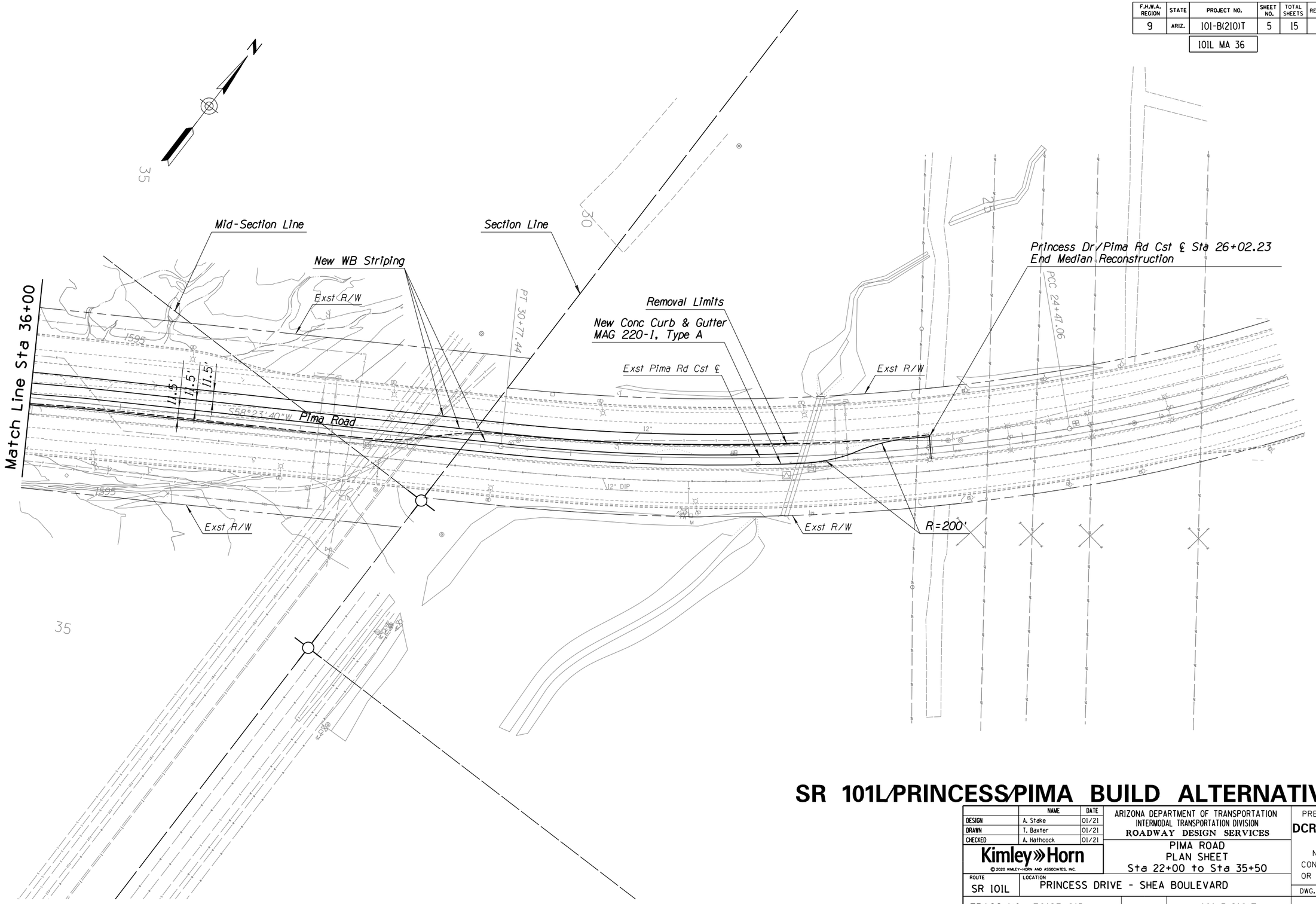


SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

2:34:52 PM 1/21/2021 AUSTIN.STAKE K:\PHX_ROADWAY\291244000-PROJ DEV ON-CALL 2018-006.11\291244009-SR101L-PRINCESS-SHEA DCR\CADD\12-SHEETS\ROADWAY\F0123P01.DGN

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | RECORD DRAWING |
|---|---|---|---|---|---|
| 9 | ARIZ. | 101-B(210)T | 5 | 15 | |
| | | 101L MA 36 | | | |

DATE- | SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-




# SR 101L/PRINCESS/PIMA BUILD ALTERNATIVE

| | NAME | DATE |
|---|---|---|
| DESIGN | A. Stake | 01/21 |
| DRAWN | T. Baxter | 01/21 |
| CHECKED | A. Hathcock | 01/21 |

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ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

PIMA ROAD
PLAN SHEET
Sta 22+00 to Sta 35+50

ROUTE: SR 101L
LOCATION: PRINCESS DRIVE - SHEA BOULEVARD

TRACS NO. F0123 01D | 101-B(210)T

PRELIMINARY
DCR UPDATE
Review
NOT FOR CONSTRUCTION OR RECORDING

DWG. NO. C-2.1a

___ OF ___

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | RECORD DRAWING |
|---|---|---|---|---|---|
| 9 | ARIZ. | 101-B(210)T | 6 | 15 | |

101L MA 36

## NB ROADWAY SECTION
12' Outside Shldr
12' Lane
12' Lane
12' Lane
12' Lane
12' Lane
12' HOV Lane
10' Inside Shldr

CENTRAL ARIZONA PROJECT CANAL

New Conc Median Std C-05.40

Match Line Sta 15+50

New Conc Sidewalk Std C-05.20

New Conc Curb & Gutter Type D, Std C-05.10

New Conc Curb & Gutter Type D, Std C-05.10

New Catch Basin Extend Exst 24" RCP (Typ)

New Conc Half Barrier Special Detail

Exst SR 101L Med & Cst ℄

New TCE

New WB Striping

Exst R/W

Removal Limits

Frank Lloyd Wright Boulevard

New Conc Curb & Gutter Type D, Std C-05.10

New Conc Sidewalk Std C-05.20

Widen Exst Frank Lloyd Wright Blvd Overpass (Typ)

Raintree Dr Ramp 'A' Cst ℄ Sta 14+18.70 = 100.51' Lt SR 101L Med & Cst ℄ Sta 2148+11.77

New Conc Curb & Gutter Type C, Std C-05.10

New Retaining Wall

New Conc Half Barrier Special Detail

New Conc Curb & Gutter Type D, Std C-05.10

## NB ROADWAY SECTION
12' Outside Shldr
12' Lane
12' Lane
12' Lane
12' Lane
12' HOV Lane
10' Inside Shldr

Exst NB Frontage Rd Cst ℄

Raintree Dr Ramp 'A' Cst ℄

New Conc Half Barrier Std C-10.50, Gutter=2.5'

Exst Raintree Dr Ramp 'A' Cst ℄

Exst R/W

Begin Raintree Dr Ramp 'A' Cst ℄ Sta 8+67.27 = 83.00' Lt SR 101L Med & Cst ℄ Sta 2142+60.68

New Retaining Wall

New NB Striping

Removal Limits

New 24" RCP (Typ)

S0°32'28"W

S1°57'32"E

S3°02'25"W

95'

83'

New SB Striping

Widen Exst CAP Canal Bridge Typ

Exst R/W

Section Line

Begin Raintree Dr Ramp 'B' Cst ℄ Sta 7+34.86 = 83.00' Rt SR 101L Med & Cst ℄ Sta 2141+51.59

New Conc Curb & Gutter Type D, Std C-05.10

New Retaining Wall

Removal Limits

New Conc Half Barrier Special Detail

New Conc Median Std C-05.40

New R/W

New TCE

New Conc Curb & Gutter Type D, Std C-05.10

New Conc Sidewalk Std C-05.20

EXIT 39

Raintree Dr
Thunderbird Rd

EXIT ONLY

## SB ROADWAY SECTION
10' Inside Shldr
12' HOV Lane
12' Lane
12' Lane
12' Lane
12' Lane
12' Aux Lane
12' Outside Shldr

Exst Raintree Dr Ramp 'B' Cst ℄

Raintree Dr Ramp 'B' Cst ℄

New Conc Curb & Gutter Type C, Std C-05.10

Exst R/W

New Conc Curb & Gutter Type D, Std C-05.10

Exst SB Frontage Rd Cst ℄

New TCE

New Conc Half Barrier Special Detail

New Retaining Wall

## SB ROADWAY SECTION
10' Inside Shldr
12' HOV Lane
12' Lane
12' Lane
12' Lane
12' Lane
12' Outside Shldr

Raintree Dr Ramp 'B' Cst ℄ Sta 14+25.45 = 105.51' Rt SR 101L Med & Cst ℄ Sta 2148+41.74

New EB Striping

Exst Frank Lloyd Wright Blvd Cst ℄

Removal Limits

Match Line Sta 24+50

NOTE: See 2010 Final DCR Plans for additional information.

# 15 SR 101L/FLW BUILD ALTERNATIVE

| | NAME | DATE |
|---|---|---|
| DESIGN | A. Stake | 01/21 |
| DRAWN | T. Baxter | 01/21 |
| CHECKED | A. Hathcock | 01/21 |

Kimley»Horn
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ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

SR 101L MAINLINE
PLAN SHEET
Sta 2139+00 to Sta 2153+00

ROUTE: SR 101L
LOCATION: PRINCESS DRIVE - SHEA BOULEVARD

TRACS NO. F0123 01D | 101-B(210)T

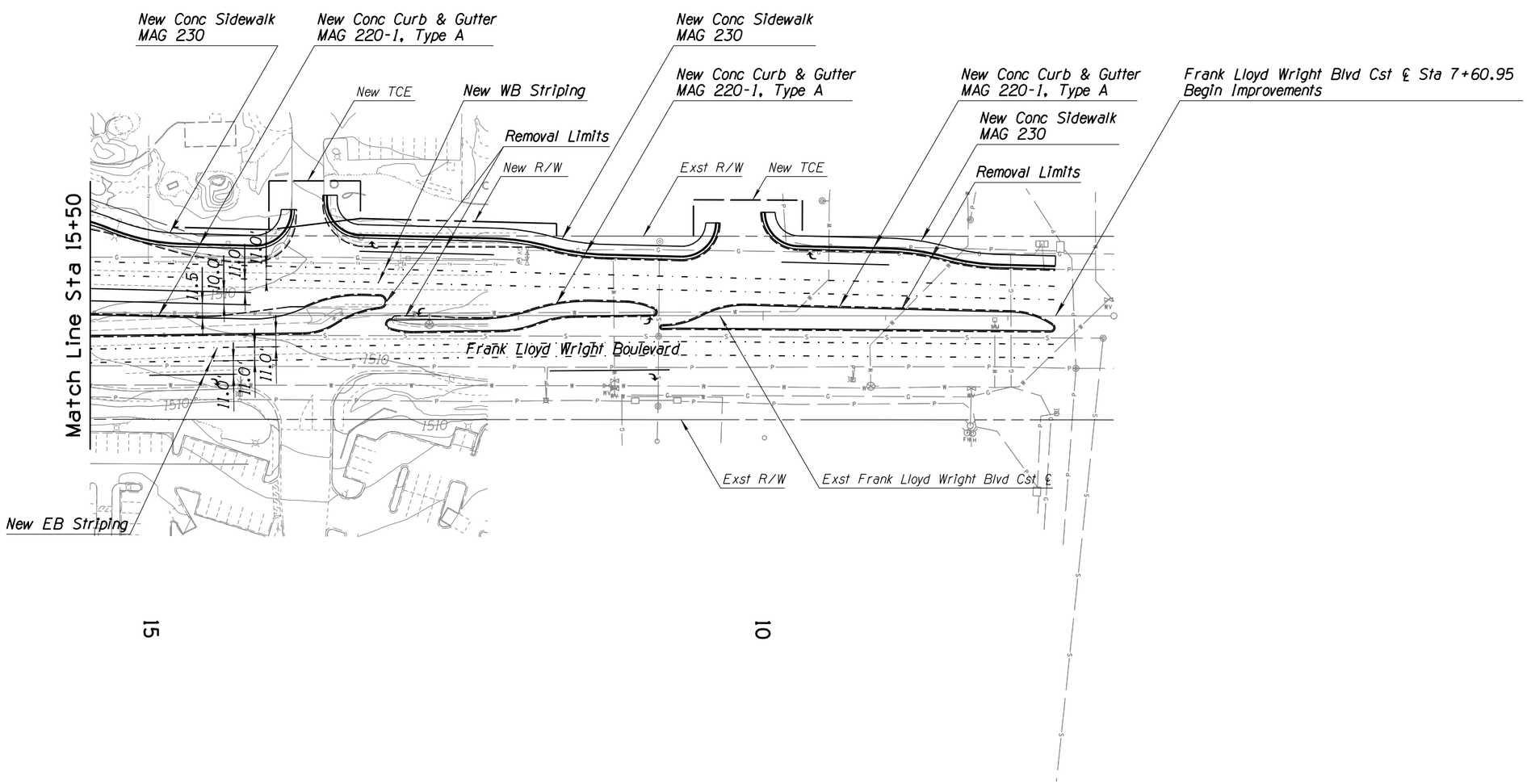
PRELIMINARY
DCR UPDATE
Review
NOT FOR CONSTRUCTION OR RECORDING

DWG. NO. C-2.6

___ OF ___

SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | RECORD DRAWING |
|---|---|---|---|---|---|
| 9 | ARIZ. | 101-B(210)T | 7 | 15 | |
| | | 101L MA 36 | | | |




# SR 101L/FLW BUILD ALTERNATIVE

| | NAME | DATE |
|---|---|---|
| DESIGN | A. Stake | 01/21 |
| DRAWN | T. Baxter | 01/21 |
| CHECKED | A. Hathcock | 01/21 |

Kimley»Horn
© 2020 KIMLEY-HORN AND ASSOCIATES, INC.

ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

FRANK LLOYD WRIGHT BLVD
PLAN SHEET
Sta 7+13.25 to Sta 15+10.00

PRELIMINARY
DCR UPDATE
Review
NOT FOR CONSTRUCTION OR RECORDING

ROUTE: SR 101L
LOCATION: PRINCESS DRIVE - SHEA BOULEVARD

TRACS NO. F0123 01D | 101-B(210)T

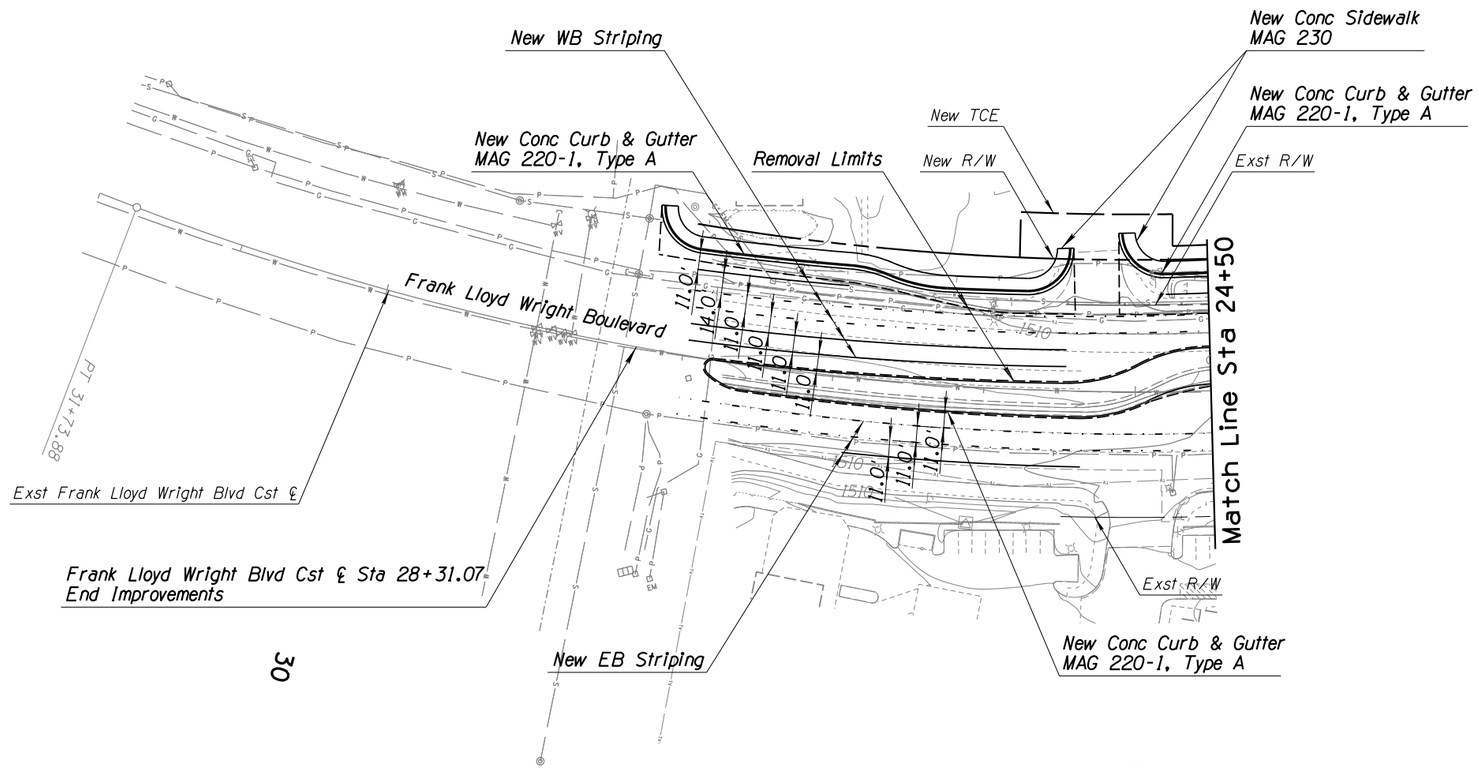
DWG. NO. C-2.6a

___ OF ___

SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

2:35:22 PM 1/21/2021 AUSTIN.STAKE K:\PHX_ROADWAY\291244000-PROJ DEV ON-CALL 2018-006.11\291244009-SR101L-PRINCESS-SHEA DCR\CADD\12-SHEETS\ROADWAY\F0123P06A.DGN

| F.H.W.A. REGION | STATE | PROJECT NO. | SHEET NO. | TOTAL SHEETS | RECORD DRAWING |
|---|---|---|---|---|---|
| 9 | ARIZ. | 101-B(210)T | 8 | 15 | |
| | | 101L MA 36 | | | |




# SR 101L/FLW BUILD ALTERNATIVE

| | NAME | DATE |
|---|---|---|
| DESIGN | A. Stake | 01/21 |
| DRAWN | T. Baxter | 01/21 |
| CHECKED | A. Hathcock | 01/21 |

Kimley»Horn
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ARIZONA DEPARTMENT OF TRANSPORTATION
INTERMODAL TRANSPORTATION DIVISION
ROADWAY DESIGN SERVICES

FRANK LLOYD WRIGHT BLVD
PLAN SHEET
Sta 24+50 to Sta 32+00

ROUTE: SR 101L
LOCATION: PRINCESS DRIVE - SHEA BOULEVARD

TRACS NO. F0123 01D | 101-B(210)T

PRELIMINARY
DCR UPDATE
Review
NOT FOR CONSTRUCTION OR RECORDING

DWG. NO. C-2.6b

___ OF ___

SURVEY NO. | FINISHED PLANS- | REVISIONS- | LOCATION- | DATE-

# CITY OF SCOTTSDALE

# PUBLIC IMPROVEMENTS

COUNCIL
**DAVID D. ORTEGA, MAYOR**
**TAMMY CAPUTI**
**TOM DURHAM**
**BETTY JANIK**
**KATHY LITTLEFIELD**
**LINDA MILHAVEN**
**SOLANGE WHITEHEAD**

CITY MANAGER
**JIM THOMPSON**

CITY ATTORNEY
**SHERRY SCOTT**

CITY CLERK
**BEN LANE**

## "AS-BUILT" CERTIFICATION

I HEREBY CERTIFY THAT THE "AS-BUILT" IMPROVEMENTS AS SHOWN HEREON ARE LOCATED AS NOTED, AND THE LOCATIONS ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED LAND SURVEYOR _____ DATE _____

## CITY OF SCOTTSDALE

REVIEWED AND RECOMMENDED APPROVAL BY:

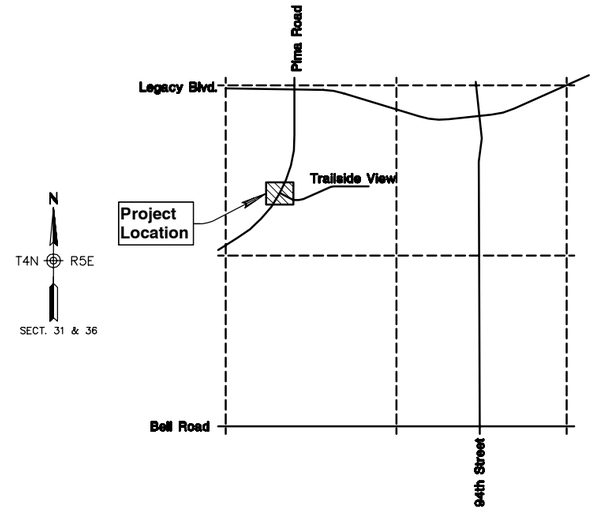
| | | | |
|---|---|---|---|
| **PAVING** | | **STRUCTURES** | |
| **GRADING & DRAINAGE** | | **BUILDING** | |
| **WATER & SEWER** | | **PLUMBING** | |
| **TRAFFIC** | | **MECHANICAL** | |
| **PLANNING IMPROVEMENTS** | | **ELECTRICAL** | |
| **PLANNING FACILITIES** | | **FIRE IMPROVEMENTS** | |
| **LANDSCAPE** | | **FIRE FACILITIES** | |
| **NATIVE PLANT** | | | |

**ENGINEERING COORDINATION MANAGER (OR DESIGNEE)** _____ **DATE** _____

**BUILDING OFFICIAL (OR DESIGNEE)** _____ **DATE** _____


ENGINEER
Gavan & Barker Inc.
Civil Engineering - Landscape Architecture
3030 North Central Avenue, Suite 700, Phoenix
Arizona 85012 Ph: 602-200-0031 Fx: 602-200-0032


# PIMA ROAD & TRAILSIDE VIEW
# TRAFFIC SIGNAL
# PROJECT NO. YH23A




Vicinity Map
N.T.S.

**FINAL DESIGN**
**March 2022**

SHEET INDEX

| Sht. No. | Dwg. No. | Description |
|---|---|---|
| 1 | G1 | COVER SHEET |
| 2 | C1 | SIDEWALK RAMPS |
| 3 | C2 | SIDEWALK RAMP GRADING |
| 4 | E1 | TRAFFIC SIGNAL PLAN |
| 5 | E2 | POLE & CONDUCTOR SCHEDULES |
| 6 | E3 | SIGNING & PAVEMENT MARKING PLAN |

BENCHMARK (COS NAVD '88)

| No. | Description |
|---|---|
| 1. | MCDOT POINT No. 43507-Z1<br>3" Maricopa County Brass Cap Flush Being the West ¼ Corner of Section 31, T4N, R5E<br>ELEVATION = 1595.253 (NAVD 88)<br>N: 963212.9400 E: 708037.9580 |

FLOOD INSURANCE RATE MAP BLOCK (FIRM)

| Community Number | Panel # Panel Date | Suffix | Date of FIRM (Index Date) | FIRM Zone | Base Flood Elevation (in AO Zone use Depth) |
|---|---|---|---|---|---|
| 045012 | 1320 10/16/13 | L | 10/16/13 | AO | 1 FEET |

**City of Scottsdale approved plans shall be kept on the job site at all times during the course of construction.**

DR/STAFF APPROVAL NO.

PIMA ROAD & TRAILSIDE VIEW
TRAFFIC SIGNAL
PROJECT NO. YH23A

PLAN REVIEW NO.

SHT. G1_

3/23/2022 11:08:51 AM 2013 - PIMA RD & TRAILSIDE VIEW SIGNAL DESIGN

PLOT DATE: 3/23/2022 11:10 AM

2013-PIMA RD. AND TRAILSIDE VIEW SIGNAL DESIGN

## GENERAL NOTES

- S — Sawcut and Match Existing
- P — Protect In Place
- M — Match Existing


Gavan & Barker Inc.
Civil Engineering - Landscape Architecture
3030 North Central Avenue, Suite 1530, Phoenix
Arizona 85012 Ph: 602-200-0031 Fx: 602-200-0032


## REMOVAL NOTES

| NO. | DESCRIPTION | UNIT | QTY. |
|---|---|---|---|
| 1 | Sawcut and Remove Concrete Sidewalk. | S.F. | 598 |
| 2 | Sawcut and Remove AC Pavement. | S.Y. | 15 |
| 3 | Sawcut and Remove Curb and Gutter. | L.F. | 55 |

## CONSTRUCTION NOTES

| NO. | DESCRIPTION | UNIT | QTY. |
|---|---|---|---|
| 1 | Install Concrete Sidewalk Per M.A.G. Std. Dtl. 230 (Modified to 6" Thick) | S.F. | 428 |
| 2 | Install Vertical Curb and Gutter Per M.A.G. Std. Dtl. 220-1 (Type A)(HT.=6") | L.F. | 55 |
| 3 | Install Sidewalk Ramp Per C.O.S. Std. Dtl. 2234 (Payment Limits Modified As Shown Hereon) | EA. | 2 |
| 4 | Install Pavement Replacement Per C.O.S. Std. Dtl. 2200. | S.Y. | 15 |
| 5 | Install Expansion Joint Per M.A.G. Section 340.3.4.1 | | |

ALL STATIONS & OFFSETS ARE MEASURED TO THE BACK OF CURB UNLESS OTHERWISE NOTED.

PT STA 19+36.65, 0.00' LT.
NOT FOUND

10' S.P.D.E.
65.0' EX. R/W
65.0' EX. R/W
10' S.P.D.E.
VARIES M.U.P.P.E.

NEW SIGNAL POLE (SEE TRAFFIC SIGNAL PLANS)
TC=17.12±
G=16.61±
EXIST. CURB AND GUTTER TO REMAIN
EXIST. SWLK TO REMAIN
EXIST. JOINT
TC=16.67±
G=16.20±
NEW SIGNAL POLE (SEE TRAFFIC SIGNAL PLANS)
8.0' P.U.E.
VARIES M.U.P.P.E.
R=35'
SAGUARO
EXIST. JOINT
EXIST. CURB AND GUTTER TO REMAIN
TC=15.94±
G=15.69±
STA 10+39.82
65.79' RT.
1.8'±
6'
4'
4'
6'
VARIES EXIST. R/W

NEW R/W
NEW SIGNAL POLE (SEE TRAFFIC SIGNAL PLANS)
R=1800.00'
L=1351.26'
Δ=43°00'43"
10+50
EXIST. CURB AND GUTTER TO REMAIN
FUTURE ROADWAY CONNECTION

PIMA ROAD

10+00
NOT FOUND
STA 10+00.00, 0.00' LT.

TRAILSIDE VIEW
S64°14'36"E 146.57'

G.B.
FOUND BRASS CAP FLUSH 0.03' SOUTH 0.04' EAST
FOUND BRASS CAP FLUSH 0.01' NORTH 0.04' EAST
FOUND BRASS CAP FLUSH
N66°43'01"E 141.17'
R=300.00'
L=256.77'
Δ=49°02'24"
T=136.84'

℄ OF RAMP STA 10+31.41 81.08' RT.
STA 10+29.79 90.91' RT.
STA 9+74.78 90.54' RT.
STA 9+76.87 100.27' RT.
STA 9+65.71 76.91' RT.
6.8'±
6'
4'
4'
6'
VARIES EXIST. R/W
8" PVC
EXIST. CURB AND GUTTER TO REMAIN
TC=15.35±
G=14.83±
EXIST. JOINT
R=35'
NEW SIGNAL POLE (SEE TRAFFIC SIGNAL PLANS)
NEW PULL BOX (SEE TRAFFIC SIGNAL PLANS)
NEW SIGNAL POLE (SEE TRAFFIC SIGNAL PLANS)
TC=14.63±
G=14.20±
EXIST. JOINT
EXIST. SWLK TO REMAIN
TC=14.59±
G=14.10±
NEW R/W
EXIST. CURB AND GUTTER TO REMAIN

9+50
PC STA 5+85.39, 0.00' LT.
NOT FOUND

10' S.P.D.E.
65.0' EX. R/W
VARIES EX. R/W
NEW SIGNAL POLE (SEE TRAFFIC SIGNAL PLANS)

12" S
12" DIP W
8" DIP W
8" PVC S
8" PVC
30"SD
ZAYO
E

SCALE: 1"=10'
0 5 10 20

Call at least two full working days before you begin excavation.
ARIZONA 811 Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-8-00-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

## ABBREVIATIONS

| | | | |
|---|---|---|---|
| ℄ | Centerline | R/W | Right-of-Way |
| TC | Top of Curb | SWLK | Sidewalk |
| C | Concrete | PCC | Point of Compound Curvature |
| CNT. | Contraction | | |
| DWY | Driveway | P.U.E. | Public Utility Easement |
| ——•—— | Grade Break | M.U.P.P.E. | Multi-Use Public Path Easement |
| EXP. | Expansion | | |
| EXIST. | Existing | S.P.D.E. | Sidewalk, Path and Drainage Easement |
| G | Gutter | | |

| DATE | REVISION | BY |
|---|---|---|

ENGINEER
REGISTERED PROFESSIONAL ENGINEER
15594
MARK T. GAVAN
STATE OF ARIZONA
Expires 12-31-23

CITY OF SCOTTSDALE ARIZONA

**PUBLIC WORKS**
**CAPITAL PROJECT MANAGEMENT**
7447 E. INDIAN SCHOOL RD.
SCOTTSDALE, ARIZONA 85251

SHEET TITLE
# SIDEWALK RAMPS

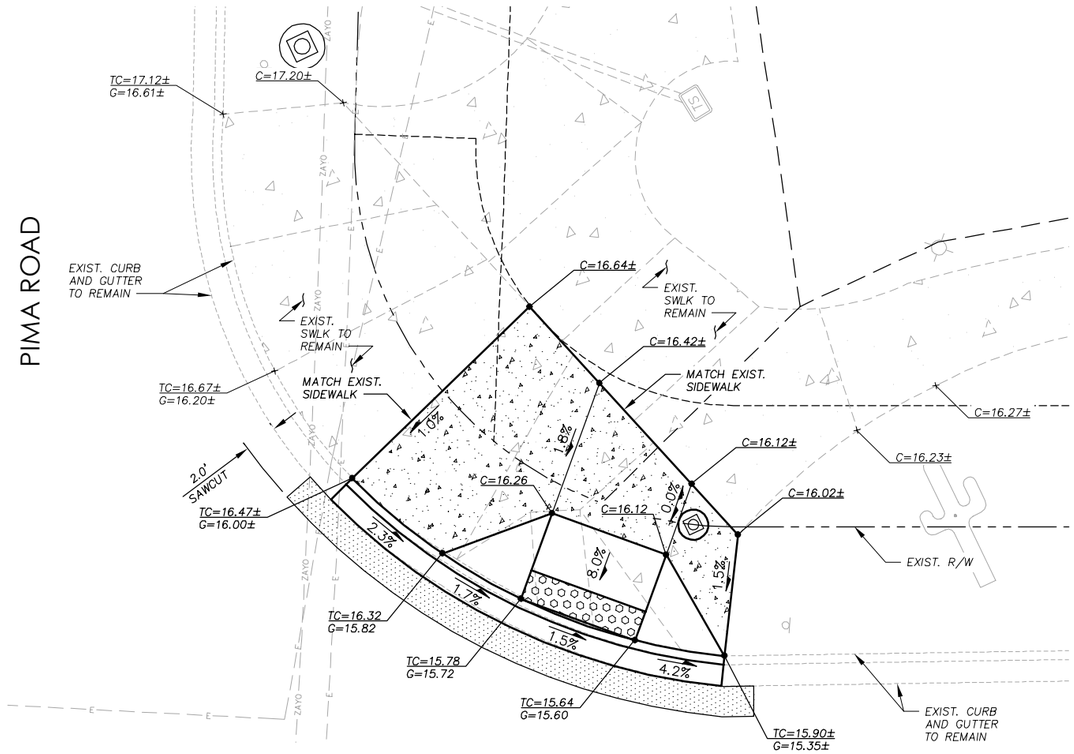
PROJECT TITLE
PIMA ROAD & TRAILSIDE VIEW
TRAFFIC SIGNAL

| SCALE | DESIGNED | DATE | BID NO. | SHT. |
|---|---|---|---|---|
| HORIZ. 1"=10' | MTG | 03/2022 | | C1 |
| VERT. | DRAWN AJA | AS-BUILT | PROJECT NO. YH23A | 2 OF 6 |

Gavan & Barker Inc.
Civil Engineering - Landscape Architecture
3030 North Central Avenue, Suite 1530, Phoenix
Arizona 85012 Ph: 602-200-0031 Fx: 602-200-0032

PLOT DATE: 3/23/2022 11:10 AM

PIMA ROAD



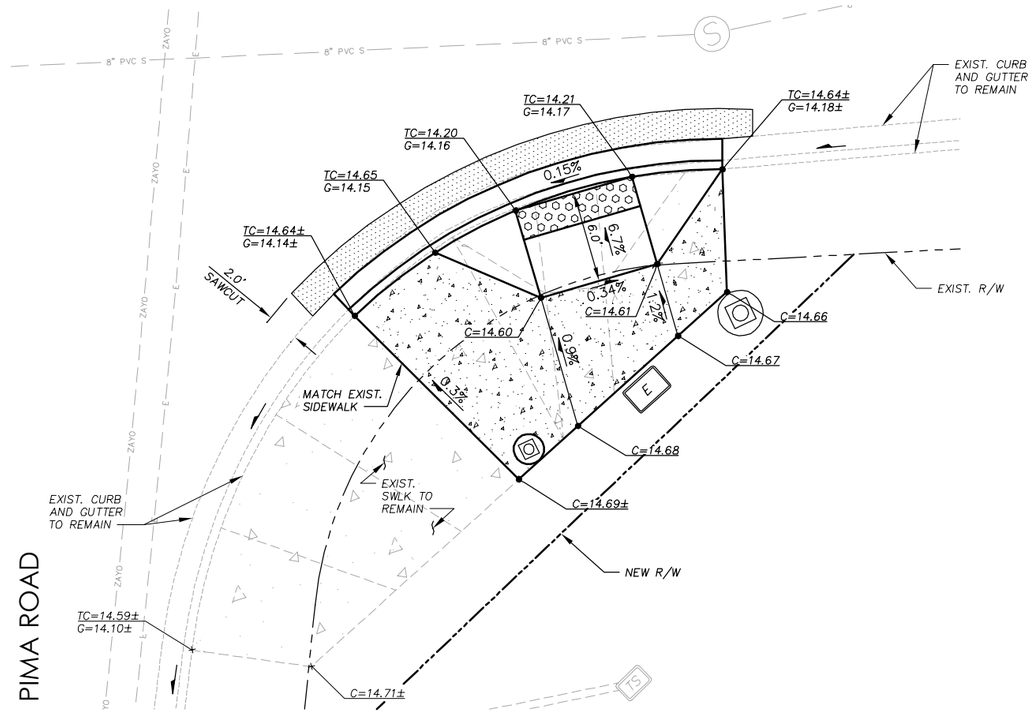

TRAILSIDE VIEW

NORTHEAST CORNER SIDEWALK RAMP GRADING PLAN

SCALE: 1"=5'

TRAILSIDE VIEW

PIMA ROAD




SOUTHEAST CORNER SIDEWALK RAMP GRADING PLAN

SCALE: 1"=5'

0 2.5 5 10

SCALE: 1"=5'

Call at least two full working days before you begin excavation.
ARIZONA 811 Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

| DATE | REVISION | BY |
|---|---|---|

ENGINEER

15594 MARK T. GAVAN — REGISTERED PROFESSIONAL ENGINEER — STATE OF ARIZONA, U.S.A. — Expires 12-31-23

CITY OF SCOTTSDALE — ARIZONA

**PUBLIC WORKS**

**CAPITAL PROJECT MANAGEMENT**

7447 E. INDIAN SCHOOL RD.
SCOTTSDALE, ARIZONA 85251

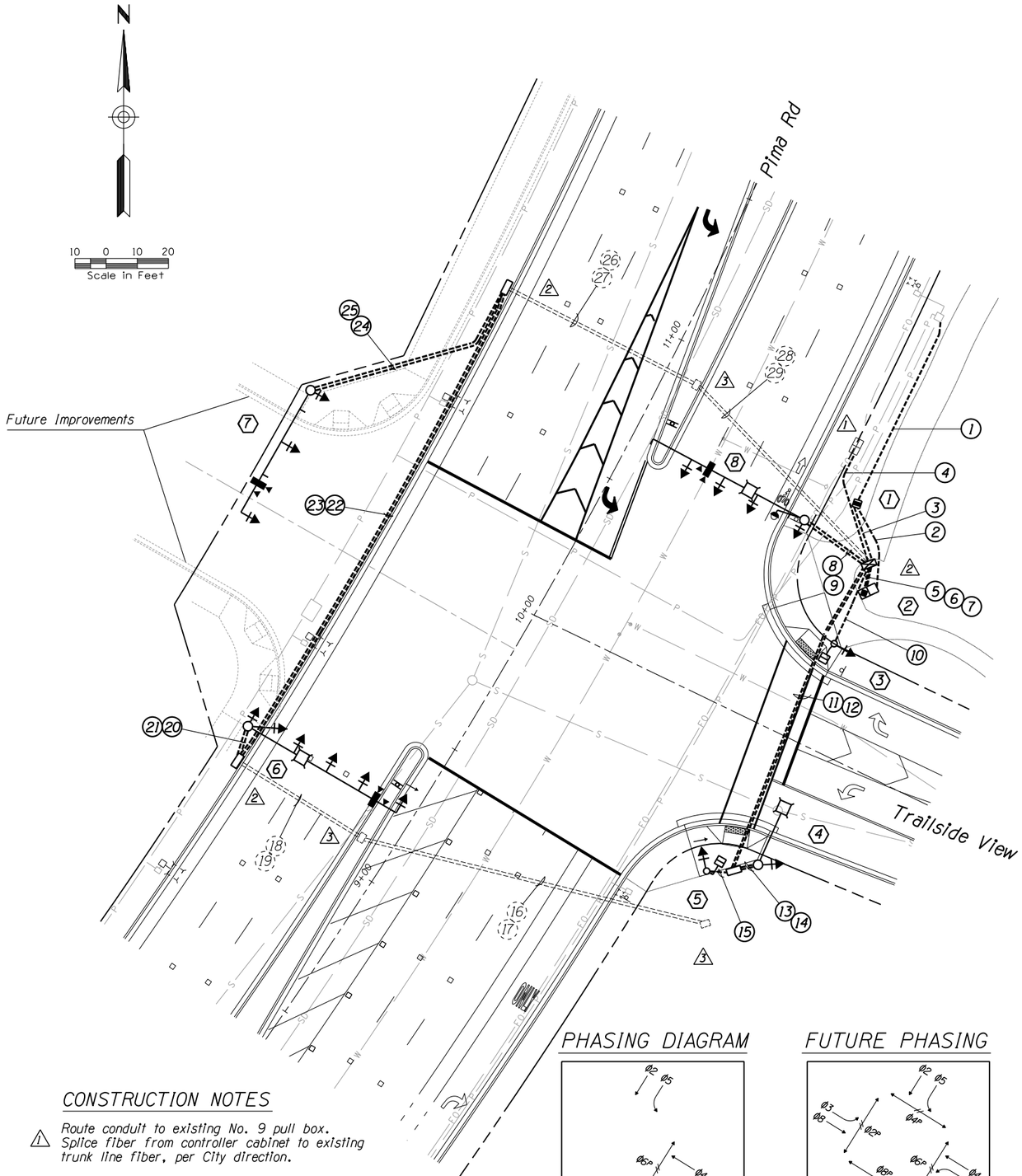
SHEET TITLE: SIDEWALK RAMP GRADING

PROJECT TITLE: PIMA ROAD & TRAILSIDE VIEW TRAFFIC SIGNAL

| SCALE | DESIGNED | DATE | BID NO. | SHT. |
|---|---|---|---|---|
| HORIZ. | MTG | 03/2022 | | C2 |
| VERT. | DRAWN AJA | AS-BUILT | PROJECT NO. YH23A | 3 OF 6 |

2013-PIMA RD. AND TRAILSIDE VIEW SIGNAL DESIGN

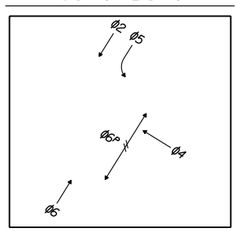
3610 N. 44th Street
Suite 100
Phoenix, AZ 85018
602/955-7206
LEE ENGINEERING



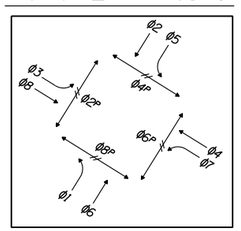

## CONSTRUCTION NOTES

1. Route conduit to existing No. 9 pull box. Splice fiber from controller cabinet to existing trunk line fiber, per City direction.
2. Replace existing No. 7 pull box, in place, with new, with new clean stone sump.
3. Protect existing pull box in place.

## PHASING DIAGRAM




## FUTURE PHASING




## GENERAL NOTES FOR TRAFFIC SIGNAL CONSTRUCTION

1. All traffic signal equipment and all construction in public rights-of-way or easements granted for public use shall conform to:
   a. ADOT Standard Drawings and Specifications,
   b. Maricopa Association of Governments (MAG) Uniform Standard Specifications and Details for Public Works Construction,
   c. The COS Supplement to MAG Standard Specifications and Details,
   d. The COS Traffic Signal requirements.
2. Traffic control shall conform to the City of Phoenix "Traffic Barricade Manual" and/or as directed by the City of Scottsdale Public Works Inspector.
3. Utility locations shown on these plans are based on the best information available as supplied by Gavan and Barker, Inc. The Contractor shall contact Arizona 811 (formerly Arizona Blue Stake) at (602) 659-7500 before construction and verify actual utility locations.
4. Traffic signal poles, mast arms and service cabinets shall be painted with 2 coats of enamel paint meeting ADOT Specification Section #1002.
5. All pull boxes shall be ADOT standard type #7. The main pull box shall be an ADOT #7 Ext., with 18-inch drainage, with #57 rock, per ADOT spec.
6. A ground rod shall be installed within the customer side of the electrical service panel and in the control cabinet foundation and an attached #4 bare grounding conductor.
7. Pavement replacement shall conform to COS Standard Detail 2200 and 2201. Sidewalk replacement shall conform to MAG Standard Detail 230.
8. Metro Street Name Signs shall be installed on traffic signal mast arms per COS Supplement to MAG Specifications, Section 402.3.4 and COS Standard Detail 2134.
9. Applicable signal and pedestrian indications shall be LED type lamps that meet ITE Equipment and Materials Standards for LED traffic signal indications.
10. Emergency Vehicle Pre-Emption shall be field-adjusted to optimize reception. All detectors shall bee GTT Model 722.
11. All existing traffic control devices (including pedestrian and vehicle detection, communications, CCTV and STOP signs) and street lights shall remain in operation until new installations are energized and operational. Any traffic detectors disturbed during construction shall be replaced with temporary detectors until the final detection system is in place and operational.
12. Any removed COS equipment shall be salvaged and returned to the COS Traffic Signal Shop at 9191 E. San Salvador, Scottsdale. All salvaged equipment shall be dismantled.
13. Questions concerning the traffic signal design should be directed to: Dave Bruggeman, PE, PTOE, Lee Engineering, (602) 618-0406.
14. Electrical Service Address: XXXX N. Pima Rd., Scottsdale, AZ APS Contact: Scott.Timar@aps.com
15. Prior to START of construction, the Contractor shall contact the COS Traffic Operations Division at (480) 312-5620 to coordinate power authorization, cabinet set-up, inspection requirements, and the pre-construction meeting. COS Traffic Signals shall be called 48 hours prior to all inspection points.
16. Prior to START of construction the contractor shall contact the electric power provider to confirm power location and to schedule inspection.
17. All wires shall be color coded with tape as shown in COS Standard Detail 2141.
18. All signal foundations shall be flat, not dished or blocked out. Foundations shall be no lower than back of sidewalk and/or 6 ½ inches above the finished edge of the road and shall not be grouted.
19. All traffic signal poles, new, borrowed or existing, shall be brought to "like new" condition, including unused holes welded, pole painted, wire upgraded to IMSA cable.
20. Poles shall conform to the COS Qualified Products List, and approved by the COS Signals Manager.
21. Traffic signal "As-Built" plans shall be provided to the Traffic Signal Inspector prior to final acceptance. All "As-Builts" shall be signed by the Traffic Signal Contractor Foreman, with company name and contact information.
22. LED street lights shall be GE Evolve ERLH014C330A.
23. All items furnished and installed shall conform to the current City of Scottsdale Qualified Products List.

## "AS BUILT" CERTIFICATION

I hereby certify that the "As Built" improvements shown hereon are located as noted and the locations are correct to the best of my knowledge and belief.

Registered Civil Engineer Date

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811 BLUE STAKE, INC.
Call 811 or click Arizona811.com

| DATE | REVISION | BY |
|---|---|---|
| | | |

ENGINEER

Registered Professional Engineer (Civil) CERTIFICATE NO. 16229 DAVID W. BRUGGEMAN Date Signed 09/30/22 ARIZONA, U.S.A.

CITY OF SCOTTSDALE ARIZONA

PUBLIC WORKS
CAPITAL PROJECT MANAGEMENT
7447 E. INDIAN SCHOOL RD.
SCOTTSDALE, ARIZONA 85251

SHEET TITLE
TRAFFIC SIGNAL PLAN

PROJECT TITLE
PIMA RD AT TRAILSIDE VIEW

| SCALE | DESIGNED | DATE | BID NO. | SHT. |
|---|---|---|---|---|
| HORIZ. 1"=20' | DB | 03/18/22 | | E1 |
| VERT. N/A | DRAWN DB | AS-BUILT | PROJECT NO. YH23A | 4 OF 6 |

XXX-XX

# CONTROLLER AND POLE SCHEDULE

| LOCATION (STA) | NO. | CONTROLLER / SERVICE PEDESTAL LAYOUT |
|---|---|---|
| Sta 10+79.4, 73.9' Rt | 1 | METER PEDESTAL CABINET:<br>MEYERS MUEG16-M100<br>WITH 30X36X4 TECH PAD |
| Sta 10+55.9, 89.1' Rt | 2 | SAFETRAN 332 HYBRID ITS CABINET W/EXTENDER BASE AND ACCESS PANEL WITH 36X36X4 TECH PAD.<br>ECONOLITE COBALT RACK MOUNT CONTROLLER.<br>12-FIBER PATCH PANEL, SWITCH/ROUTER PER SECTION 5-4.112 OF 2021 COS DESIGN STDS & POLICIES MANUAL |
| **LOCATION (STA)** | **NO.** | **POLE LAYOUT** |
| Sta 10+38.0, 88.4' Rt | 3 | Type A Pole<br>Ht=10'<br>M/H,V<br>AUDIBLE TACTILE<br>PPB W/R10-3E SIGN<br>F,IV |
| Sta 9+68.6, 102.3' Rt | 4 | Type Q Pole<br>20' Lum Arm<br>Fut Sig Arm<br>LED Luminaire<br>F,V |
| Sta 9+58.3, 89.1' Rt | 5 | Type A Pole<br>Ht=10'<br>M/H,V<br>AUDIBLE TACTILE<br>PPB W/R10-3E SIGN<br>G,IV |
| Sta 9+21.0, 60.2' Lt | 6 | Type R Pole<br>20' Lum Arm<br>55' Sig Arm<br>LED Luminaire<br>EVP<br>Video Detection<br>Metro SNS<br>14' 12' 12' 12'<br>G,II F,II F,II F,II F,F,VII |
| Sta 10+28.0, 97.7' Lt | 7 | Type R Pole<br>Fut Lum Arm<br>45' Sig Arm<br>EVP<br>Video Detection<br>Metro SNS<br>14' 12' 12'<br>F,II F,II F,V |
| Sta 10+67.2, 61.4' Rt | 8 | Type R Pole<br>20' Lum Arm<br>55' Sig Arm<br>LED Luminaire<br>EVP<br>Video Detection<br>LED Luminaire<br>CCTV<br>Metro SNS<br>14' 12' 12' 12'<br>F,II F,II F,II F,V |

POLE LOCATIONS SUBJECT TO ADJUSTMENT BY THE CITY OF SCOTTSDALE TO AVOID CONFLICTS.

POLE AND MAST ARM DESIGN SHALL COMPLY WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS, 6TH EDITION (2013) WITH 2015 INTERIM REVISIONS.

SIGNED AND SEALED SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION IN ACCORDANCE WITH THE ADOT STANDARD SPECIFICATIONS, UNLESS MANUFACTURER HAS BEEN GRANTED APPROVAL ON THE DEPARTMENT'S MOST RECENTLY PUBLISHED APPROVED PRODUCTS LIST (APL), AND ARE ALSO SPECIFICALLY APPROVED BY THE CITY OF SCOTTSDALE.


3610 N. 44th Street
Suite 100
Phoenix, AZ 85018
602/955-7206
LEE ENGINEERING


# CONDUIT SCHEDULE

| | CONDUIT RUN NO. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | CONDUIT SIZE (IN.) | 2½ | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2½ | 2½ | 2½ | 2½ | 3 | 3 | 3 | 3 | 3 | 3 | 2½ | 2½ | 2½ | 2½ | |
| AWG | CIRCUIT PHASE | NUMBER OF WIRES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VIDEO DET CABLE | VIDEO DETECTION | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Ø2/Ø5 | | | | | | 1 | | | | | | | | | | | | | | | 1 | | 1 | | | | 1 | | 1 | |
| | Ø4 | | | | | | 1 | | | | | | | | | | | | | | | | | | | 1 | | 1 | | 1 | |
| | Ø6 | | | | | | 1 | | | 1 | | | | | | | | | | | | | | | | | | | | | |
| | Ø8 Future | | | | | | | | | | | | | | | | NOT USED | NOT USED | NOT USED | NOT USED | | | | | | | | | | | |
| #10 THHN | STREET LIGHTS | | 2 | | | | | | 2 | | | 2 | | 2 | | | | | | | 2 | | 2 | | | | 2 | | 2 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| #14 STRANDED IMSA 19-1 CABLE ◇ | Ø1 Future | | | | | 2 | | | 2 | | | | | | | | | | | | | | | | | | 2 | | 2 | | |
| | Ø2 | | | | | 3 | | | | | | 3 | | | | 3 | | | | | 3 | | 3 | | | | 3 | | 3 | | |
| | Ø3 Future | | | | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Ø4 | | | | | 3 | | | | | 3 | 3 | | 3 | | | | | | | 3 | | 3 | | 3 | | 3 | | 3 | | |
| | Ø5 | | | | | 2 | | | | | | 2 | | | | 2 | | | | | 2 | | 2 | | | | 2 | | 2 | | |
| | Ø6 | | | | | 3 | | 3 | | | | | | | | | | | | | | | | | | | | | | | |
| | Ø7 Future | | | | | 2 | | | | | | | | | | | | | | | 2 | | 2 | | | | 2 | | 2 | | |
| | Ø8 Future | | | | | 3 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | PED.SIG. M/H Ø6 | | | | | 2 | | | | | 2 | 2 | | | | 2 | | | | | | | | | | | | | | | |
| | PED.P.B. Ø6 | | | | | 1 | | | | | 1 | 1 | | | | 1 | | | | | | | | | | | | | | | |
| | PED.P.B. COMMON | | | | | 1 | | | | | 1 | 1 | | | | 1 | | | | | | | | | | | | | | | |
| | SIGNAL COMMON | | | | | | | | 1 | | 1 | | | 1 | | 1 | | | | | 1 | | | | 1 | | | | | | |
| | SPARES | | | | | 16 | | | | | | 26 | | | | | | | | | | | 28 | | | | 28 | | 28 | | |
| #8 | BOND (GREEN) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | | | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| | SIGNAL COMMON | | | | | 1 | | | | | | 1 | | | | | | | | | | | 1 | | | | 1 | | 1 | | |
| #6 THHN | HOT LIGHTING | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | HOT SIGNALS | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | COMMON | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FIBER | INTERCONNECT | | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OPTICOM 138 CABLE | EVP | | | | | | 1 | | 1 | | | 1 | | | | | | | | | 1 | | | | 1 | | 1 | | 1 | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

CONDUIT & PULL TAPE BY CONTRACTOR PER APS STANDARDS

◇ TWO 20-COND. CABLE PER STREET CROSSING. USE 2-COND, 4-COND & 7-COND IMSA CABLE INTO POLES. SCHEDULE INDICATES MINIMUM CONDUCTORS NEEDED. SEE LATEST C.O.S. STANDARDS. USE STRANDED IMSA CABLE.

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811 BLUE STAKE, INC.
Call 811 or click Arizona811.com

| DATE | REVISION | BY |
|---|---|---|

ENGINEER
Registered Professional Engineer (Civil)
CERTIFICATE NO.
16229
DAVID W. BRUGGEMAN
Date Signed 03/31/22
ARIZONA, U.S.A.

CITY OF SCOTTSDALE
ARIZONA

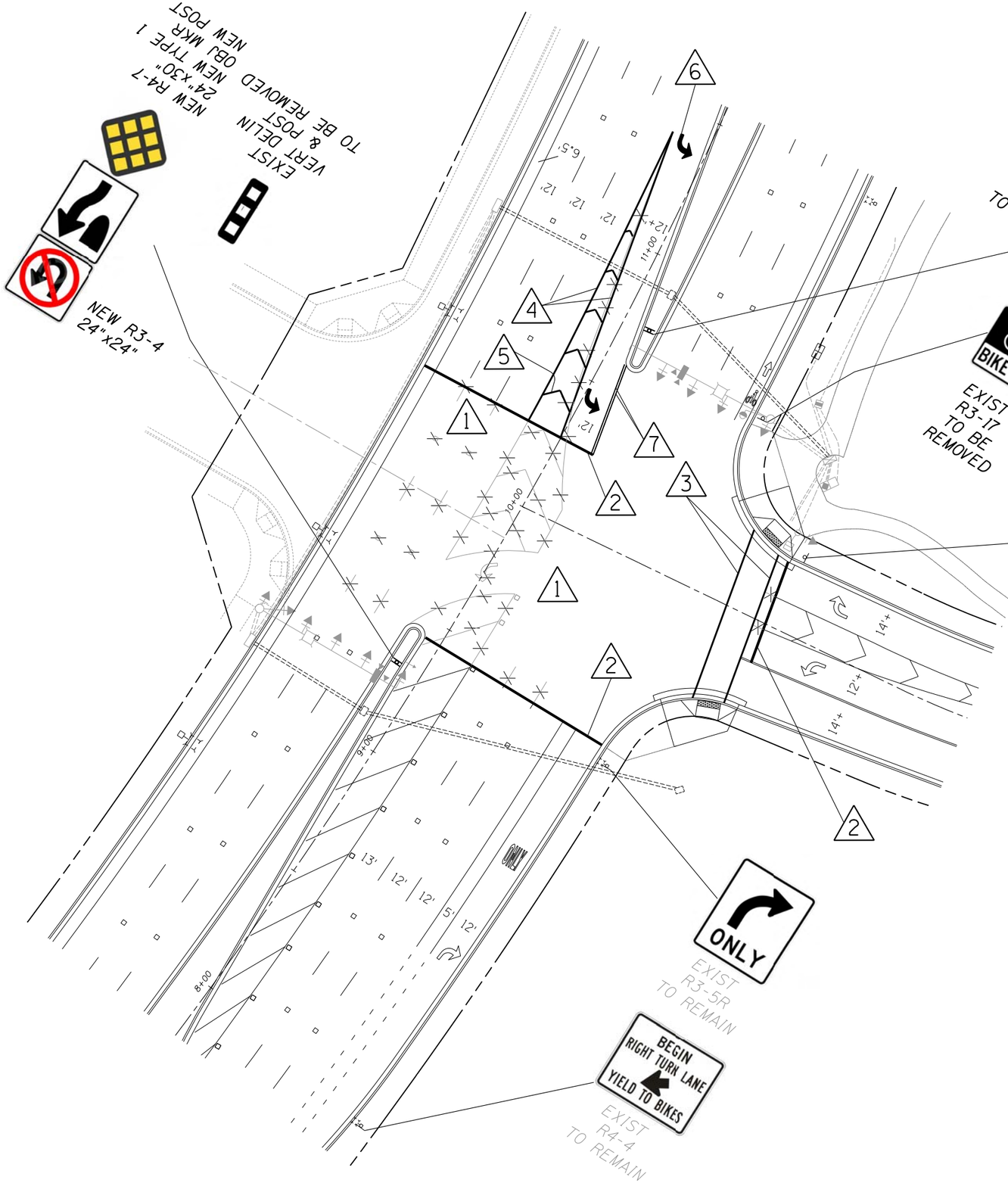
PUBLIC WORKS
CAPITAL PROJECT MANAGEMENT
7447 E. INDIAN SCHOOL RD.
SCOTTSDALE, ARIZONA 85251

SHEET TITLE
POLE & CONDUCTOR SCHEDULES

PROJECT TITLE
PIMA RD AT TRAILSIDE VIEW

| SCALE | DESIGNED DB | DRAWN DB | DATE 03/18/22 | AS-BUILT | BID NO. | PROJECT NO. YH23A | SHT. E2 | 5 OF 6 |
|---|---|---|---|---|---|---|---|---|

XXX-XX



NEW W3-3
30"X30"
NEW POST
350' EAST OF
STOP LINE


LEE ENGINEERING
3610 N. 44th Street
Suite 100
Phoenix, AZ 85018
602/955-7206


1. Obliterate Existing Pavement Markings
2. 18" White Stop Line
3. 12" White Crosswalk
4. 8" White Over Existing
5. 12" White Over Existing, typ
6. Turn Arrow Over Existing, typ
7. 4" Dbl Yellow, 30 Lf

## Signing & Pavement Marking Notes:

1. All Signing & Pavement Markings shall conform to the Section 5-5 of the 2021 COS Design Standards & Policies Manual and Section 402 of the 2020 COS Supplemental MAG Specifications.

2. Obliterate Existing Pavement Markings for White/Yellow Channelizing, Crosshatching and Pavement Turn Arrows through intersection on Pima Road, from Approximately Sta 9+45 to Approximately Sta 10+27.

3. Obliterate Existing White Dashes and Raised Pavement Markers within intersection on Pima Road.

4. Obliterate any surplus White Striping for NB Pima Rd, and for WB Trailside View, beyond new Stop Lines.

| DATE | REVISION | BY |
|---|---|---|

ENGINEER

Registered Professional Engineer (Civil)
CERTIFICATE NO.
16229
DAVID W. BRUGGEMAN
Date Signed 03/23/2022
ARIZONA, U.S.A.

CITY OF SCOTTSDALE
ARIZONA

PUBLIC WORKS
CAPITAL PROJECT MANAGEMENT
7447 E. INDIAN SCHOOL RD.
SCOTTSDALE, ARIZONA 85251

SHEET TITLE
SIGNING & PAVEMENT MARKING PLAN

PROJECT TITLE
PIMA RD AT TRAILSIDE VIEW

| SCALE | DESIGNED | DATE | BID NO. | SHT. |
|---|---|---|---|---|
| HORIZ. 1"=20' | DB | 03/18/22 | | E3 |
| VERT. N/A | DRAWN DB | AS-BUILT | PROJECT NO. YH23A | 6 OF 6 |

Contact Arizona 811 at least two full working days before you begin excavation
ARIZONA811
Call 811 or click Arizona811.com

XXX-XX

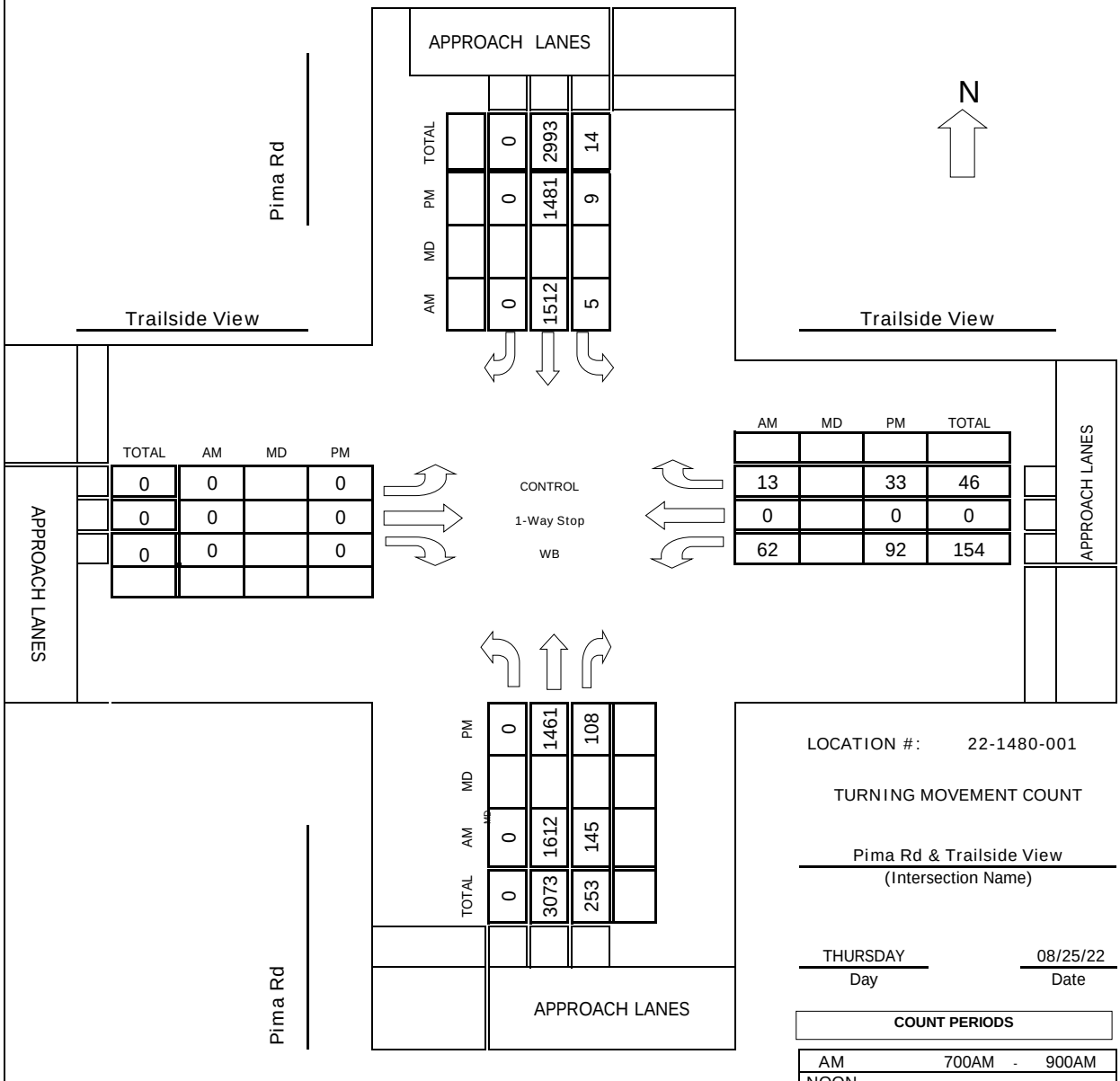
# Traffic Counts

**Intersection Turning Movement**
**Prepared by:**

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 22-1480-001

*TMC SUMMARY OF Pima Rd & Trailside View*




LOCATION #: 22-1480-001

TURNING MOVEMENT COUNT

Pima Rd & Trailside View
(Intersection Name)

THURSDAY
Day

08/25/22
Date

**COUNT PERIODS**

| | | | |
|---|---|---|---|
| AM | 700AM | - | 900AM |
| NOON | | - | |
| PM | 400PM | - | 600PM |

AM PEAK HOUR 745 AM

NOON PEAK HOUR

PM PEAK HOUR 430 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracity traffic grou

| | | | | | | |
|---|---|---|---|---|---|---|
| N-S STREET: | Pima Rd | DATE: | 08/25/22 | LOCATION: | Scottsdale |
| E-W STREET: | Trailside View | DAY: | THURSDAY | PROJECT# | 22-1480-001 |

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| LANES: | 0 | 3 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | |
| 6:00 AM | | | | | | | | | | | | | |
| 6:15 AM | | | | | | | | | | | | | |
| 6:30 AM | | | | | | | | | | | | | |
| 6:45 AM | | | | | | | | | | | | | |
| 7:00 AM | 0 | 287 | 31 | 0 | 349 | 0 | 0 | 0 | 0 | 22 | 0 | 2 | 691 |
| 7:15 AM | 0 | 324 | 23 | 6 | 469 | 0 | 0 | 0 | 0 | 25 | 0 | 9 | 856 |
| 7:30 AM | 0 | 370 | 32 | 5 | 386 | 0 | 0 | 0 | 0 | 19 | 0 | 4 | 816 |
| 7:45 AM | 0 | 398 | 28 | 0 | 407 | 0 | 0 | 0 | 0 | 20 | 0 | 5 | 858 |
| 8:00 AM | 0 | 379 | 43 | 3 | 361 | 0 | 0 | 0 | 0 | 12 | 0 | 2 | 800 |
| 8:15 AM | 0 | 420 | 43 | 0 | 390 | 0 | 0 | 0 | 0 | 17 | 0 | 4 | 874 |
| 8:30 AM | 0 | 415 | 31 | 2 | 354 | 0 | 0 | 0 | 0 | 13 | 0 | 2 | 817 |
| 8:45 AM | 0 | 377 | 29 | 1 | 376 | 0 | 0 | 0 | 0 | 19 | 0 | 11 | 813 |
| 9:00 AM | | | | | | | | | | | | | |
| 9:15 AM | | | | | | | | | | | | | |
| 9:30 AM | | | | | | | | | | | | | |
| 9:45 AM | | | | | | | | | | | | | |
| 10:00 AM | | | | | | | | | | | | | |
| 10:15 AM | | | | | | | | | | | | | |
| 10:30 AM | | | | | | | | | | | | | |
| 10:45 AM | | | | | | | | | | | | | |
| 11:00 AM | | | | | | | | | | | | | |
| 11:15 AM | | | | | | | | | | | | | |
| 11:30 AM | | | | | | | | | | | | | |
| 11:45 AM | | | | | | | | | | | | | |

| TOTAL | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 0 | 2970 | 260 | 17 | 3092 | 0 | 0 | 0 | 0 | 147 | 0 | 39 | 6525 |
| Approach % | 0.00 | 91.95 | 8.05 | 0.55 | 99.45 | 0.00 | #### | #### | #### | 79.03 | 0.00 | 20.97 | |
| App/Depart | 3230 | / | 3009 | 3109 | / | 3239 | 0 | / | 277 | 186 | / | 0 | |

AM Peak Hr Begins at: 745 AM

| PEAK | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 0 | 1612 | 145 | 5 | 1512 | 0 | 0 | 0 | 0 | 62 | 0 | 13 | 3349 |
| Approach % | 0.00 | 91.75 | 8.25 | 0.33 | 99.67 | 0.00 | #### | #### | #### | 82.67 | 0.00 | 17.33 | |

| PEAK HR. FACTOR: | 0.949 | 0.932 | 0.000 | 0.750 | 0.958 |
|---|---|---|---|---|---|

CONTROL: 1-Way Stop (WB)
COMMENT 1:
GPS: 33.650187, -111.888118

# Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracity traffic grou

| | | | | | | |
|---|---|---|---|---|---|---|
| N-S STREET: | Pima Rd 0 | DATE: | 08/25/22 | LOCATION: | Scottsdale |
| E-W STREET: | Trailside View | DAY: | THURSDAY | PROJECT# | 22-1480-001 |

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| LANES: | 0 | 3 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | |
| 1:00 PM | | | | | | | | | | | | | |
| 1:15 PM | | | | | | | | | | | | | |
| 1:30 PM | | | | | | | | | | | | | |
| 1:45 PM | | | | | | | | | | | | | |
| 2:00 PM | | | | | | | | | | | | | |
| 2:15 PM | | | | | | | | | | | | | |
| 2:30 PM | | | | | | | | | | | | | |
| 2:45 PM | | | | | | | | | | | | | |
| 3:00 PM | | | | | | | | | | | | | |
| 3:15 PM | | | | | | | | | | | | | |
| 3:30 PM | | | | | | | | | | | | | |
| 3:45 PM | | | | | | | | | | | | | |
| 4:00 PM | 0 | 340 | 36 | 1 | 389 | 0 | 0 | 0 | 0 | 22 | 0 | 5 | 793 |
| 4:15 PM | 0 | 353 | 29 | 4 | 346 | 0 | 0 | 0 | 0 | 23 | 0 | 11 | 766 |
| 4:30 PM | 0 | 340 | 19 | 1 | 394 | 0 | 0 | 0 | 0 | 29 | 0 | 11 | 794 |
| 4:45 PM | 0 | 362 | 32 | 1 | 323 | 0 | 0 | 0 | 0 | 19 | 0 | 7 | 744 |
| 5:00 PM | 0 | 376 | 23 | 4 | 432 | 0 | 0 | 0 | 0 | 23 | 0 | 4 | 862 |
| 5:15 PM | 0 | 383 | 34 | 3 | 332 | 0 | 0 | 0 | 0 | 21 | 0 | 11 | 784 |
| 5:30 PM | 0 | 331 | 35 | 3 | 337 | 0 | 0 | 0 | 0 | 26 | 0 | 5 | 737 |
| 5:45 PM | 0 | 333 | 40 | 2 | 268 | 0 | 0 | 0 | 0 | 25 | 0 | 3 | 671 |
| 6:00 PM | | | | | | | | | | | | | |
| 6:15 PM | | | | | | | | | | | | | |
| 6:30 PM | | | | | | | | | | | | | |
| 6:45 PM | | | | | | | | | | | | | |

| TOTAL | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 0 | 2818 | 248 | 19 | 2821 | 0 | 0 | 0 | 0 | 188 | 0 | 57 | 6151 |
| Approach % | 0.00 | 91.91 | 8.09 | 0.67 | 99.33 | 0.00 | #### | #### | #### | 76.73 | 0.00 | 23.27 | |
| App/Depart | 3066 | / | 2875 | 2840 | / | 3009 | 0 | / | 267 | 245 | / | 0 | |

PM Peak Hr Begins at: 430 PM

| PEAK | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 0 | 1461 | 108 | 9 | 1481 | 0 | 0 | 0 | 0 | 92 | 0 | 33 | 3184 |
| Approach % | 0.00 | 93.12 | 6.88 | 0.60 | 99.40 | 0.00 | #### | #### | #### | 73.60 | 0.00 | 26.40 | |
| PEAK HR. FACTOR: | | 0.941 | | | 0.854 | | | 0.000 | | | 0.781 | | 0.923 |

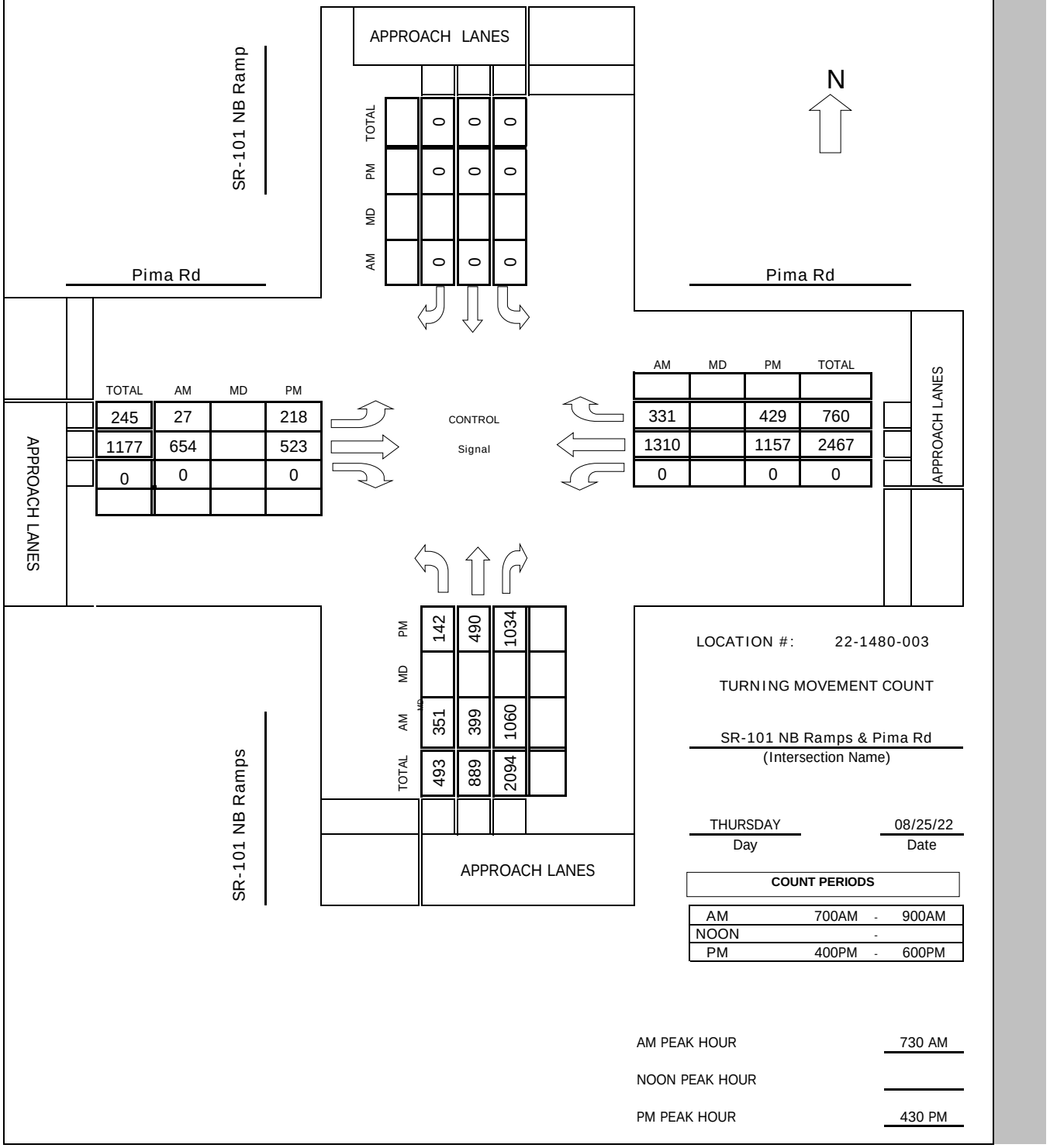
| | |
|---|---|
| CONTROL: | 1-Way Stop (WB) |
| COMMENT 1: | 0 |
| GPS: | 33.650187, -111.888118 |

**Intersection Turning Movement**
**Prepared by:**

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 22-1480-003

*TMC SUMMARY OF SR-101 NB Ramps & Pima Rd*




LOCATION #: 22-1480-003

TURNING MOVEMENT COUNT

SR-101 NB Ramps & Pima Rd
(Intersection Name)

THURSDAY
Day

08/25/22
Date

**COUNT PERIODS**

| | | | |
|---|---|---|---|
| AM | 700AM | - | 900AM |
| NOON | | - | |
| PM | 400PM | - | 600PM |

AM PEAK HOUR 730 AM

NOON PEAK HOUR

PM PEAK HOUR 430 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracity traffic grou

| | | | | | | |
|---|---|---|---|---|---|---|
| N-S STREET: | SR-101 NB Ramps | DATE: | 08/25/22 | LOCATION: | Scottsdale |
| E-W STREET: | Pima Rd | DAY: | THURSDAY | PROJECT# | 22-1480-003 |

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| LANES: | 1.5 | 1.5 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 4 | 1 | |
| 6:00 AM | | | | | | | | | | | | | |
| 6:15 AM | | | | | | | | | | | | | |
| 6:30 AM | | | | | | | | | | | | | |
| 6:45 AM | | | | | | | | | | | | | |
| 7:00 AM | 60 | 61 | 189 | 0 | 0 | 0 | 9 | 117 | 0 | 0 | 298 | 80 | 814 |
| 7:15 AM | 58 | 84 | 209 | 0 | 0 | 0 | 2 | 140 | 0 | 0 | 377 | 93 | 963 |
| 7:30 AM | 88 | 103 | 270 | 0 | 0 | 0 | 1 | 123 | 0 | 0 | 364 | 78 | 1027 |
| 7:45 AM | 90 | 110 | 257 | 0 | 0 | 0 | 7 | 175 | 0 | 0 | 335 | 79 | 1053 |
| 8:00 AM | 91 | 115 | 245 | 0 | 0 | 0 | 11 | 175 | 0 | 0 | 303 | 85 | 1025 |
| 8:15 AM | 82 | 71 | 288 | 0 | 0 | 0 | 8 | 181 | 0 | 0 | 308 | 89 | 1027 |
| 8:30 AM | 103 | 75 | 300 | 0 | 0 | 0 | 13 | 141 | 0 | 0 | 305 | 84 | 1021 |
| 8:45 AM | 106 | 59 | 258 | 0 | 0 | 0 | 14 | 155 | 0 | 0 | 265 | 87 | 944 |
| 9:00 AM | | | | | | | | | | | | | |
| 9:15 AM | | | | | | | | | | | | | |
| 9:30 AM | | | | | | | | | | | | | |
| 9:45 AM | | | | | | | | | | | | | |
| 10:00 AM | | | | | | | | | | | | | |
| 10:15 AM | | | | | | | | | | | | | |
| 10:30 AM | | | | | | | | | | | | | |
| 10:45 AM | | | | | | | | | | | | | |
| 11:00 AM | | | | | | | | | | | | | |
| 11:15 AM | | | | | | | | | | | | | |
| 11:30 AM | | | | | | | | | | | | | |
| 11:45 AM | | | | | | | | | | | | | |

| TOTAL | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 678 | 678 | 2016 | 0 | 0 | 0 | 65 | 1207 | 0 | 0 | 2555 | 675 | 7874 |
| Approach % | 20.11 | 20.11 | 59.79 | #### | #### | #### | 5.11 | 94.89 | 0.00 | 0.00 | 79.10 | 20.90 | |
| App/Depart | 3372 | / | 1418 | 0 | / | 0 | 1272 | / | 3223 | 3230 | / | 3233 | |

AM Peak Hr Begins at: 730 AM

| PEAK | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 351 | 399 | 1060 | 0 | 0 | 0 | 27 | 654 | 0 | 0 | 1310 | 331 | 4132 |
| Approach % | 19.39 | 22.04 | 58.56 | #### | #### | #### | 3.96 | 96.04 | 0.00 | 0.00 | 79.83 | 20.17 | |
| PEAK HR. FACTOR: | | 0.982 | | | 0.000 | | | 0.901 | | | 0.928 | | 0.981 |

| | |
|---|---|
| CONTROL: | Signal |
| COMMENT 1: | |
| GPS: | 33.647144, -111.892474 |

# Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracity traffic grou

| | | | | | | |
|---|---|---|---|---|---|---|
| N-S STREET: | SR-101 NB Ramps 0 | DATE: | 08/25/22 | LOCATION: | Scottsdale |
| E-W STREET: | Pima Rd | DAY: | THURSDAY | PROJECT# | 22-1480-003 |

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| LANES: | 1.5 | 1.5 | 1 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 4 | 1 | |
| 1:00 PM | | | | | | | | | | | | | |
| 1:15 PM | | | | | | | | | | | | | |
| 1:30 PM | | | | | | | | | | | | | |
| 1:45 PM | | | | | | | | | | | | | |
| 2:00 PM | | | | | | | | | | | | | |
| 2:15 PM | | | | | | | | | | | | | |
| 2:30 PM | | | | | | | | | | | | | |
| 2:45 PM | | | | | | | | | | | | | |
| 3:00 PM | | | | | | | | | | | | | |
| 3:15 PM | | | | | | | | | | | | | |
| 3:30 PM | | | | | | | | | | | | | |
| 3:45 PM | | | | | | | | | | | | | |
| 4:00 PM | 30 | 163 | 259 | 0 | 0 | 0 | 58 | 118 | 0 | 0 | 263 | 122 | 1013 |
| 4:15 PM | 34 | 113 | 245 | 0 | 0 | 0 | 44 | 127 | 0 | 0 | 282 | 125 | 970 |
| 4:30 PM | 46 | 123 | 248 | 0 | 0 | 0 | 52 | 115 | 0 | 0 | 272 | 119 | 975 |
| 4:45 PM | 42 | 108 | 247 | 0 | 0 | 0 | 67 | 133 | 0 | 0 | 287 | 91 | 975 |
| 5:00 PM | 30 | 146 | 272 | 0 | 0 | 0 | 61 | 135 | 0 | 0 | 304 | 112 | 1060 |
| 5:15 PM | 24 | 113 | 267 | 0 | 0 | 0 | 38 | 140 | 0 | 0 | 294 | 107 | 983 |
| 5:30 PM | 34 | 108 | 243 | 0 | 0 | 0 | 31 | 123 | 0 | 0 | 227 | 96 | 862 |
| 5:45 PM | 46 | 66 | 240 | 0 | 0 | 0 | 19 | 127 | 0 | 0 | 238 | 83 | 819 |
| 6:00 PM | | | | | | | | | | | | | |
| 6:15 PM | | | | | | | | | | | | | |
| 6:30 PM | | | | | | | | | | | | | |
| 6:45 PM | | | | | | | | | | | | | |

| TOTAL | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 286 | 940 | 2021 | 0 | 0 | 0 | 370 | 1018 | 0 | 0 | 2167 | 855 | 7657 |
| Approach % | 8.81 | 28.95 | 62.24 | #### | #### | #### | 26.66 | 73.34 | 0.00 | 0.00 | 71.71 | 28.29 | |
| App/Depart | 3247 | / | 2165 | 0 | / | 0 | 1388 | / | 3039 | 3022 | / | 2453 | |

PM Peak Hr Begins at: 430 PM

| PEAK | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 142 | 490 | 1034 | 0 | 0 | 0 | 218 | 523 | 0 | 0 | 1157 | 429 | 3993 |
| Approach % | 8.52 | 29.41 | 62.06 | #### | #### | #### | 29.42 | 70.58 | 0.00 | 0.00 | 72.95 | 27.05 | |
| PEAK HR. FACTOR: | | 0.930 | | | 0.000 | | | 0.926 | | | 0.953 | | 0.942 |

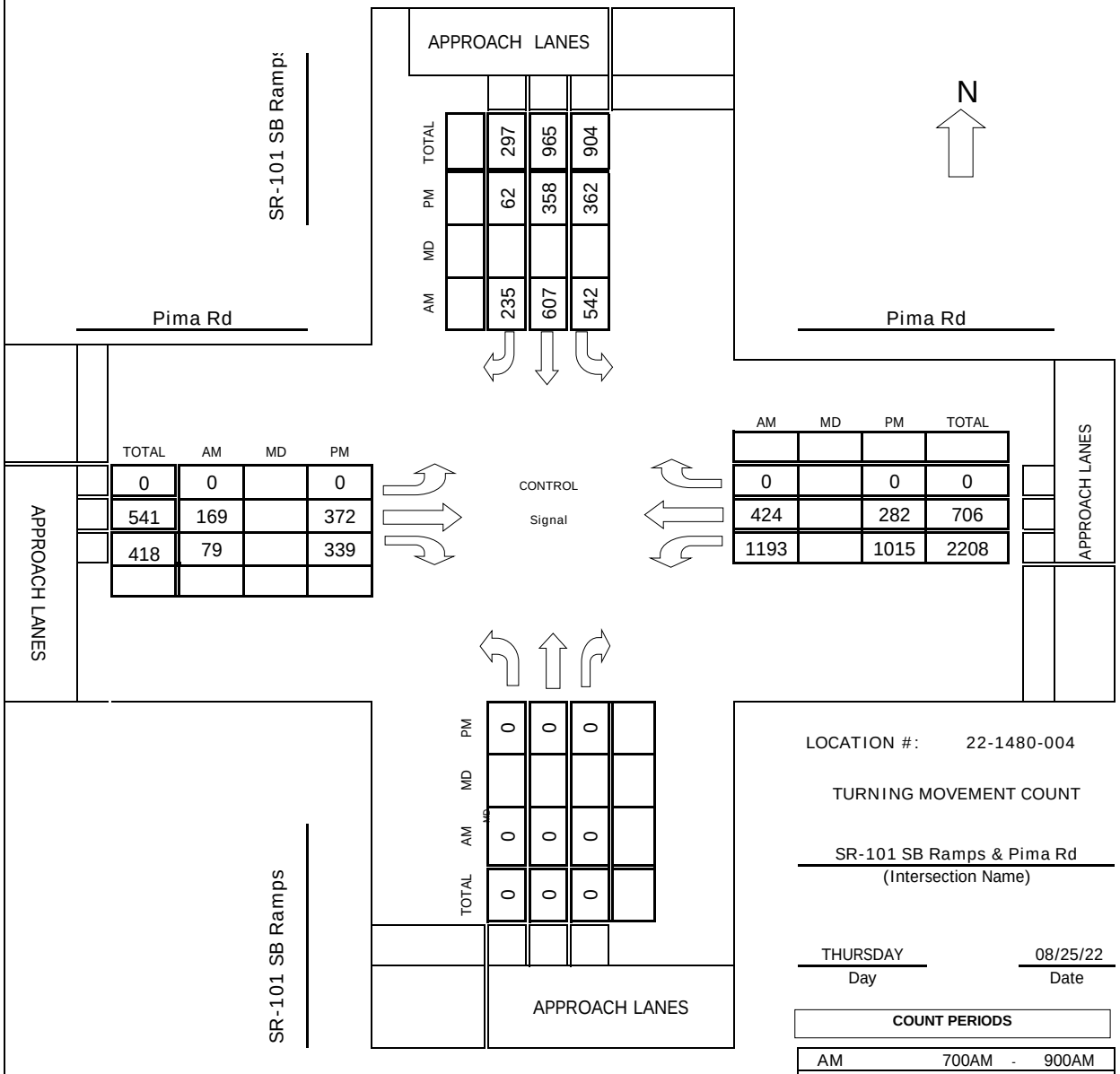
| | |
|---|---|
| CONTROL: | Signal |
| COMMENT 1: | 0 |
| GPS: | 33.647144, -111.892474 |

**Intersection Turning Movement**
**Prepared by:**

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 22-1480-004

*TMC SUMMARY OF SR-101 SB Ramps & Pima Rd*




LOCATION #: 22-1480-004

TURNING MOVEMENT COUNT

SR-101 SB Ramps & Pima Rd
(Intersection Name)

THURSDAY
Day

08/25/22
Date

**COUNT PERIODS**

| | | | |
|---|---|---|---|
| AM | 700AM | - | 900AM |
| NOON | | - | |
| PM | 400PM | - | 600PM |

AM PEAK HOUR 745 AM

NOON PEAK HOUR

PM PEAK HOUR 415 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytraffic grou

| | | | | | | |
|---|---|---|---|---|---|---|
| N-S STREET: | SR-101 SB Ramps | DATE: | 08/25/22 | LOCATION: | Scottsdale |
| E-W STREET: | Pima Rd | DAY: | THURSDAY | PROJECT# | 22-1480-004 |

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| LANES: | 0 | 0 | 0 | 1.5 | 1 | 1.5 | 0 | 3 | 2 | 2 | 3 | 0 | |
| 6:00 AM | | | | | | | | | | | | | |
| 6:15 AM | | | | | | | | | | | | | |
| 6:30 AM | | | | | | | | | | | | | |
| 6:45 AM | | | | | | | | | | | | | |
| 7:00 AM | 0 | 0 | 0 | 106 | 75 | 24 | 0 | 20 | 16 | 290 | 68 | 0 | 599 |
| 7:15 AM | 0 | 0 | 0 | 130 | 153 | 40 | 0 | 12 | 18 | 345 | 90 | 0 | 788 |
| 7:30 AM | 0 | 0 | 0 | 104 | 128 | 39 | 0 | 20 | 19 | 339 | 113 | 0 | 762 |
| 7:45 AM | 0 | 0 | 0 | 137 | 168 | 63 | 0 | 45 | 20 | 316 | 109 | 0 | 858 |
| 8:00 AM | 0 | 0 | 0 | 148 | 158 | 58 | 0 | 38 | 19 | 293 | 101 | 0 | 815 |
| 8:15 AM | 0 | 0 | 0 | 147 | 154 | 51 | 0 | 42 | 21 | 284 | 106 | 0 | 805 |
| 8:30 AM | 0 | 0 | 0 | 110 | 127 | 63 | 0 | 44 | 19 | 300 | 108 | 0 | 771 |
| 8:45 AM | 0 | 0 | 0 | 124 | 146 | 53 | 0 | 45 | 18 | 243 | 128 | 0 | 757 |
| 9:00 AM | | | | | | | | | | | | | |
| 9:15 AM | | | | | | | | | | | | | |
| 9:30 AM | | | | | | | | | | | | | |
| 9:45 AM | | | | | | | | | | | | | |
| 10:00 AM | | | | | | | | | | | | | |
| 10:15 AM | | | | | | | | | | | | | |
| 10:30 AM | | | | | | | | | | | | | |
| 10:45 AM | | | | | | | | | | | | | |
| 11:00 AM | | | | | | | | | | | | | |
| 11:15 AM | | | | | | | | | | | | | |
| 11:30 AM | | | | | | | | | | | | | |
| 11:45 AM | | | | | | | | | | | | | |

| TOTAL | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 0 | 0 | 0 | 1006 | 1109 | 391 | 0 | 266 | 150 | 2410 | 823 | 0 | 6155 |
| Approach % | #### | #### | #### | 40.14 | 44.25 | 15.60 | 0.00 | 63.94 | 36.06 | 74.54 | 25.46 | 0.00 | |
| App/Depart | 0 | / | 0 | 2506 | / | 3669 | 416 | / | 1272 | 3233 | / | 1214 | |

AM Peak Hr Begins at: 745 AM

| PEAK | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 0 | 0 | 0 | 542 | 607 | 235 | 0 | 169 | 79 | 1193 | 424 | 0 | 3249 |
| Approach % | #### | #### | #### | 39.16 | 43.86 | 16.98 | 0.00 | 68.15 | 31.85 | 73.78 | 26.22 | 0.00 | |
| PEAK HR. FACTOR: | | 0.000 | | | 0.940 | | | 0.954 | | | 0.951 | | 0.947 |

| | |
|---|---|
| CONTROL: | Signal |
| COMMENT 1: | |
| GPS: | 33.646533, -111.893754 |

# Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracity traffic grou

| | | | | | | |
|---|---|---|---|---|---|---|
| N-S STREET: | SR-101 SB Ramps 0 | DATE: | 08/25/22 | LOCATION: | Scottsdale |
| E-W STREET: | Pima Rd | DAY: | THURSDAY | PROJECT# | 22-1480-004 |

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| LANES: | 0 | 0 | 0 | 1.5 | 1 | 1.5 | 0 | 3 | 2 | 2 | 3 | 0 | |
| 1:00 PM | | | | | | | | | | | | | |
| 1:15 PM | | | | | | | | | | | | | |
| 1:30 PM | | | | | | | | | | | | | |
| 1:45 PM | | | | | | | | | | | | | |
| 2:00 PM | | | | | | | | | | | | | |
| 2:15 PM | | | | | | | | | | | | | |
| 2:30 PM | | | | | | | | | | | | | |
| 2:45 PM | | | | | | | | | | | | | |
| 3:00 PM | | | | | | | | | | | | | |
| 3:15 PM | | | | | | | | | | | | | |
| 3:30 PM | | | | | | | | | | | | | |
| 3:45 PM | | | | | | | | | | | | | |
| 4:00 PM | 0 | 0 | 0 | 63 | 69 | 13 | 0 | 113 | 93 | 234 | 59 | 0 | 644 |
| 4:15 PM | 0 | 0 | 0 | 96 | 97 | 18 | 0 | 75 | 69 | 248 | 68 | 0 | 671 |
| 4:30 PM | 0 | 0 | 0 | 73 | 98 | 19 | 0 | 94 | 88 | 250 | 68 | 0 | 690 |
| 4:45 PM | 0 | 0 | 0 | 109 | 88 | 19 | 0 | 91 | 78 | 248 | 81 | 0 | 714 |
| 5:00 PM | 0 | 0 | 0 | 84 | 75 | 6 | 0 | 112 | 104 | 269 | 65 | 0 | 715 |
| 5:15 PM | 0 | 0 | 0 | 114 | 91 | 10 | 0 | 64 | 59 | 262 | 56 | 0 | 656 |
| 5:30 PM | 0 | 0 | 0 | 87 | 101 | 6 | 0 | 67 | 44 | 200 | 61 | 0 | 566 |
| 5:45 PM | 0 | 0 | 0 | 87 | 123 | 7 | 0 | 59 | 56 | 203 | 81 | 0 | 616 |
| 6:00 PM | | | | | | | | | | | | | |
| 6:15 PM | | | | | | | | | | | | | |
| 6:30 PM | | | | | | | | | | | | | |
| 6:45 PM | | | | | | | | | | | | | |

| TOTAL | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 0 | 0 | 0 | 713 | 742 | 98 | 0 | 675 | 591 | 1914 | 539 | 0 | 5272 |
| Approach % | #### | #### | #### | 45.91 | 47.78 | 6.31 | 0.00 | 53.32 | 46.68 | 78.03 | 21.97 | 0.00 | |
| App/Depart | 0 | / | 0 | 1553 | / | 3247 | 1266 | / | 1388 | 2453 | / | 637 | |

PM Peak Hr Begins at: 415 PM

| PEAK | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 0 | 0 | 0 | 362 | 358 | 62 | 0 | 372 | 339 | 1015 | 282 | 0 | 2790 |
| Approach % | #### | #### | #### | 46.29 | 45.78 | 7.93 | 0.00 | 52.32 | 47.68 | 78.26 | 21.74 | 0.00 | |
| PEAK HR. FACTOR: | | 0.000 | | | 0.905 | | | 0.823 | | | 0.971 | | 0.976 |

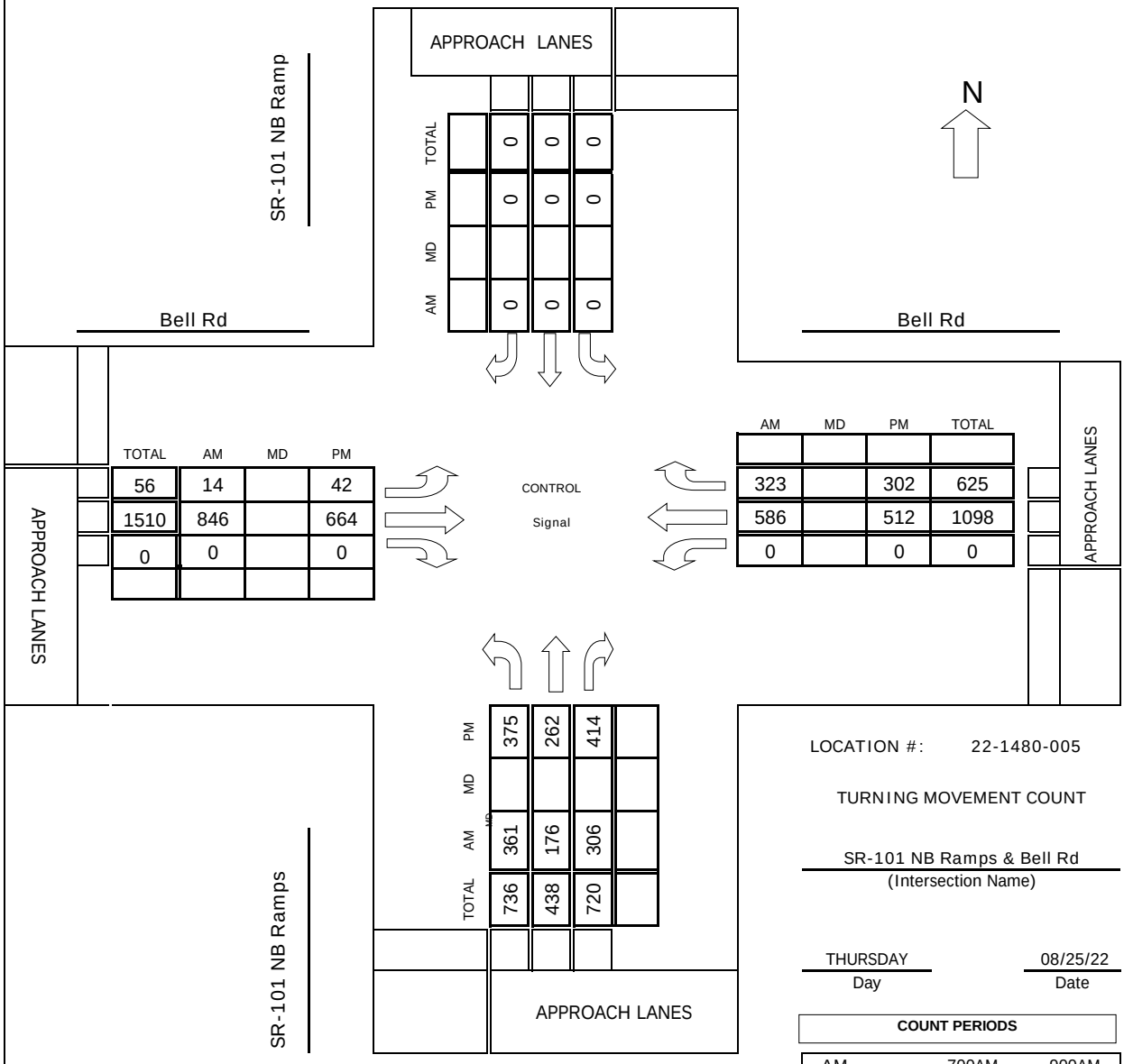
| | |
|---|---|
| CONTROL: | Signal |
| COMMENT 1: | 0 |
| GPS: | 33.646533, -111.893754 |

**Intersection Turning Movement**
**Prepared by:**

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 22-1480-005

*TMC SUMMARY OF SR-101 NB Ramps & Bell Rd*




LOCATION #: 22-1480-005

TURNING MOVEMENT COUNT

SR-101 NB Ramps & Bell Rd
(Intersection Name)

THURSDAY
Day

08/25/22
Date

**COUNT PERIODS**

| | | | |
|---|---|---|---|
| AM | 700AM | - | 900AM |
| NOON | | - | |
| PM | 400PM | - | 600PM |

AM PEAK HOUR 730 AM

NOON PEAK HOUR

PM PEAK HOUR 500 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracity traffic grou

| | | | | | | |
|---|---|---|---|---|---|---|
| N-S STREET: | SR-101 NB Ramps | DATE: | 08/25/22 | LOCATION: | Scottsdale |
| E-W STREET: | Bell Rd | DAY: | THURSDAY | PROJECT# | 22-1480-005 |

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| LANES: | 1.5 | 1 | 1.5 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 4 | 1 | |
| 6:00 AM | | | | | | | | | | | | | |
| 6:15 AM | | | | | | | | | | | | | |
| 6:30 AM | | | | | | | | | | | | | |
| 6:45 AM | | | | | | | | | | | | | |
| 7:00 AM | 53 | 20 | 28 | 0 | 0 | 0 | 2 | 120 | 0 | 0 | 95 | 53 | 371 |
| 7:15 AM | 66 | 38 | 44 | 0 | 0 | 0 | 8 | 170 | 0 | 0 | 106 | 56 | 488 |
| 7:30 AM | 101 | 54 | 69 | 0 | 0 | 0 | 3 | 193 | 0 | 0 | 165 | 76 | 661 |
| 7:45 AM | 113 | 59 | 60 | 0 | 0 | 0 | 2 | 234 | 0 | 0 | 122 | 83 | 673 |
| 8:00 AM | 90 | 39 | 90 | 0 | 0 | 0 | 6 | 220 | 0 | 0 | 166 | 90 | 701 |
| 8:15 AM | 57 | 24 | 87 | 0 | 0 | 0 | 3 | 199 | 0 | 0 | 133 | 74 | 577 |
| 8:30 AM | 83 | 30 | 47 | 0 | 0 | 0 | 6 | 87 | 0 | 0 | 110 | 72 | 435 |
| 8:45 AM | 73 | 34 | 46 | 0 | 0 | 0 | 8 | 144 | 0 | 0 | 80 | 56 | 441 |
| 9:00 AM | | | | | | | | | | | | | |
| 9:15 AM | | | | | | | | | | | | | |
| 9:30 AM | | | | | | | | | | | | | |
| 9:45 AM | | | | | | | | | | | | | |
| 10:00 AM | | | | | | | | | | | | | |
| 10:15 AM | | | | | | | | | | | | | |
| 10:30 AM | | | | | | | | | | | | | |
| 10:45 AM | | | | | | | | | | | | | |
| 11:00 AM | | | | | | | | | | | | | |
| 11:15 AM | | | | | | | | | | | | | |
| 11:30 AM | | | | | | | | | | | | | |
| 11:45 AM | | | | | | | | | | | | | |

| TOTAL | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 636 | 298 | 471 | 0 | 0 | 0 | 38 | 1367 | 0 | 0 | 977 | 560 | 4347 |
| Approach % | 45.27 | 21.21 | 33.52 | #### | #### | #### | 2.70 | 97.30 | 0.00 | 0.00 | 63.57 | 36.43 | |
| App/Depart | 1405 | / | 896 | 0 | / | 0 | 1405 | / | 1838 | 1537 | / | 1613 | |

AM Peak Hr Begins at: 730 AM

| PEAK | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 361 | 176 | 306 | 0 | 0 | 0 | 14 | 846 | 0 | 0 | 586 | 323 | 2612 |
| Approach % | 42.82 | 20.88 | 36.30 | #### | #### | #### | 1.63 | 98.37 | 0.00 | 0.00 | 64.47 | 35.53 | |
| PEAK HR. FACTOR: | | 0.908 | | | 0.000 | | | 0.911 | | | 0.888 | | 0.932 |

| | |
|---|---|
| CONTROL: | Signal |
| COMMENT 1: | |
| GPS: | 33.640067, -111.889703 |

# Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracity traffic grou

| | | | | | | |
|---|---|---|---|---|---|---|
| N-S STREET: | SR-101 NB Ramps 0 | DATE: | 08/25/22 | LOCATION: | Scottsdale |
| E-W STREET: | Bell Rd | DAY: | THURSDAY | PROJECT# | 22-1480-005 |

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| LANES: | 1.5 | 1 | 1.5 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 4 | 1 | |
| 1:00 PM | | | | | | | | | | | | | |
| 1:15 PM | | | | | | | | | | | | | |
| 1:30 PM | | | | | | | | | | | | | |
| 1:45 PM | | | | | | | | | | | | | |
| 2:00 PM | | | | | | | | | | | | | |
| 2:15 PM | | | | | | | | | | | | | |
| 2:30 PM | | | | | | | | | | | | | |
| 2:45 PM | | | | | | | | | | | | | |
| 3:00 PM | | | | | | | | | | | | | |
| 3:15 PM | | | | | | | | | | | | | |
| 3:30 PM | | | | | | | | | | | | | |
| 3:45 PM | | | | | | | | | | | | | |
| 4:00 PM | 100 | 82 | 88 | 0 | 0 | 0 | 17 | 116 | 0 | 0 | 122 | 97 | 622 |
| 4:15 PM | 75 | 56 | 74 | 0 | 0 | 0 | 9 | 175 | 0 | 0 | 123 | 80 | 592 |
| 4:30 PM | 97 | 67 | 87 | 0 | 0 | 0 | 17 | 147 | 0 | 0 | 115 | 71 | 601 |
| 4:45 PM | 97 | 66 | 100 | 0 | 0 | 0 | 12 | 157 | 0 | 0 | 130 | 65 | 627 |
| 5:00 PM | 129 | 74 | 81 | 0 | 0 | 0 | 18 | 146 | 0 | 0 | 154 | 107 | 709 |
| 5:15 PM | 98 | 84 | 79 | 0 | 0 | 0 | 5 | 154 | 0 | 0 | 105 | 73 | 598 |
| 5:30 PM | 72 | 58 | 110 | 0 | 0 | 0 | 11 | 157 | 0 | 0 | 117 | 76 | 601 |
| 5:45 PM | 76 | 46 | 144 | 0 | 0 | 0 | 8 | 207 | 0 | 0 | 136 | 46 | 663 |
| 6:00 PM | | | | | | | | | | | | | |
| 6:15 PM | | | | | | | | | | | | | |
| 6:30 PM | | | | | | | | | | | | | |
| 6:45 PM | | | | | | | | | | | | | |

| TOTAL | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 744 | 533 | 763 | 0 | 0 | 0 | 97 | 1259 | 0 | 0 | 1002 | 615 | 5013 |
| Approach % | 36.47 | 26.13 | 37.40 | #### | #### | #### | 7.15 | 92.85 | 0.00 | 0.00 | 61.97 | 38.03 | |
| App/Depart | 2040 | / | 1245 | 0 | / | 0 | 1356 | / | 2022 | 1617 | / | 1746 | |

PM Peak Hr Begins at: 500 PM

| PEAK | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 375 | 262 | 414 | 0 | 0 | 0 | 42 | 664 | 0 | 0 | 512 | 302 | 2571 |
| Approach % | 35.68 | 24.93 | 39.39 | #### | #### | #### | 5.95 | 94.05 | 0.00 | 0.00 | 62.90 | 37.10 | |
| PEAK HR. FACTOR: | 0.925 | | | 0.000 | | | 0.821 | | | 0.780 | | | 0.907 |

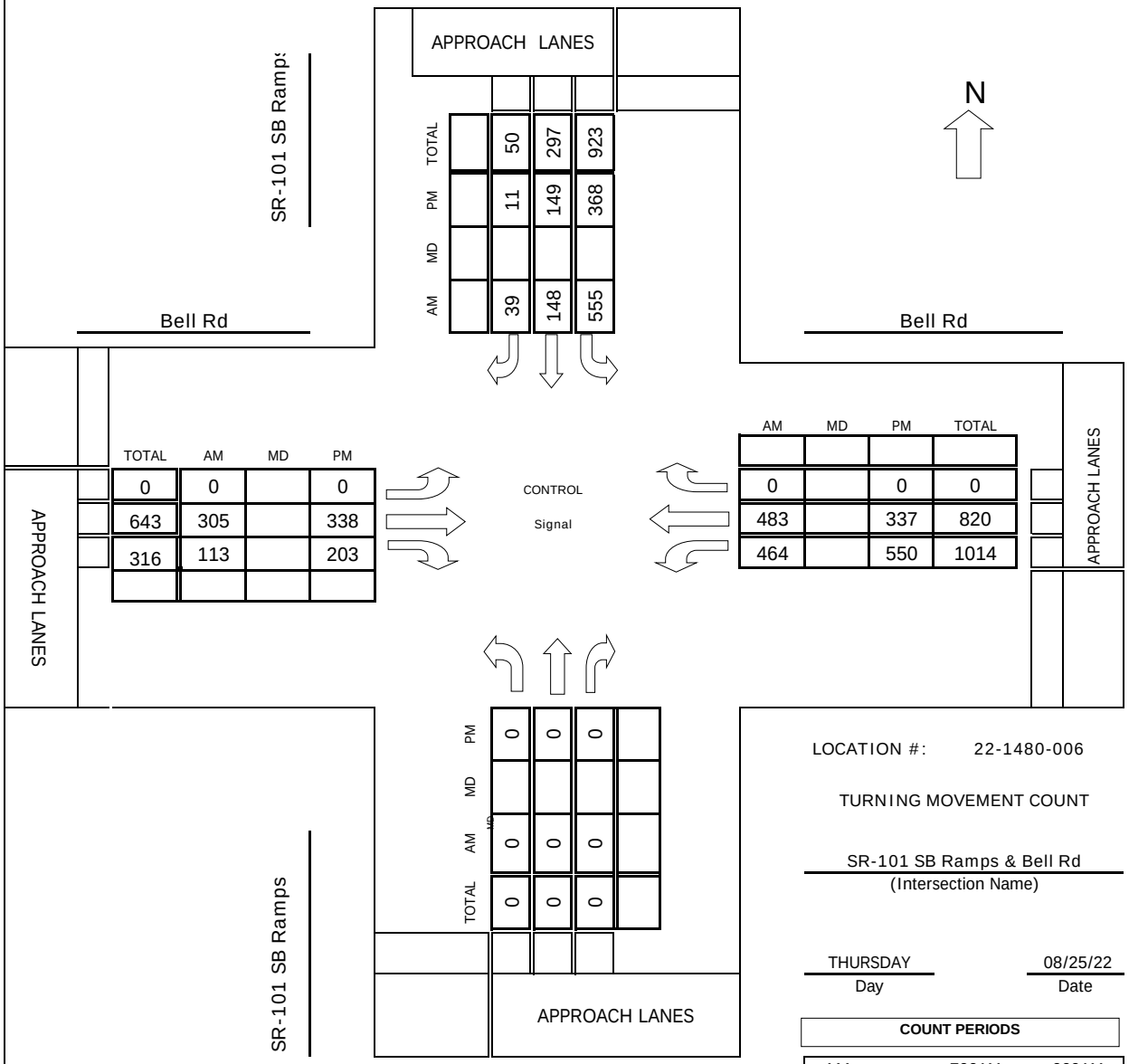
| | |
|---|---|
| CONTROL: | Signal |
| COMMENT 1: | 0 |
| GPS: | 33.640067, -111.889703 |

**Intersection Turning Movement**
**Prepared by:**

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 22-1480-006

*TMC SUMMARY OF SR-101 SB Ramps & Bell Rd*




LOCATION #: 22-1480-006

TURNING MOVEMENT COUNT

SR-101 SB Ramps & Bell Rd
(Intersection Name)

THURSDAY
Day

08/25/22
Date

**COUNT PERIODS**

| | | | |
|---|---|---|---|
| AM | 700AM | - | 900AM |
| NOON | | - | |
| PM | 400PM | - | 600PM |

AM PEAK HOUR 730 AM

NOON PEAK HOUR

PM PEAK HOUR 500 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracity traffic grou

| | | | | | | |
|---|---|---|---|---|---|---|
| N-S STREET: | SR-101 SB Ramps | DATE: | 08/25/22 | LOCATION: | Scottsdale |
| E-W STREET: | Bell Rd | DAY: | THURSDAY | PROJECT# | 22-1480-006 |

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| LANES: | 0 | 0 | 0 | 1.5 | 1 | 1.5 | 0 | 3 | 1 | 2 | 2 | 0 | |
| 6:00 AM | | | | | | | | | | | | | |
| 6:15 AM | | | | | | | | | | | | | |
| 6:30 AM | | | | | | | | | | | | | |
| 6:45 AM | | | | | | | | | | | | | |
| 7:00 AM | 0 | 0 | 0 | 96 | 27 | 6 | 0 | 26 | 14 | 84 | 64 | 0 | 317 |
| 7:15 AM | 0 | 0 | 0 | 133 | 25 | 11 | 0 | 45 | 30 | 88 | 84 | 0 | 416 |
| 7:30 AM | 0 | 0 | 0 | 133 | 18 | 11 | 0 | 63 | 25 | 143 | 123 | 0 | 516 |
| 7:45 AM | 0 | 0 | 0 | 134 | 30 | 10 | 0 | 102 | 25 | 113 | 122 | 0 | 536 |
| 8:00 AM | 0 | 0 | 0 | 143 | 36 | 8 | 0 | 83 | 27 | 127 | 129 | 0 | 553 |
| 8:15 AM | 0 | 0 | 0 | 145 | 64 | 10 | 0 | 57 | 36 | 81 | 109 | 0 | 502 |
| 8:30 AM | 0 | 0 | 0 | 50 | 89 | 7 | 0 | 43 | 34 | 86 | 107 | 0 | 416 |
| 8:45 AM | 0 | 0 | 0 | 92 | 52 | 17 | 0 | 60 | 31 | 61 | 92 | 0 | 405 |
| 9:00 AM | | | | | | | | | | | | | |
| 9:15 AM | | | | | | | | | | | | | |
| 9:30 AM | | | | | | | | | | | | | |
| 9:45 AM | | | | | | | | | | | | | |
| 10:00 AM | | | | | | | | | | | | | |
| 10:15 AM | | | | | | | | | | | | | |
| 10:30 AM | | | | | | | | | | | | | |
| 10:45 AM | | | | | | | | | | | | | |
| 11:00 AM | | | | | | | | | | | | | |
| 11:15 AM | | | | | | | | | | | | | |
| 11:30 AM | | | | | | | | | | | | | |
| 11:45 AM | | | | | | | | | | | | | |

| TOTAL | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 0 | 0 | 0 | 926 | 341 | 80 | 0 | 479 | 222 | 783 | 830 | 0 | 3661 |
| Approach % | #### | #### | #### | 68.75 | 25.32 | 5.94 | 0.00 | 68.33 | 31.67 | 48.54 | 51.46 | 0.00 | |
| App/Depart | 0 | / | 0 | 1347 | / | 1346 | 701 | / | 1405 | 1613 | / | 910 | |

AM Peak Hr Begins at: 730 AM

| PEAK | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 0 | 0 | 0 | 555 | 148 | 39 | 0 | 305 | 113 | 464 | 483 | 0 | 2107 |
| Approach % | #### | #### | #### | 74.80 | 19.95 | 5.26 | 0.00 | 72.97 | 27.03 | 49.00 | 51.00 | 0.00 | |

| PEAK HR. FACTOR: | 0.000 | 0.847 | 0.823 | 0.890 | 0.953 |
|---|---|---|---|---|---|

| | |
|---|---|
| CONTROL: | Signal |
| COMMENT 1: | |
| GPS: | 33.640087, -111.891079 |

# Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracity traffic grou

| | | | | | | |
|---|---|---|---|---|---|---|
| N-S STREET: | SR-101 SB Ramps 0 | DATE: | 08/25/22 | LOCATION: | Scottsdale |
| E-W STREET: | Bell Rd | DAY: | THURSDAY | PROJECT# | 22-1480-006 |

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| LANES: | 0 | 0 | 0 | 1.5 | 1 | 1.5 | 0 | 3 | 1 | 2 | 2 | 0 | |
| 1:00 PM | | | | | | | | | | | | | |
| 1:15 PM | | | | | | | | | | | | | |
| 1:30 PM | | | | | | | | | | | | | |
| 1:45 PM | | | | | | | | | | | | | |
| 2:00 PM | | | | | | | | | | | | | |
| 2:15 PM | | | | | | | | | | | | | |
| 2:30 PM | | | | | | | | | | | | | |
| 2:45 PM | | | | | | | | | | | | | |
| 3:00 PM | | | | | | | | | | | | | |
| 3:15 PM | | | | | | | | | | | | | |
| 3:30 PM | | | | | | | | | | | | | |
| 3:45 PM | | | | | | | | | | | | | |
| 4:00 PM | 0 | 0 | 0 | 67 | 51 | 5 | 0 | 66 | 32 | 139 | 83 | 0 | 443 |
| 4:15 PM | 0 | 0 | 0 | 111 | 29 | 6 | 0 | 73 | 26 | 119 | 79 | 0 | 443 |
| 4:30 PM | 0 | 0 | 0 | 98 | 35 | 5 | 0 | 66 | 41 | 134 | 78 | 0 | 457 |
| 4:45 PM | 0 | 0 | 0 | 84 | 31 | 6 | 0 | 85 | 42 | 116 | 111 | 0 | 475 |
| 5:00 PM | 0 | 0 | 0 | 71 | 43 | 7 | 0 | 93 | 49 | 166 | 117 | 0 | 546 |
| 5:15 PM | 0 | 0 | 0 | 77 | 36 | 1 | 0 | 82 | 45 | 136 | 67 | 0 | 444 |
| 5:30 PM | 0 | 0 | 0 | 93 | 34 | 2 | 0 | 75 | 55 | 113 | 76 | 0 | 448 |
| 5:45 PM | 0 | 0 | 0 | 127 | 36 | 1 | 0 | 88 | 54 | 135 | 77 | 0 | 518 |
| 6:00 PM | | | | | | | | | | | | | |
| 6:15 PM | | | | | | | | | | | | | |
| 6:30 PM | | | | | | | | | | | | | |
| 6:45 PM | | | | | | | | | | | | | |

| TOTAL | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 0 | 0 | 0 | 728 | 295 | 33 | 0 | 628 | 344 | 1058 | 688 | 0 | 3774 |
| Approach % | #### | #### | #### | 68.94 | 27.94 | 3.13 | 0.00 | 64.61 | 35.39 | 60.60 | 39.40 | 0.00 | |
| App/Depart | 0 | / | 0 | 1056 | / | 1697 | 972 | / | 1356 | 1746 | / | 721 | |

PM Peak Hr Begins at: 500 PM

| PEAK | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 0 | 0 | 0 | 368 | 149 | 11 | 0 | 338 | 203 | 550 | 337 | 0 | 1956 |
| Approach % | #### | #### | #### | 69.70 | 28.22 | 2.08 | 0.00 | 62.48 | 37.52 | 62.01 | 37.99 | 0.00 | |
| PEAK HR. FACTOR: | | 0.000 | | | 0.805 | | | 0.952 | | | 0.784 | | 0.896 |

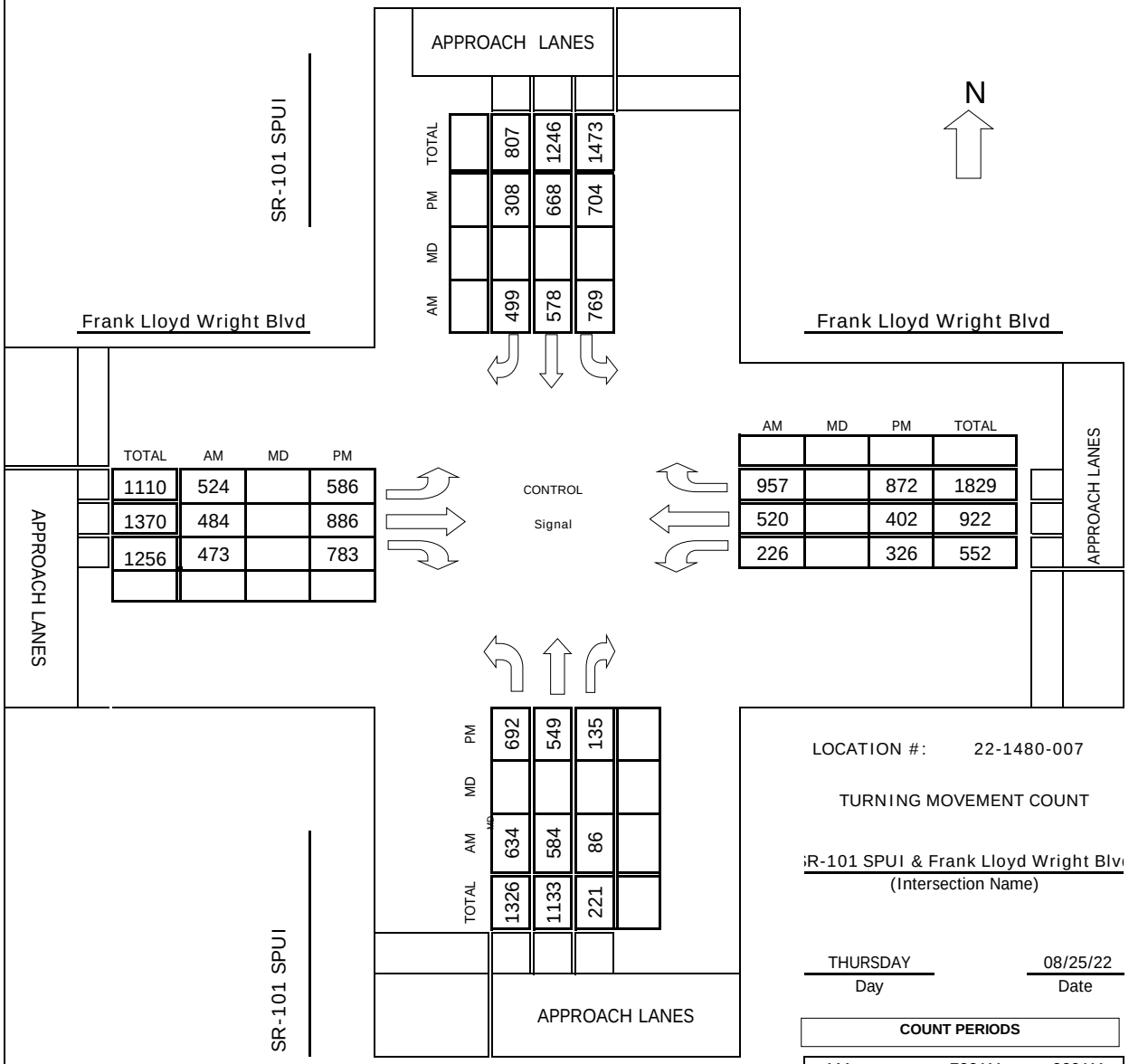
| | |
|---|---|
| CONTROL: | Signal |
| COMMENT 1: | 0 |
| GPS: | 33.640087, -111.891079 |

**Intersection Turning Movement**
**Prepared by:**

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 22-1480-007

*TMC SUMMARY OF SR-101 SPUI & Frank Lloyd Wright Blvd*




LOCATION #: 22-1480-007

TURNING MOVEMENT COUNT

SR-101 SPUI & Frank Lloyd Wright Blvd
(Intersection Name)

THURSDAY — Day
08/25/22 — Date

**COUNT PERIODS**

| | | | |
|---|---|---|---|
| AM | 700AM | - | 900AM |
| NOON | | - | |
| PM | 400PM | - | 600PM |

AM PEAK HOUR 730 AM

NOON PEAK HOUR

PM PEAK HOUR 445 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracity traffic grou

| | | | | | | |
|---|---|---|---|---|---|---|
| N-S STREET: | SR-101 SPUI | DATE: | 08/25/22 | LOCATION: | Scottsdale |
| E-W STREET: | Frank Lloyd Wright Blvd | DAY: | THURSDAY | PROJECT# | 22-1480-007 |

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| LANES: | 2 | 2.5 | 0.5 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 2 | |
| 6:00 AM | | | | | | | | | | | | | |
| 6:15 AM | | | | | | | | | | | | | |
| 6:30 AM | | | | | | | | | | | | | |
| 6:45 AM | | | | | | | | | | | | | |
| 7:00 AM | 166 | 110 | 16 | 155 | 98 | 103 | 90 | 85 | 85 | 43 | 65 | 157 | 1173 |
| 7:15 AM | 134 | 117 | 19 | 205 | 125 | 83 | 127 | 60 | 105 | 50 | 149 | 207 | 1381 |
| 7:30 AM | 167 | 154 | 28 | 175 | 142 | 94 | 133 | 111 | 138 | 58 | 118 | 285 | 1603 |
| 7:45 AM | 154 | 122 | 17 | 199 | 155 | 116 | 160 | 101 | 125 | 60 | 190 | 273 | 1672 |
| 8:00 AM | 166 | 165 | 18 | 175 | 137 | 145 | 141 | 136 | 100 | 58 | 92 | 223 | 1556 |
| 8:15 AM | 147 | 143 | 23 | 220 | 144 | 144 | 90 | 136 | 110 | 50 | 120 | 176 | 1503 |
| 8:30 AM | 212 | 116 | 23 | 200 | 154 | 170 | 92 | 141 | 113 | 54 | 105 | 204 | 1584 |
| 8:45 AM | 166 | 97 | 33 | 230 | 96 | 137 | 130 | 121 | 140 | 52 | 158 | 187 | 1547 |
| 9:00 AM | | | | | | | | | | | | | |
| 9:15 AM | | | | | | | | | | | | | |
| 9:30 AM | | | | | | | | | | | | | |
| 9:45 AM | | | | | | | | | | | | | |
| 10:00 AM | | | | | | | | | | | | | |
| 10:15 AM | | | | | | | | | | | | | |
| 10:30 AM | | | | | | | | | | | | | |
| 10:45 AM | | | | | | | | | | | | | |
| 11:00 AM | | | | | | | | | | | | | |
| 11:15 AM | | | | | | | | | | | | | |
| 11:30 AM | | | | | | | | | | | | | |
| 11:45 AM | | | | | | | | | | | | | |

| TOTAL | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 1312 | 1024 | 177 | 1559 | 1051 | 992 | 963 | 891 | 916 | 425 | 997 | 1712 | 12019 |
| Approach % | 52.21 | 40.75 | 7.04 | 43.28 | 29.18 | 27.54 | 34.77 | 32.17 | 33.07 | 13.56 | 31.81 | 54.63 | |
| App/Depart | 2513 | / | 3699 | 3602 | / | 2392 | 2770 | / | 2627 | 3134 | / | 3301 | |

AM Peak Hr Begins at: 730 AM

| PEAK | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 634 | 584 | 86 | 769 | 578 | 499 | 524 | 484 | 473 | 226 | 520 | 957 | 6334 |
| Approach % | 48.62 | 44.79 | 6.60 | 41.66 | 31.31 | 27.03 | 35.38 | 32.68 | 31.94 | 13.27 | 30.53 | 56.19 | |
| PEAK HR. FACTOR: | | 0.934 | | | 0.908 | | | 0.959 | | | 0.814 | | 0.947 |

| | |
|---|---|
| CONTROL: | Signal |
| COMMENT 1: | |
| GPS: | 33.629713, -111.890437 |

# Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracity traffic grou

| | | | | | | |
|---|---|---|---|---|---|---|
| N-S STREET: | SR-101 SPUI 0 | DATE: | 08/25/22 | LOCATION: | Scottsdale |
| E-W STREET: | Frank Lloyd Wright Blvd | DAY: | THURSDAY | PROJECT# | 22-1480-007 |

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| LANES: | 2 | 2.5 | 0.5 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 2 | |
| 1:00 PM | | | | | | | | | | | | | |
| 1:15 PM | | | | | | | | | | | | | |
| 1:30 PM | | | | | | | | | | | | | |
| 1:45 PM | | | | | | | | | | | | | |
| 2:00 PM | | | | | | | | | | | | | |
| 2:15 PM | | | | | | | | | | | | | |
| 2:30 PM | | | | | | | | | | | | | |
| 2:45 PM | | | | | | | | | | | | | |
| 3:00 PM | | | | | | | | | | | | | |
| 3:15 PM | | | | | | | | | | | | | |
| 3:30 PM | | | | | | | | | | | | | |
| 3:45 PM | | | | | | | | | | | | | |
| 4:00 PM | 127 | 113 | 25 | 144 | 180 | 103 | 149 | 227 | 191 | 68 | 118 | 197 | 1642 |
| 4:15 PM | 137 | 135 | 27 | 162 | 143 | 85 | 132 | 215 | 197 | 77 | 85 | 192 | 1587 |
| 4:30 PM | 128 | 136 | 29 | 165 | 146 | 86 | 150 | 216 | 180 | 65 | 151 | 168 | 1620 |
| 4:45 PM | 189 | 130 | 32 | 180 | 154 | 81 | 123 | 230 | 167 | 81 | 104 | 192 | 1663 |
| 5:00 PM | 161 | 108 | 25 | 179 | 177 | 79 | 161 | 176 | 245 | 70 | 115 | 196 | 1692 |
| 5:15 PM | 181 | 142 | 44 | 180 | 202 | 82 | 145 | 254 | 186 | 96 | 76 | 217 | 1805 |
| 5:30 PM | 161 | 169 | 34 | 165 | 135 | 66 | 157 | 226 | 185 | 79 | 107 | 267 | 1751 |
| 5:45 PM | 160 | 186 | 48 | 155 | 145 | 75 | 143 | 179 | 156 | 67 | 83 | 170 | 1567 |
| 6:00 PM | | | | | | | | | | | | | |
| 6:15 PM | | | | | | | | | | | | | |
| 6:30 PM | | | | | | | | | | | | | |
| 6:45 PM | | | | | | | | | | | | | |

| TOTAL | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 1244 | 1119 | 264 | 1330 | 1282 | 657 | 1160 | 1723 | 1507 | 603 | 839 | 1599 | 13327 |
| Approach % | 47.35 | 42.60 | 10.05 | 40.69 | 39.22 | 20.10 | 26.42 | 39.25 | 34.33 | 19.83 | 27.59 | 52.58 | |
| App/Depart | 2627 | / | 3878 | 3269 | / | 3392 | 4390 | / | 3317 | 3041 | / | 2740 | |

PM Peak Hr Begins at: 445 PM

| PEAK | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 692 | 549 | 135 | 704 | 668 | 308 | 586 | 886 | 783 | 326 | 402 | 872 | 6911 |
| Approach % | 50.29 | 39.90 | 9.81 | 41.90 | 39.76 | 18.33 | 25.99 | 39.29 | 34.72 | 20.38 | 25.13 | 54.50 | |
| PEAK HR. FACTOR: | | 0.937 | | | 0.905 | | | 0.964 | | | 0.883 | | 0.957 |

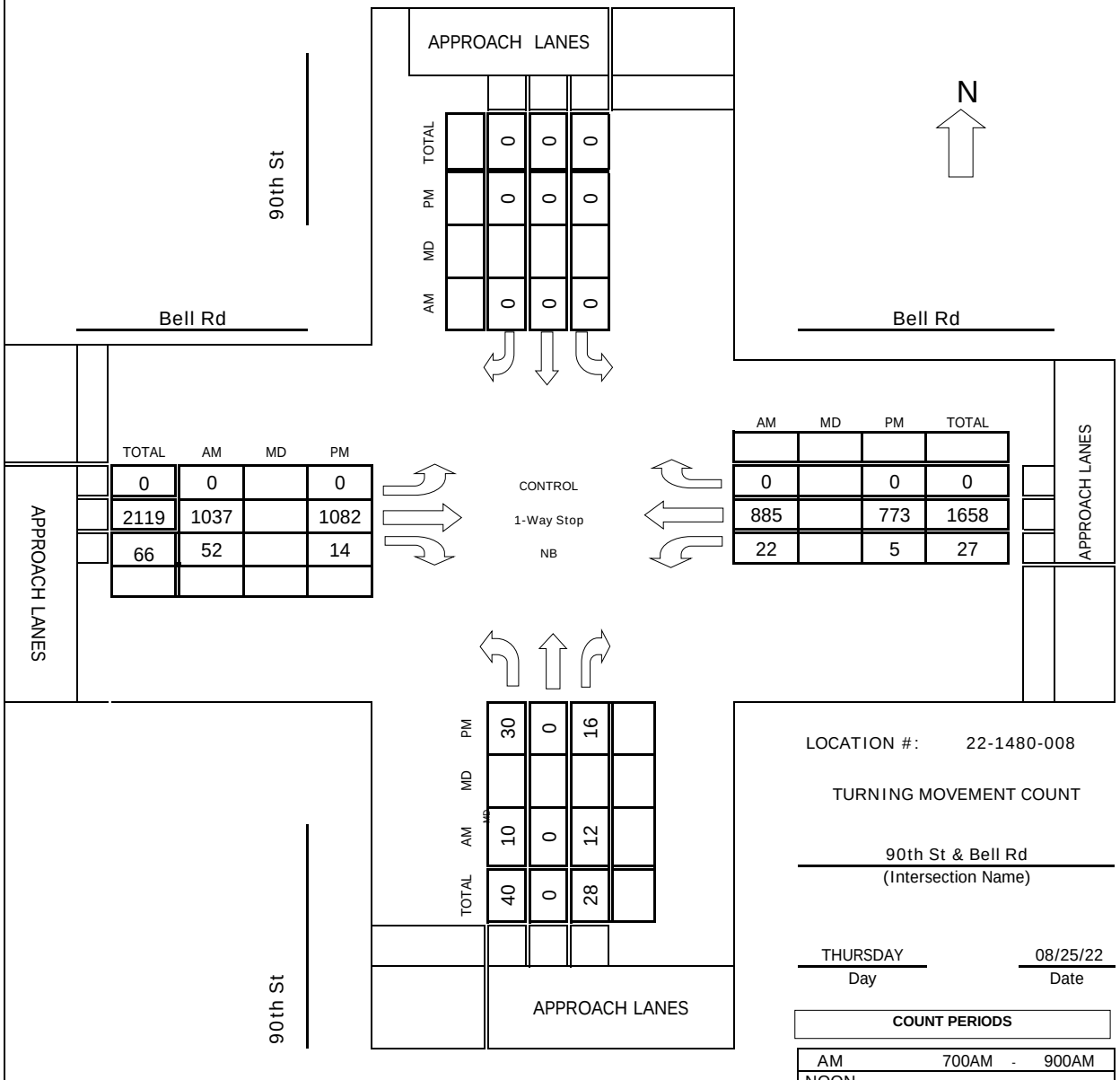
| | |
|---|---|
| CONTROL: | Signal |
| COMMENT 1: | 0 |
| GPS: | 33.629713, -111.890437 |

**Intersection Turning Movement**
**Prepared by:**

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 22-1480-008

*TMC SUMMARY OF 90th St & Bell Rd*




LOCATION #: 22-1480-008

TURNING MOVEMENT COUNT

90th St & Bell Rd
(Intersection Name)

THURSDAY
Day

08/25/22
Date

**COUNT PERIODS**

| | | | |
|---|---|---|---|
| AM | 700AM | - | 900AM |
| NOON | | - | |
| PM | 400PM | - | 600PM |

AM PEAK HOUR 730 AM

NOON PEAK HOUR

PM PEAK HOUR 500 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracity traffic grou

| | | | | | | |
|---|---|---|---|---|---|---|
| N-S STREET: | 90th St | DATE: | 08/25/22 | LOCATION: | Scottsdale |
| E-W STREET: | Bell Rd | DAY: | THURSDAY | PROJECT# | 22-1480-008 |

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| LANES: | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 2 | 0 | |
| 6:00 AM | | | | | | | | | | | | | |
| 6:15 AM | | | | | | | | | | | | | |
| 6:30 AM | | | | | | | | | | | | | |
| 6:45 AM | | | | | | | | | | | | | |
| 7:00 AM | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 118 | 12 | 6 | 147 | 0 | 288 |
| 7:15 AM | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 195 | 14 | 2 | 175 | 0 | 392 |
| 7:30 AM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 252 | 16 | 4 | 231 | 0 | 504 |
| 7:45 AM | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 279 | 14 | 7 | 204 | 0 | 511 |
| 8:00 AM | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 295 | 10 | 4 | 270 | 0 | 586 |
| 8:15 AM | 4 | 0 | 3 | 0 | 0 | 0 | 0 | 211 | 12 | 7 | 180 | 0 | 417 |
| 8:30 AM | 6 | 0 | 2 | 0 | 0 | 0 | 0 | 133 | 11 | 7 | 163 | 0 | 322 |
| 8:45 AM | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 180 | 21 | 7 | 127 | 0 | 342 |
| 9:00 AM | | | | | | | | | | | | | |
| 9:15 AM | | | | | | | | | | | | | |
| 9:30 AM | | | | | | | | | | | | | |
| 9:45 AM | | | | | | | | | | | | | |
| 10:00 AM | | | | | | | | | | | | | |
| 10:15 AM | | | | | | | | | | | | | |
| 10:30 AM | | | | | | | | | | | | | |
| 10:45 AM | | | | | | | | | | | | | |
| 11:00 AM | | | | | | | | | | | | | |
| 11:15 AM | | | | | | | | | | | | | |
| 11:30 AM | | | | | | | | | | | | | |
| 11:45 AM | | | | | | | | | | | | | |

| TOTAL | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 27 | 0 | 21 | 0 | 0 | 0 | 0 | 1663 | 110 | 44 | 1497 | 0 | 3362 |
| Approach % | 56.25 | 0.00 | 43.75 | #### | #### | #### | 0.00 | 93.80 | 6.20 | 2.86 | 97.14 | 0.00 | |
| App/Depart | 48 | / | 0 | 0 | / | 154 | 1773 | / | 1684 | 1541 | / | 1524 | |

AM Peak Hr Begins at: 730 AM

| PEAK | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 10 | 0 | 12 | 0 | 0 | 0 | 0 | 1037 | 52 | 22 | 885 | 0 | 2018 |
| Approach % | 45.45 | 0.00 | 54.55 | #### | #### | #### | 0.00 | 95.22 | 4.78 | 2.43 | 97.57 | 0.00 | |

| PEAK HR. FACTOR: | 0.786 | 0.000 | 0.893 | 0.828 | 0.861 |
|---|---|---|---|---|---|

CONTROL: 1-Way Stop (NB)
COMMENT 1:
GPS: 33.640099, -111.887138

# Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracity traffic grou

| | | | | | | |
|---|---|---|---|---|---|---|
| N-S STREET: | 90th St | | DATE: | 08/25/22 | LOCATION: | Scottsdale |
| | 0 | | | | | |
| E-W STREET: | Bell Rd | | DAY: | THURSDAY | PROJECT# | 22-1480-008 |

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| LANES: | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 2 | 0 | |
| 1:00 PM | | | | | | | | | | | | | |
| 1:15 PM | | | | | | | | | | | | | |
| 1:30 PM | | | | | | | | | | | | | |
| 1:45 PM | | | | | | | | | | | | | |
| 2:00 PM | | | | | | | | | | | | | |
| 2:15 PM | | | | | | | | | | | | | |
| 2:30 PM | | | | | | | | | | | | | |
| 2:45 PM | | | | | | | | | | | | | |
| 3:00 PM | | | | | | | | | | | | | |
| 3:15 PM | | | | | | | | | | | | | |
| 3:30 PM | | | | | | | | | | | | | |
| 3:45 PM | | | | | | | | | | | | | |
| 4:00 PM | 14 | 0 | 4 | 0 | 0 | 0 | 0 | 204 | 3 | 2 | 205 | 0 | 432 |
| 4:15 PM | 8 | 0 | 2 | 0 | 0 | 0 | 0 | 241 | 2 | 5 | 172 | 0 | 430 |
| 4:30 PM | 16 | 0 | 5 | 0 | 0 | 0 | 0 | 241 | 5 | 0 | 197 | 0 | 464 |
| 4:45 PM | 13 | 0 | 5 | 0 | 0 | 0 | 0 | 248 | 3 | 3 | 169 | 0 | 441 |
| 5:00 PM | 17 | 0 | 5 | 0 | 0 | 0 | 0 | 232 | 5 | 0 | 247 | 0 | 506 |
| 5:15 PM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 228 | 3 | 3 | 162 | 0 | 398 |
| 5:30 PM | 5 | 0 | 6 | 0 | 0 | 0 | 0 | 287 | 3 | 1 | 182 | 0 | 484 |
| 5:45 PM | 7 | 0 | 4 | 0 | 0 | 0 | 0 | 335 | 3 | 1 | 182 | 0 | 532 |
| 6:00 PM | | | | | | | | | | | | | |
| 6:15 PM | | | | | | | | | | | | | |
| 6:30 PM | | | | | | | | | | | | | |
| 6:45 PM | | | | | | | | | | | | | |

| TOTAL | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 81 | 0 | 32 | 0 | 0 | 0 | 0 | 2016 | 27 | 15 | 1516 | 0 | 3687 |
| Approach % | 71.68 | 0.00 | 28.32 | #### | #### | #### | 0.00 | 98.68 | 1.32 | 0.98 | 99.02 | 0.00 | |
| App/Depart | 113 | / | 0 | 0 | / | 42 | 2043 | / | 2048 | 1531 | / | 1597 | |

PM Peak Hr Begins at: 500 PM

| PEAK | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 30 | 0 | 16 | 0 | 0 | 0 | 0 | 1082 | 14 | 5 | 773 | 0 | 1920 |
| Approach % | 65.22 | 0.00 | 34.78 | #### | #### | #### | 0.00 | 98.72 | 1.28 | 0.64 | 99.36 | 0.00 | |

| PEAK HR. FACTOR: | 0.523 | 0.000 | 0.811 | 0.787 | 0.902 |
|---|---|---|---|---|---|

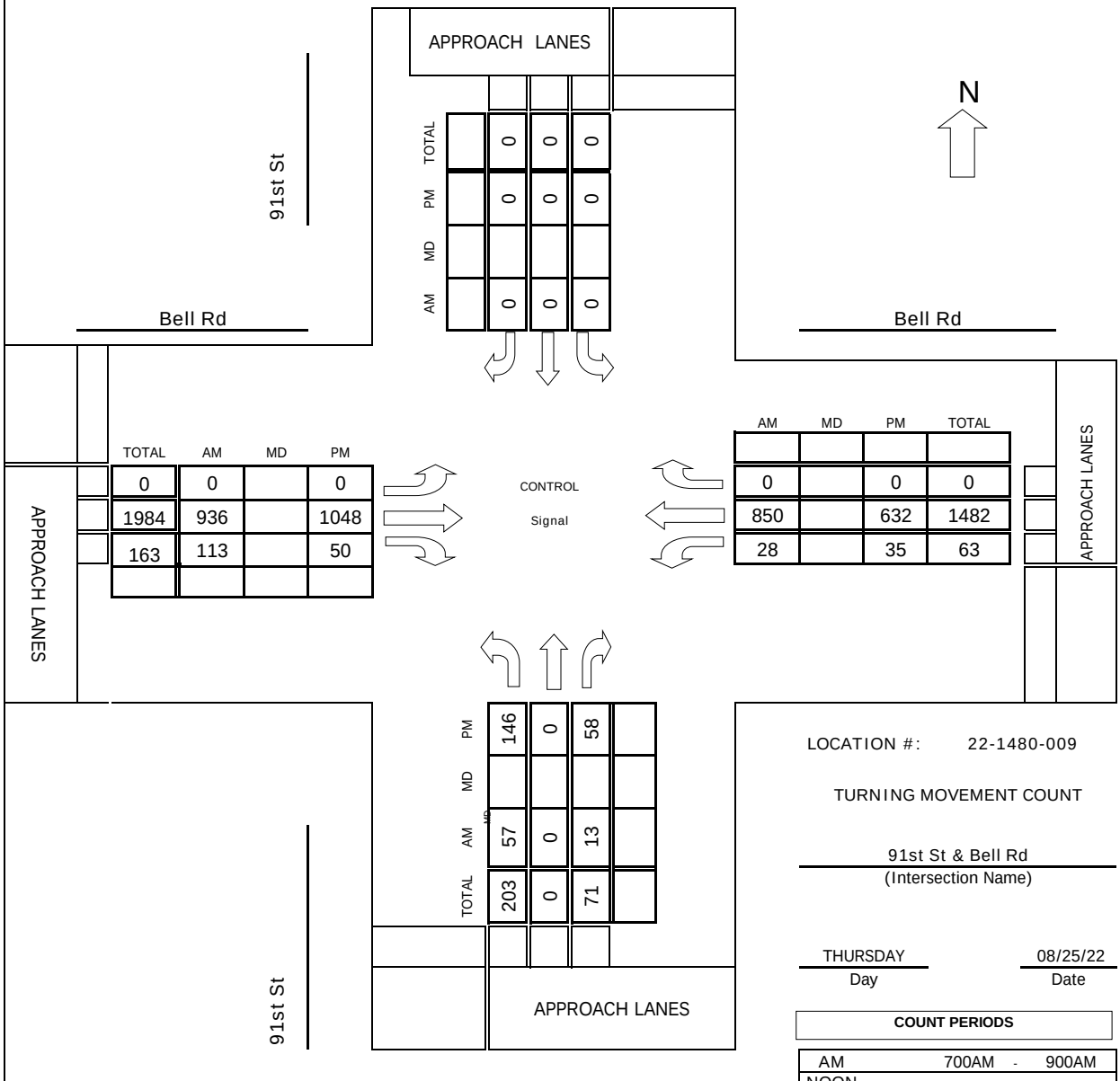
| | |
|---|---|
| CONTROL: | 1-Way Stop (NB) |
| COMMENT 1: | 0 |
| GPS: | 33.640099, -111.887138 |

**Intersection Turning Movement**
**Prepared by:**

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

Project #: 22-1480-009

*TMC SUMMARY OF 91st St & Bell Rd*




LOCATION #: 22-1480-009

TURNING MOVEMENT COUNT

91st St & Bell Rd
(Intersection Name)

THURSDAY
Day

08/25/22
Date

**COUNT PERIODS**

| | | | |
|---|---|---|---|
| AM | 700AM | - | 900AM |
| NOON | | - | |
| PM | 400PM | - | 600PM |

AM PEAK HOUR 730 AM

NOON PEAK HOUR

PM PEAK HOUR 500 PM

Intersection Turning Movement
Prepared by:

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracitytraffic grou

| | | | | | | |
|---|---|---|---|---|---|---|
| N-S STREET: | 91st St | DATE: | 08/25/22 | LOCATION: | Scottsdale |
| E-W STREET: | Bell Rd | DAY: | THURSDAY | PROJECT# | 22-1480-009 |

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| LANES: | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 2 | 0 | |
| 6:00 AM | | | | | | | | | | | | | |
| 6:15 AM | | | | | | | | | | | | | |
| 6:30 AM | | | | | | | | | | | | | |
| 6:45 AM | | | | | | | | | | | | | |
| 7:00 AM | 19 | 0 | 1 | 0 | 0 | 0 | 0 | 104 | 16 | 3 | 134 | 0 | 277 |
| 7:15 AM | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 162 | 36 | 3 | 160 | 0 | 378 |
| 7:30 AM | 14 | 0 | 4 | 0 | 0 | 0 | 0 | 221 | 31 | 9 | 221 | 0 | 500 |
| 7:45 AM | 17 | 0 | 2 | 0 | 0 | 0 | 0 | 242 | 40 | 6 | 194 | 0 | 501 |
| 8:00 AM | 23 | 0 | 4 | 0 | 0 | 0 | 0 | 277 | 24 | 7 | 251 | 0 | 586 |
| 8:15 AM | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 196 | 18 | 6 | 184 | 0 | 410 |
| 8:30 AM | 12 | 0 | 9 | 0 | 0 | 0 | 0 | 123 | 12 | 6 | 158 | 0 | 320 |
| 8:45 AM | 5 | 0 | 3 | 0 | 0 | 0 | 0 | 158 | 24 | 4 | 129 | 0 | 323 |
| 9:00 AM | | | | | | | | | | | | | |
| 9:15 AM | | | | | | | | | | | | | |
| 9:30 AM | | | | | | | | | | | | | |
| 9:45 AM | | | | | | | | | | | | | |
| 10:00 AM | | | | | | | | | | | | | |
| 10:15 AM | | | | | | | | | | | | | |
| 10:30 AM | | | | | | | | | | | | | |
| 10:45 AM | | | | | | | | | | | | | |
| 11:00 AM | | | | | | | | | | | | | |
| 11:15 AM | | | | | | | | | | | | | |
| 11:30 AM | | | | | | | | | | | | | |
| 11:45 AM | | | | | | | | | | | | | |

| TOTAL | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 110 | 0 | 26 | 0 | 0 | 0 | 0 | 1483 | 201 | 44 | 1431 | 0 | 3295 |
| Approach % | 80.88 | 0.00 | 19.12 | #### | #### | #### | 0.00 | 88.06 | 11.94 | 2.98 | 97.02 | 0.00 | |
| App/Depart | 136 | / | 0 | 0 | / | 245 | 1684 | / | 1509 | 1475 | / | 1541 | |

AM Peak Hr Begins at: 730 AM

| PEAK | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 57 | 0 | 13 | 0 | 0 | 0 | 0 | 936 | 113 | 28 | 850 | 0 | 1997 |
| Approach % | 81.43 | 0.00 | 18.57 | #### | #### | #### | 0.00 | 89.23 | 10.77 | 3.19 | 96.81 | 0.00 | |
| PEAK HR. FACTOR: | 0.648 | | | 0.000 | | | 0.871 | | | 0.851 | | | 0.852 |

| | |
|---|---|
| CONTROL: | Signal |
| COMMENT 1: | |
| GPS: | 33.640066, -111.884930 |

# Intersection Turning Movement

FIELD DATA SERVICES OF ARIZONA, INC.
520.316.6745

veracity traffic grou

| | | | | | | |
|---|---|---|---|---|---|---|
| N-S STREET: | 91st St | 0 | DATE: | 08/25/22 | LOCATION: | Scottsdale |
| E-W STREET: | Bell Rd | | DAY: | THURSDAY | PROJECT# | 22-1480-009 |

| | NORTHBOUND | | | SOUTHBOUND | | | EASTBOUND | | | WESTBOUND | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
| LANES: | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 2 | 0 | |
| 1:00 PM | | | | | | | | | | | | | |
| 1:15 PM | | | | | | | | | | | | | |
| 1:30 PM | | | | | | | | | | | | | |
| 1:45 PM | | | | | | | | | | | | | |
| 2:00 PM | | | | | | | | | | | | | |
| 2:15 PM | | | | | | | | | | | | | |
| 2:30 PM | | | | | | | | | | | | | |
| 2:45 PM | | | | | | | | | | | | | |
| 3:00 PM | | | | | | | | | | | | | |
| 3:15 PM | | | | | | | | | | | | | |
| 3:30 PM | | | | | | | | | | | | | |
| 3:45 PM | | | | | | | | | | | | | |
| 4:00 PM | 36 | 0 | 13 | 0 | 0 | 0 | 0 | 194 | 14 | 8 | 171 | 0 | 436 |
| 4:15 PM | 22 | 0 | 13 | 0 | 0 | 0 | 0 | 213 | 30 | 8 | 155 | 0 | 441 |
| 4:30 PM | 29 | 0 | 16 | 0 | 0 | 0 | 0 | 223 | 23 | 15 | 168 | 0 | 474 |
| 4:45 PM | 33 | 0 | 9 | 0 | 0 | 0 | 0 | 231 | 22 | 13 | 139 | 0 | 447 |
| 5:00 PM | 65 | 0 | 22 | 0 | 0 | 0 | 0 | 219 | 18 | 14 | 182 | 0 | 520 |
| 5:15 PM | 37 | 0 | 16 | 0 | 0 | 0 | 0 | 220 | 9 | 2 | 128 | 0 | 412 |
| 5:30 PM | 21 | 0 | 5 | 0 | 0 | 0 | 0 | 284 | 9 | 5 | 162 | 0 | 486 |
| 5:45 PM | 23 | 0 | 15 | 0 | 0 | 0 | 0 | 325 | 14 | 14 | 160 | 0 | 551 |
| 6:00 PM | | | | | | | | | | | | | |
| 6:15 PM | | | | | | | | | | | | | |
| 6:30 PM | | | | | | | | | | | | | |
| 6:45 PM | | | | | | | | | | | | | |

| TOTAL | NL | NT | NR | SL | ST | SR | EL | ET | ER | WL | WT | WR | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 266 | 0 | 109 | 0 | 0 | 0 | 0 | 1909 | 139 | 79 | 1265 | 0 | 3767 |
| Approach % | 70.93 | 0.00 | 29.07 | #### | #### | #### | 0.00 | 93.21 | 6.79 | 5.88 | 94.12 | 0.00 | |
| App/Depart | 375 | / | 0 | 0 | / | 218 | 2048 | / | 2018 | 1344 | / | 1531 | |

PM Peak Hr Begins at: 500 PM

| PEAK | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Volumes | 146 | 0 | 58 | 0 | 0 | 0 | 0 | 1048 | 50 | 35 | 632 | 0 | 1969 |
| Approach % | 71.57 | 0.00 | 28.43 | #### | #### | #### | 0.00 | 95.45 | 4.55 | 5.25 | 94.75 | 0.00 | |
| PEAK HR. FACTOR: | 0.586 | | | 0.000 | | | 0.810 | | | 0.851 | | | 0.893 |

CONTROL: Signal
COMMENT 1: 0
GPS: 33.640066, -111.884930

## Prepared by: Field Data Services of Arizona/Veracity Traffic Group (520) 316-6745

Volumes for: Thursday, August 25, 2022 City: Scottsdale Project #: 22-1480-010

Location: Pima Rd 1/4 mile east of SR-101 NB Ramps

| AM Period | NB | SB | EB | | WB | | | PM Period | NB | SB | EB | | WB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 19 | | 18 | | | 12:00 | | | 383 | | 447 | | |
| 00:15 | | | 16 | | 7 | | | 12:15 | | | 327 | | 429 | | |
| 00:30 | | | 16 | | 2 | | | 12:30 | | | 374 | | 395 | | |
| 00:45 | | | 12 | 63 | 7 | 34 | 97 | 12:45 | | | 390 | 1474 | 437 | 1708 | 3182 |
| 01:00 | | | 6 | | 5 | | | 13:00 | | | 329 | | 475 | | |
| 01:15 | | | 10 | | 7 | | | 13:15 | | | 330 | | 443 | | |
| 01:30 | | | 10 | | 6 | | | 13:30 | | | 404 | | 456 | | |
| 01:45 | | | 6 | 32 | 7 | 25 | 57 | 13:45 | | | 365 | 1428 | 465 | 1839 | 3267 |
| 02:00 | | | 8 | | 3 | | | 14:00 | | | 366 | | 487 | | |
| 02:15 | | | 5 | | 1 | | | 14:15 | | | 321 | | 537 | | |
| 02:30 | | | 5 | | 4 | | | 14:30 | | | 368 | | 502 | | |
| 02:45 | | | 8 | 26 | 10 | 18 | 44 | 14:45 | | | 410 | 1465 | 448 | 1974 | 3439 |
| 03:00 | | | 3 | | 9 | | | 15:00 | | | 386 | | 496 | | |
| 03:15 | | | 7 | | 9 | | | 15:15 | | | 380 | | 431 | | |
| 03:30 | | | 12 | | 12 | | | 15:30 | | | 393 | | 455 | | |
| 03:45 | | | 27 | 49 | 18 | 48 | 97 | 15:45 | | | 412 | 1571 | 429 | 1811 | 3382 |
| 04:00 | | | 18 | | 23 | | | 16:00 | | | 377 | | 385 | | |
| 04:15 | | | 46 | | 20 | | | 16:15 | | | 372 | | 407 | | |
| 04:30 | | | 76 | | 35 | | | 16:30 | | | 363 | | 391 | | |
| 04:45 | | | 129 | 269 | 48 | 126 | 395 | 16:45 | | | 380 | 1492 | 378 | 1561 | 3053 |
| 05:00 | | | 141 | | 57 | | | 17:00 | | | 407 | | 416 | | |
| 05:15 | | | 162 | | 55 | | | 17:15 | | | 407 | | 401 | | |
| 05:30 | | | 254 | | 91 | | | 17:30 | | | 366 | | 323 | | |
| 05:45 | | | 367 | 924 | 105 | 308 | 1232 | 17:45 | | | 367 | 1547 | 321 | 1461 | 3008 |
| 06:00 | | | 285 | | 125 | | | 18:00 | | | 329 | | 279 | | |
| 06:15 | | | 255 | | 203 | | | 18:15 | | | 270 | | 285 | | |
| 06:30 | | | 305 | | 244 | | | 18:30 | | | 281 | | 244 | | |
| 06:45 | | | 353 | 1198 | 272 | 844 | 2042 | 18:45 | | | 235 | 1115 | 242 | 1050 | 2165 |
| 07:00 | | | 306 | | 378 | | | 19:00 | | | 243 | | 204 | | |
| 07:15 | | | 349 | | 470 | | | 19:15 | | | 215 | | 233 | | |
| 07:30 | | | 393 | | 442 | | | 19:30 | | | 218 | | 143 | | |
| 07:45 | | | 432 | 1480 | 414 | 1704 | 3184 | 19:45 | | | 183 | 859 | 162 | 742 | 1601 |
| 08:00 | | | 420 | | 388 | | | 20:00 | | | 176 | | 141 | | |
| 08:15 | | | 469 | | 397 | | | 20:15 | | | 173 | | 154 | | |
| 08:30 | | | 441 | | 389 | | | 20:30 | | | 153 | | 123 | | |
| 08:45 | | | 413 | 1743 | 352 | 1526 | 3269 | 20:45 | | | 164 | 666 | 118 | 536 | 1202 |
| 09:00 | | | 367 | | 368 | | | 21:00 | | | 175 | | 98 | | |
| 09:15 | | | 302 | | 381 | | | 21:15 | | | 116 | | 110 | | |
| 09:30 | | | 327 | | 372 | | | 21:30 | | | 87 | | 93 | | |
| 09:45 | | | 396 | 1392 | 428 | 1549 | 2941 | 21:45 | | | 106 | 484 | 75 | 376 | 860 |
| 10:00 | | | 304 | | 391 | | | 22:00 | | | 79 | | 66 | | |
| 10:15 | | | 303 | | 369 | | | 22:15 | | | 55 | | 87 | | |
| 10:30 | | | 319 | | 395 | | | 22:30 | | | 58 | | 38 | | |
| 10:45 | | | 344 | 1270 | 447 | 1602 | 2872 | 22:45 | | | 62 | 254 | 23 | 214 | 468 |
| 11:00 | | | 314 | | 389 | | | 23:00 | | | 39 | | 37 | | |
| 11:15 | | | 370 | | 420 | | | 23:15 | | | 38 | | 22 | | |
| 11:30 | | | 366 | | 388 | | | 23:30 | | | 40 | | 25 | | |
| 11:45 | | | 382 | 1432 | 373 | 1570 | 3002 | 23:45 | | | 23 | 140 | 20 | 104 | 244 |
| Total Vol. | | | | 9878 | | 9354 | 19232 | | | | | 12495 | | 13376 | 25871 |

**GPS Coordinates:** 33.649137, -111.889088

| Daily Totals | NB | SB | EB | WB | Combined |
|---|---|---|---|---|---|
| | | | 22373 | 22730 | 45103 |

| | AM | | | PM | | |
|---|---|---|---|---|---|---|
| Split % | 51.4% | 48.6% | 42.6% | 48.3% | 51.7% | 57.4% |
| Peak Hour | 07:45 | 07:15 | 07:30 | 15:00 | 13:45 | 14:15 |
| Volume | 1762 | 1714 | 3355 | 1571 | 1991 | 3468 |
| P.H.F. | 0.94 | 0.91 | 0.97 | 0.95 | 0.93 | 0.98 |

## Prepared by: Field Data Services of Arizona/Veracity Traffic Group (520) 316-6745

Volumes for: Thursday, August 25, 2022 City: Scottsdale Project #: 22-1480-011

Location: SR-101 NB Frontage Rd approx. 1/4 mile north of Bell Rd

| AM Period | NB | SB | EB | WB | | PM Period | NB | SB | EB | WB | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | 8 | | | | | 12:00 | 91 | | | | |
| 00:15 | 7 | | | | | 12:15 | 88 | | | | |
| 00:30 | 2 | | | | | 12:30 | 110 | | | | |
| 00:45 | 3 | 20 | | | 20 | 12:45 | 106 | 395 | | | 395 |
| 01:00 | 2 | | | | | 13:00 | 117 | | | | |
| 01:15 | 2 | | | | | 13:15 | 114 | | | | |
| 01:30 | 1 | | | | | 13:30 | 122 | | | | |
| 01:45 | 1 | 6 | | | 6 | 13:45 | 129 | 482 | | | 482 |
| 02:00 | 1 | | | | | 14:00 | 116 | | | | |
| 02:15 | 2 | | | | | 14:15 | 89 | | | | |
| 02:30 | 0 | | | | | 14:30 | 137 | | | | |
| 02:45 | 1 | 4 | | | 4 | 14:45 | 188 | 530 | | | 530 |
| 03:00 | 3 | | | | | 15:00 | 179 | | | | |
| 03:15 | 2 | | | | | 15:15 | 163 | | | | |
| 03:30 | 2 | | | | | 15:30 | 205 | | | | |
| 03:45 | 4 | 11 | | | 11 | 15:45 | 174 | 721 | | | 721 |
| 04:00 | 4 | | | | | 16:00 | 196 | | | | |
| 04:15 | 5 | | | | | 16:15 | 145 | | | | |
| 04:30 | 7 | | | | | 16:30 | 155 | | | | |
| 04:45 | 6 | 22 | | | 22 | 16:45 | 143 | 639 | | | 639 |
| 05:00 | 12 | | | | | 17:00 | 199 | | | | |
| 05:15 | 16 | | | | | 17:15 | 162 | | | | |
| 05:30 | 15 | | | | | 17:30 | 145 | | | | |
| 05:45 | 16 | 59 | | | 59 | 17:45 | 100 | 606 | | | 606 |
| 06:00 | 36 | | | | | 18:00 | 181 | | | | |
| 06:15 | 18 | | | | | 18:15 | 114 | | | | |
| 06:30 | 54 | | | | | 18:30 | 117 | | | | |
| 06:45 | 63 | 171 | | | 171 | 18:45 | 88 | 500 | | | 500 |
| 07:00 | 75 | | | | | 19:00 | 105 | | | | |
| 07:15 | 102 | | | | | 19:15 | 94 | | | | |
| 07:30 | 133 | | | | | 19:30 | 91 | | | | |
| 07:45 | 144 | 454 | | | 454 | 19:45 | 78 | 368 | | | 368 |
| 08:00 | 135 | | | | | 20:00 | 85 | | | | |
| 08:15 | 101 | | | | | 20:15 | 107 | | | | |
| 08:30 | 108 | | | | | 20:30 | 102 | | | | |
| 08:45 | 98 | 442 | | | 442 | 20:45 | 73 | 367 | | | 367 |
| 09:00 | 82 | | | | | 21:00 | 67 | | | | |
| 09:15 | 68 | | | | | 21:15 | 70 | | | | |
| 09:30 | 77 | | | | | 21:30 | 60 | | | | |
| 09:45 | 96 | 323 | | | 323 | 21:45 | 53 | 250 | | | 250 |
| 10:00 | 74 | | | | | 22:00 | 39 | | | | |
| 10:15 | 77 | | | | | 22:15 | 20 | | | | |
| 10:30 | 73 | | | | | 22:30 | 13 | | | | |
| 10:45 | 78 | 302 | | | 302 | 22:45 | 12 | 84 | | | 84 |
| 11:00 | 103 | | | | | 23:00 | 24 | | | | |
| 11:15 | 107 | | | | | 23:15 | 7 | | | | |
| 11:30 | 109 | | | | | 23:30 | 4 | | | | |
| 11:45 | 121 | 440 | | | 440 | 23:45 | 8 | 43 | | | 43 |
| Total Vol. | | 2254 | | | 2254 | | | 4985 | | | 4985 |

**GPS Coordinates:** 33.643365, -111.890374

Daily Totals

| NB | SB | EB | WB | Combined |
|---|---|---|---|---|
| 7239 | | | | 7239 |

| | AM | | PM | |
|---|---|---|---|---|
| Split % | 100.0% | 31.1% | 100.0% | 68.9% |
| Peak Hour | 07:15 | 07:15 | 15:15 | 15:15 |
| Volume | 514 | 514 | 738 | 738 |
| P.H.F. | 0.89 | 0.89 | 0.90 | 0.90 |

## Prepared by: Field Data Services of Arizona/Veracity Traffic Group (520) 316-6745

Volumes for: Thursday, August 25, 2022 City: Scottsdale Project #: 22-1480-012

Location: Bell Rd approx. 600' east of SR-101 NB Ramps

| AM Period | NB | SB | EB | | WB | | | PM Period | NB | SB | EB | | WB | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00:00 | | | 5 | | 7 | | | 12:00 | | | 128 | | 145 | | |
| 00:15 | | | 2 | | 10 | | | 12:15 | | | 125 | | 141 | | |
| 00:30 | | | 4 | | 13 | | | 12:30 | | | 134 | | 149 | | |
| 00:45 | | | 2 | 13 | 9 | 39 | 52 | 12:45 | | | 138 | 525 | 133 | 568 | 1093 |
| 01:00 | | | 1 | | 2 | | | 13:00 | | | 154 | | 159 | | |
| 01:15 | | | 2 | | 2 | | | 13:15 | | | 110 | | 138 | | |
| 01:30 | | | 2 | | 2 | | | 13:30 | | | 135 | | 137 | | |
| 01:45 | | | 2 | 7 | 1 | 7 | 14 | 13:45 | | | 134 | 533 | 161 | 595 | 1128 |
| 02:00 | | | 0 | | 1 | | | 14:00 | | | 142 | | 155 | | |
| 02:15 | | | 0 | | 2 | | | 14:15 | | | 193 | | 110 | | |
| 02:30 | | | 1 | | 0 | | | 14:30 | | | 181 | | 183 | | |
| 02:45 | | | 2 | 3 | 0 | 3 | 6 | 14:45 | | | 223 | 739 | 220 | 668 | 1407 |
| 03:00 | | | 2 | | 2 | | | 15:00 | | | 212 | | 243 | | |
| 03:15 | | | 0 | | 2 | | | 15:15 | | | 199 | | 195 | | |
| 03:30 | | | 6 | | 1 | | | 15:30 | | | 232 | | 237 | | |
| 03:45 | | | 8 | 16 | 5 | 10 | 26 | 15:45 | | | 215 | 858 | 203 | 878 | 1736 |
| 04:00 | | | 8 | | 6 | | | 16:00 | | | 208 | | 207 | | |
| 04:15 | | | 5 | | 6 | | | 16:15 | | | 243 | | 177 | | |
| 04:30 | | | 17 | | 8 | | | 16:30 | | | 246 | | 197 | | |
| 04:45 | | | 46 | 76 | 11 | 31 | 107 | 16:45 | | | 253 | 950 | 172 | 753 | 1703 |
| 05:00 | | | 24 | | 17 | | | 17:00 | | | 237 | | 247 | | |
| 05:15 | | | 34 | | 21 | | | 17:15 | | | 229 | | 165 | | |
| 05:30 | | | 42 | | 27 | | | 17:30 | | | 293 | | 183 | | |
| 05:45 | | | 94 | 194 | 19 | 84 | 278 | 17:45 | | | 339 | 1098 | 183 | 778 | 1876 |
| 06:00 | | | 60 | | 64 | | | 18:00 | | | 213 | | 186 | | |
| 06:15 | | | 61 | | 47 | | | 18:15 | | | 161 | | 180 | | |
| 06:30 | | | 55 | | 76 | | | 18:30 | | | 136 | | 163 | | |
| 06:45 | | | 122 | 298 | 86 | 273 | 571 | 18:45 | | | 119 | 629 | 154 | 683 | 1312 |
| 07:00 | | | 120 | | 153 | | | 19:00 | | | 133 | | 156 | | |
| 07:15 | | | 198 | | 177 | | | 19:15 | | | 158 | | 129 | | |
| 07:30 | | | 252 | | 235 | | | 19:30 | | | 116 | | 135 | | |
| 07:45 | | | 282 | 852 | 211 | 776 | 1628 | 19:45 | | | 104 | 511 | 141 | 561 | 1072 |
| 08:00 | | | 301 | | 274 | | | 20:00 | | | 109 | | 141 | | |
| 08:15 | | | 214 | | 187 | | | 20:15 | | | 84 | | 155 | | |
| 08:30 | | | 135 | | 170 | | | 20:30 | | | 70 | | 153 | | |
| 08:45 | | | 182 | 832 | 134 | 765 | 1597 | 20:45 | | | 93 | 356 | 134 | 583 | 939 |
| 09:00 | | | 150 | | 115 | | | 21:00 | | | 78 | | 88 | | |
| 09:15 | | | 121 | | 103 | | | 21:15 | | | 48 | | 90 | | |
| 09:30 | | | 135 | | 113 | | | 21:30 | | | 44 | | 77 | | |
| 09:45 | | | 153 | 559 | 150 | 481 | 1040 | 21:45 | | | 33 | 203 | 51 | 306 | 509 |
| 10:00 | | | 128 | | 128 | | | 22:00 | | | 27 | | 60 | | |
| 10:15 | | | 122 | | 129 | | | 22:15 | | | 19 | | 53 | | |
| 10:30 | | | 141 | | 143 | | | 22:30 | | | 16 | | 17 | | |
| 10:45 | | | 142 | 533 | 146 | 546 | 1079 | 22:45 | | | 24 | 86 | 20 | 150 | 236 |
| 11:00 | | | 125 | | 138 | | | 23:00 | | | 7 | | 21 | | |
| 11:15 | | | 140 | | 157 | | | 23:15 | | | 8 | | 16 | | |
| 11:30 | | | 116 | | 152 | | | 23:30 | | | 14 | | 9 | | |
| 11:45 | | | 143 | 524 | 151 | 598 | 1122 | 23:45 | | | 9 | 38 | 11 | 57 | 95 |
| Total Vol. | | | | 3907 | | 3613 | 7520 | | | | | 6526 | | 6580 | 13106 |

**GPS Coordinates:** 33.640095, -111.887738

Daily Totals

| NB | SB | EB | WB | Combined |
|---|---|---|---|---|
| | | 10433 | 10193 | 20626 |

| | AM | | | PM | | |
|---|---|---|---|---|---|---|
| Split % | 52.0% | 48.0% | 36.5% | 49.8% | 50.2% | 63.5% |
| Peak Hour | 07:30 | 07:30 | 07:30 | 17:00 | 14:45 | 17:00 |
| Volume | 1049 | 907 | 1956 | 1098 | 895 | 1876 |
| P.H.F. | 0.87 | 0.83 | 0.85 | 0.81 | 0.92 | 0.90 |

# City of Scottsdale Signal Timing Data

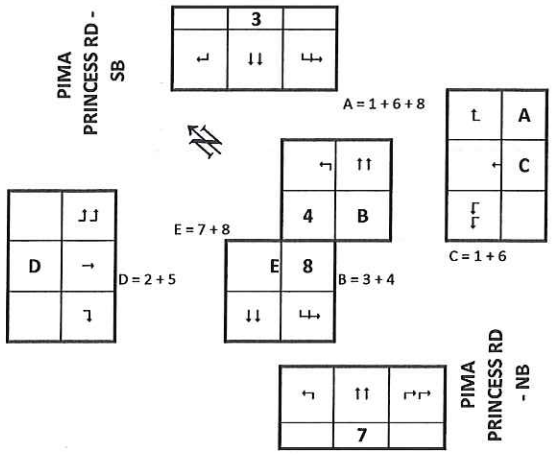
# PIMA PRINCESS RD & LOOP 101

**System # 210**

## BASIC TIMING PLAN

| Section # | I.P. Address MM1-5-1 | Date Designed |
|---|---|---|
| | 172.27.12.10 | 6/4/2021 |

| | Phase | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| | Movement | NBT | Dummy | WBT | | SBT | Dummy | EBT | |
| | NOTES | | | | | | | | |
| TIMING PLAN - MM-2-1 | MIN GRN | 7 | 1 | 10 | 5 | 7 | 1 | 7 | 5 |
| | BK MGRN | | | | | | | | |
| | CS MGRN | | | | | | | | |
| | DLY GRN | | | | | | | | |
| | WALK | | | 4 | | 4 | | 4 | |
| | WALK2 | | | | | | | | |
| | WLK MAX | | | | | | | | |
| | PED CLR/FDW | | | 17 | | 40 | | 17 | |
| | PD CLR2 | | | | | | | | |
| | PC MAX | | | | | | | | |
| | PED CO | | | | | | | | |
| | VEH EXT | 2 | 2 | 5 | 2 | 2 | 2 | 2 | 2 |
| | VH EXT2 | | | | | | | | |
| | MAX 1 | 20 | 10 | 60 | 20 | 20 | 10 | 20 | 60 |
| | MAX 2 | 30 | 15 | 80 | 30 | 30 | 10 | 30 | 80 |
| | MAX 3 | | | | | | | | |
| | DYM MAX | 60 | 10 | 80 | 30 | 60 | 10 | 30 | 80 |
| | DYM STP | 5 | 2 | 5 | 5 | 5 | 2 | 5 | 5 |
| | YELLOW | 4 | 4.0 | 4.7 | 4 | 4 | 4 | 4.7 | 4 |
| | RED CLR | 2 | 2.0 | 1 | 2.0 | 2 | 2.0 | 1 | 2.0 |
| | RED MAX | | | | | | | | |
| | RED RVT | 2 | | 2 | | 2 | | 2 | |
| | ACT B4 | | | | | | | | |
| | SEC/ACT | | | | | | | | |
| | MAX INT | | | | | | | | |
| | TIME B4 | | | | | | | | |
| | CARS WT | | | | | | | | |
| | STPTDUC | | | | | | | | |
| | TTREDUC | | | | | | | | |
| | MIN GAP | | | | | | | | |
| RECALLS - MM-2-8 | LOCK DET | | | | | | | | |
| | VEH RECALL | | | X | | | | | X |
| | PED RECALL | | | | | | | | |
| | MAX RECALL | | | | | | | | |
| | SOFT RECALL | | | | | | | | |
| | NO REST | | | | | | | | |
| | ADD INIT CAL | | | | | | | | |




**PHASING SEQUENCES**

TOD: MORNING

| | | | | | |
|---|---|---|---|---|---|
| R1 | 7 | 5 | 2 | 8 | |
| R2 | 6 | 4 | 3 | 1 | |
| | | B | | B | |

Use Timing plan:

TOD: MIDDAY

| | | | | | |
|---|---|---|---|---|---|
| R1 | 7 | 5 | 2 | 8 | |
| R2 | 6 | 4 | 3 | 1 | |
| | | B | | B | |

Use Timing plan:

TOD: EVENING

| | | | | | |
|---|---|---|---|---|---|
| R1 | 7 | 5 | 2 | 8 | |
| R2 | 6 | 4 | 3 | 1 | |
| | | B | | B | |

Use Timing plan:

TOD: NIGHT

| | | | | | |
|---|---|---|---|---|---|
| R1 | 7 | 5 | 2 | 8 | |
| R2 | 6 | 4 | 3 | 1 | |
| | | B | | B | |

Use Timing plan:

FREE

| | | | | | |
|---|---|---|---|---|---|
| R1 | 7 | 5 | 2 | 8 | |
| R2 | 6 | 4 | 3 | 1 | |
| | | B | | B | |

Use Timing plan: 254

**NOTES**

| Approved By |
|---|
| |
| **Effective Date** |
| |

# PIMA PRINCESS RD & LOOP 101

| System # | 210 |
|---|---|

| COORDINATOR | Section # | Date Updated |
|---|---|---|
| | 0 | 6/4/2021 |

| PHASE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| FDW | 0 | 0 | 17 | 0 | 40 | 0 | 17 | |
| YELLOW | 4 | 4 | 4.7 | 4 | 4 | 4 | 4.7 | 4 |
| ALL RED | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 2 |
| WALK | | 0 | | 0 | | 0 | | |

**PLAN 1 AM PLAN OPERATIVE TIMES 6:00**

| | | | | | | | | | COORD PATTERN | OFFSET |
|---|---|---|---|---|---|---|---|---|---|---|
| R1 | 7 | ↳ | 5 | ↳ | 2 | → | 8 | ↑ | | |
| R2 | 6 | ← | 4 | ↓ | 3 | ↰ | 1 | ↰ | Balanced | 47 |
| | RING 1 | | | | RING 2 | | | | | |
| PHASE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |
| SPLIT | 22 | 12 | 56 | 30 | 22 | 12 | 20 | 66 | Target Cycle Length | |
| COORD | | | X | | | | | X | 120 | |
| RECALLS | | | V | | | | | V | Actual Cycle Length | |
| GREEN | 16.0 | 6.0 | 50.3 | 24.0 | ### | 6.0 | 14.3 | 60.0 | 120 | |

**PLAN 4 MIDDAY PLAN OPERATIVE TIMES 9:00**

| | | | | | | | | | COORD PATTERN | OFFSET |
|---|---|---|---|---|---|---|---|---|---|---|
| R1 | 7 | ↳ | 5 | ↳ | 2 | → | 8 | ↑ | | |
| R2 | 6 | ← | 4 | ↓ | 3 | ↰ | 1 | ↰ | Balanced | 56 |
| | RING 1 | | | | RING 2 | | | | | |
| PHASE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |
| SPLIT | 18 | 12 | 54 | 24 | 18 | 12 | 18 | 60 | Target Cycle Length | |
| COORD | | | X | | | | | X | 108 | |
| RECALLS | | | V | | | | | V | Actual Cycle Length | |
| GREEN | 12.0 | 6.0 | 48.3 | 18.0 | ### | 6.0 | 12.3 | 54.0 | 108 | |

**PLAN 7 PM PLAN OPERATIVE TIMES 15:00**

| | | | | | | | | | COORD PATTERN | OFFSET |
|---|---|---|---|---|---|---|---|---|---|---|
| R1 | 7 | ↳ | 5 | ↳ | 2 | → | 8 | ↑ | | |
| R2 | 6 | ← | 4 | ↓ | 3 | ↰ | 1 | ↰ | Balanced | 23 |
| | RING 1 | | | | RING 2 | | | | | |
| PHASE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |
| SPLIT | 18 | 12 | 64 | 26 | 18 | 12 | 20 | 70 | Target Cycle Length | |
| COORD | | | X | | | | | X | 120 | |
| RECALLS | | | V | | | | | V | Actual Cycle Length | |
| GREEN | 12.0 | 6.0 | 58.3 | 20.0 | ### | 6.0 | 14.3 | 64.0 | 120 | |

**PLAN 100 FREE MIDNIGHT PLAN OPERATIVE TIMES**

| | | | | | | | | | COORD PATTERN | OFFSET |
|---|---|---|---|---|---|---|---|---|---|---|
| R1 | 7 | ↳ | 5 | ↳ | 2 | → | 8 | ↑ | | |
| R2 | 6 | ← | 4 | ↓ | 3 | ↰ | 1 | ↰ | Balanced | 0 |
| | RING 1 | | | | RING 2 | | | | | |
| PHASE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |
| SPLIT | | | | | | | | | Target Cycle Length | |
| COORD | | | | | | | | | 0 | |
| RECALLS | | | | | | | | | Actual Cycle Length | |
| GREEN | -6.0 | -6.0 | -5.7 | -6.0 | -6.0 | -6.0 | -5.7 | -6.0 | 0 | |

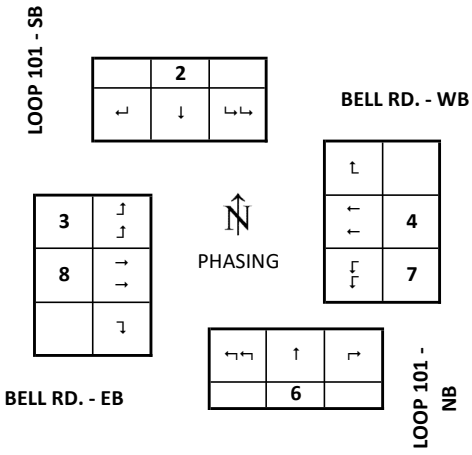
# BELL RD. & LOOP 101

**System # 201**

## BASIC TIMING PLAN

| Section # | I.P. Address | Date Designed |
|---|---|---|
| | MM1-5-1 | |
| | 172.27.12.01 | 8/8/2017 |

| | Phase | | 2 | 3 | 4 | | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| | Movement | | SBT | EBL | WBT | | NBT | WBL | EBT |
| | NOTES | | | PROT | COORD | | | PROT | COORD |
| TIMING PLAN - MM-2-1 | MIN GRN | | 7 | 5 | 10 | | 7 | 5 | 10 |
| | BK MGRN | | | | | | | | |
| | CS MGRN | | | | | | | | |
| | DLY GRN | | | | | | | | |
| | WALK | | 7 | | 8 | | 7 | | 7 |
| | WALK2 | | | | | | | | |
| | WLK MAX | | | | | | | | |
| | PED CLR/FDW | | 38 | | 26 | | 35 | | 23 |
| | PD CLR2 | | | | | | | | |
| | PC MAX | | | | | | | | |
| | PED CO | | | | | | | | |
| | VEH EXT | | 2 | 2 | 2 | | 2 | 2 | 2 |
| | VH EXT2 | | | | | | | | |
| | MAX 1 | | 50 | 35 | 40 | | 50 | 35 | 40 |
| | MAX 2 | | 60 | 50 | 60 | | 60 | 40 | 60 |
| | MAX 3 | | | | | | | | |
| | DYM MAX | | | | | | | | |
| | DYM STP | | | | | | | | |
| | YELLOW | | 4.7 | 4 | 4.7 | | 4.7 | 4.0 | 4.7 |
| | RED CLR | | 1.2 | 2 | 1.0 | | 1.3 | 2 | 1.0 |
| | RED MAX | | | | | | | | |
| | RED RVT | | 2 | 2 | 2 | | 2 | 2 | 2 |
| | ACT B4 | | | | | | | | |
| | SEC/ACT | | | | | | | | |
| | MAX INT | | | | | | | | |
| | TIME B4 | | | | | | | | |
| | CARS WT | | | | | | | | |
| | STPTDUC | | | | | | | | |
| | TTREDUC | | | | | | | | |
| | MIN GAP | | | | | | | | |
| RECALLS - MM-2-8 | LOCK DET | | | | | | | | |
| | VEH RECALL | | | X | | | | | X |
| | PED RECALL | | | | | | | | |
| | MAX RECALL | | | | | | | | |
| | SOFT RECALL | | | | | | | | |
| | NO REST | | | | | | | | |
| | ADD INIT CAL | | | | | | | | |




### PHASING SEQUENCES

TOD: MORNING

| | | | | |
|---|---|---|---|---|
| R1 | 4 | 3 | 6 | 2 |
| R2 | 8 | 7 | 0 | 0 |
| | | B | | B |

Use Timing plan:

TOD: MIDDAY

| | | | | |
|---|---|---|---|---|
| R1 | 4 | 3 | 6 | 2 |
| R2 | 8 | 7 | 0 | 0 |
| | | B | | B |

Use Timing plan:

TOD: EVENING

| | | | | |
|---|---|---|---|---|
| R1 | 4 | 3 | 6 | 2 |
| R2 | 8 | 7 | 0 | 0 |
| | | B | | B |

Use Timing plan:

TOD: NIGHT

| | | | | |
|---|---|---|---|---|
| R1 | 4 | 3 | 6 | 2 |
| R2 | 8 | 7 | 0 | 0 |
| | | B | | B |

Use Timing plan:

**FREE**

| | | | | |
|---|---|---|---|---|
| R1 | 4 | 3 | 6 | 2 |
| R2 | 8 | 7 | | |
| | | B | | B |

Use Timing plan: 254

### NOTES

INTERSECTION IN FREE 24/7

| Approved By |
|---|
| |
| **Effective Date** |
| |

# FRANK LLOYD WRIGHT & SR 101

**System # 174**

## BASIC TIMING PLAN 1

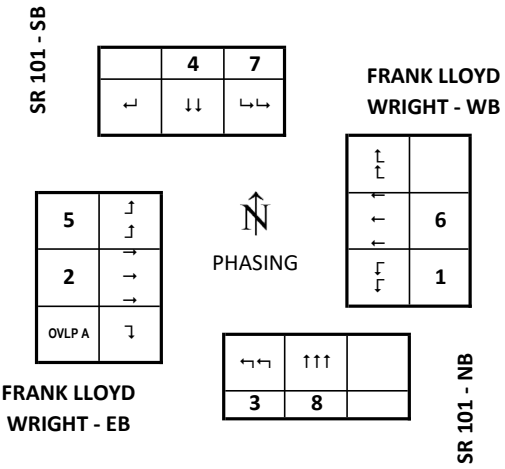
| Section # | I.P. Address MM1-5-1 | Date Designed |
|---|---|---|
| 1618 | 172.27.11.74 | 10/15/2021 |

*TIMING PLAN - MM-2-1*

| Phase | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Movement | WBL | EBT | NBL | SBT | EBL | WBT | SBL | NBT |
| NOTES | PROT | COORD | PROT | | PROT | COORD | PROT | |
| MIN GRN | 5 | 10 | 5 | 10 | 5 | 10 | 5 | 10 |
| BK MGRN | | | | | | | | |
| CS MGRN | | | | | | | | |
| DLY GRN | | | | | | | | |
| WALK | | 4 | | 4 | | 4 | | 4 |
| WALK2 | | | | | | | | |
| WLK MAX | | | | | | | | |
| PED CLR/FDW | | 20 | | 40 | | 17 | | 38 |
| PD CLR2 | | | | | | | | |
| PC MAX | | | | | | | | |
| PED CO | | | | | | | | |
| VEH EXT | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| VH EXT2 | | | | | | | | |
| MAX 1 | 35 | 50 | 35 | 50 | 35 | 50 | 35 | 50 |
| MAX 2 | 45 | 65 | 45 | 65 | 45 | 65 | 45 | 65 |
| MAX 3 | | | | | | | | |
| DYM MAX | 45 | 65 | 45 | 65 | 45 | 65 | 45 | 65 |
| DYM STP | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| YELLOW | 3.6 | 4.4 | 3.6 | 4.4 | 3.6 | 4.4 | 3.6 | 4.4 |
| RED CLR | 4.5 | 6.0 | 1.8 | 1.8 | 4.5 | 6 | 1.8 | 1.8 |
| RED MAX | | | | | | | | |
| RED RVT | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| ACT B4 | | | | | | | | |
| SEC/ACT | | | | | | | | |
| MAX INT | | | | | | | | |
| TIME B4 | | | | | | | | |
| CARS WT | | | | | | | | |
| STPTDUC | | | | | | | | |
| TTREDUC | | | | | | | | |
| MIN GAP | | | | | | | | |

*RECALLS - MM-2-8*

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| LOCK DET | | | | | | | | |
| VEH RECALL | | X | | | | X | | |
| PED RECALL | | | | | | | | |
| MAX RECALL | | | | | | | | |
| SOFT RECALL | | | | | | | | |
| NO REST | | | | | | | | |
| ADD INIT CAL | | | | | | | | |




### PHASING SEQUENCES

TOD: MORNING
R1: 2 1 4 3
R2: 6 5 8 7
B B
Use Timing plan: 1

TOD: MIDDAY
R1: 2 1 4 3
R2: 6 5 8 7
B B
Use Timing plan: 1

TOD: EVENING
R1: 2 1 4 3
R2: 6 5 8 7
B B
Use Timing plan: 1

TOD: NIGHT
R1: 2 1 4 3
R2: 6 5 8 7
B B
Use Timing plan:

**FREE**
R1: 2 1 4 3
R2: 6 5 8 7
B B
Use Timing plan: 254

### NOTES

| Approved By |
|---|
| |
| **Effective Date** |
| |

# FRANK LLOYD WRIGHT & SR 101

| System # | 174 |
|---|---|

## COORDINATOR

| Section # | Date Updated |
|---|---|
| 1618 | 10/15/2021 |

| PHASE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| FDW | | 20 | | 40 | | 17 | | 38 |
| YELLOW | 3.6 | 4.4 | 3.6 | 4.4 | 3.6 | 4.4 | 3.6 | 4.4 |
| ALL RED | 4.5 | 6 | 1.8 | 1.8 | 4.5 | 6 | 1.8 | 1.8 |
| WALK | | 20 | | 40 | | 17 | | 38 |

### PLAN 1 AM PLAN OPERATIVE TIMES 6:00

| | | | | | | | | | TIMING PLAN | OFFSET |
|---|---|---|---|---|---|---|---|---|---|---|
| R1 | 2 | → | 1 | ↱ | 4 | ↓ | 3 | ↰ | | |
| R2 | 6 | ← | 5 | ↱ | 8 | ↑ | 7 | ↳ | | 35 |
| | RING 1 | | | | RING 2 | | | | | |
| PHASE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |
| SPLIT | 20 | 38 | 30 | 32 | 30 | 28 | 34 | 28 | Target Cycle Length | |
| COORD | | X | | | | X | | | 120 | |
| RECALLS | | V | | | | V | | | Actual Cycle Length | |
| GREEN | 11.9 | 27.6 | 24.6 | 25.8 | 21.9 | 17.6 | 28.6 | 21.8 | 120 | |

### PLAN 2 MIDDAY PLAN OPERATIVE TIMES 9:00

| | | | | | | | | | TIMING PLAN | OFFSET |
|---|---|---|---|---|---|---|---|---|---|---|
| R1 | 2 | → | 1 | ↱ | 4 | ↓ | 3 | ↰ | | |
| R2 | 6 | ← | 5 | ↱ | 8 | ↑ | 7 | ↳ | | 100 |
| | RING 1 | | | | RING 2 | | | | | |
| PHASE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |
| SPLIT | 18 | 33 | 27 | 30 | 26 | 25 | 30 | 27 | Target Cycle Length | |
| COORD | | X | | | | X | | | 108 | |
| RECALLS | | V | | | | V | | | Actual Cycle Length | |
| GREEN | 9.9 | 22.6 | 21.6 | 23.8 | 17.9 | 14.6 | 24.6 | 20.8 | 108 | |

### PLAN 3 PM PLAN OPERATIVE TIMES 15:00

| | | | | | | | | | TIMING PLAN | OFFSET |
|---|---|---|---|---|---|---|---|---|---|---|
| R1 | 2 | → | 1 | ↱ | 4 | ↓ | 3 | ↰ | | |
| R2 | 6 | ← | 5 | ↱ | 8 | ↑ | 7 | ↳ | | 91 |
| | RING 1 | | | | RING 2 | | | | | |
| PHASE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |
| SPLIT | 19 | 36 | 29 | 36 | 31 | 24 | 37 | 28 | Target Cycle Length | |
| COORD | | X | | | | X | | | 120 | |
| RECALLS | | V | | | | V | | | Actual Cycle Length | |
| GREEN | 10.9 | 25.6 | 23.6 | 29.8 | 22.9 | 13.6 | 31.6 | 21.8 | 120 | |

### PLAN 4 MIDNIGHT PLAN OPERATIVE TIMES 22:00

| | | | | | | | | | TIMING PLAN | OFFSET |
|---|---|---|---|---|---|---|---|---|---|---|
| R1 | 2 | → | 1 | ↱ | 4 | ↓ | 3 | ↰ | | |
| R2 | 6 | ← | 5 | ↱ | 8 | ↑ | 7 | ↳ | | 11 |
| | RING 1 | | | | RING 2 | | | | | |
| PHASE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | |
| SPLIT | 18 | 29 | 22 | 21 | 18 | 29 | 19 | 24 | Target Cycle Length | |
| COORD | | X | | | | X | | | 90 | |
| RECALLS | | V | | | | V | | | Actual Cycle Length | |
| GREEN | 9.9 | 18.6 | 16.6 | 14.8 | 9.9 | 18.6 | 13.6 | 17.8 | 90 | |

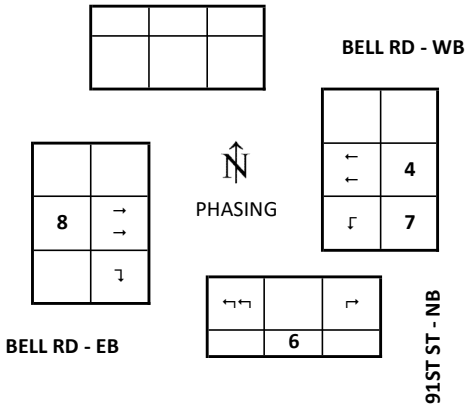
# BELL RD & 91ST ST

**System # 258**

## BASIC TIMING PLAN

| Section # | I.P. Address | Date Designed |
|---|---|---|
| | MM1-5-1 | |
| | 172.27.12.58 | 6/1/2018 |

| | Phase | | | | 4 | | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|---|
| | Movement | | | | WBT | | NBT | WBL | EBT |
| | NOTES | | | | COORD | | | L-P&p | COORD |
| TIMING PLAN - MM-2-1 | MIN GRN | | | | 10 | | 7 | 5 | 10 |
| | BK MGRN | | | | | | | | |
| | CS MGRN | | | | | | | | |
| | DLY GRN | | | | | | | | |
| | WALK | | | | 0 | | 8 | | 8 |
| | WALK2 | | | | | | | | |
| | WLK MAX | | | | | | | | |
| | PED CLR/FDW | | | | - | | 24 | | 24 |
| | PD CLR2 | | | | | | | | |
| | PC MAX | | | | | | | | |
| | PED CO | | | | | | | | |
| | VEH EXT | | | | | | 2 | 2 | |
| | VH EXT2 | | | | | | | | |
| | MAX 1 | | | | 80 | | 35 | 30 | 60 |
| | MAX 2 | | | | 90 | | 45 | 50 | 80 |
| | MAX 3 | | | | | | | | |
| | DYM MAX | | | | | | | | |
| | DYM STP | | | | | | | | |
| | YELLOW | | | | 4.7 | | 3.3 | 4.0 | 4.7 |
| | RED CLR | | | | 1.2 | | 2.0 | 2 | 1.0 |
| | RED MAX | | | | | | | | |
| | RED RVT | | | | 2 | | 2 | 2 | 2 |
| | ACT B4 | | | | | | | | |
| | SEC/ACT | | | | | | | | |
| | MAX INT | | | | | | | | |
| | TIME B4 | | | | | | | | |
| | CARS WT | | | | | | | | |
| | STPTDUC | | | | | | | | |
| | TTREDUC | | | | | | | | |
| | MIN GAP | | | | | | | | |
| RECALLS - MM-2-8 | LOCK DET | | | | | | | | |
| | VEH RECALL | | | | | | | | |
| | PED RECALL | | | | | | | | |
| | MAX RECALL | | | | X | | | | X |
| | SOFT RECALL | | | | | | | | |
| | NO REST | | | | | | | | |
| | ADD INIT CAL | | | | | | | | |




### PHASING SEQUENCES

TOD: MORNING
R1 4
R2 6 8 7
B B
Use Timing plan:

TOD: MIDDAY
R1 4
R2 6 8 7
B B
Use Timing plan:

TOD: EVENING
R1 4
R2 6 8 7
B B
Use Timing plan:

TOD: NIGHT
R1 4
R2 6 8 7
B B
Use Timing plan:

**FREE**
R1 4
R2 6 8 7
B B
Use Timing plan: 254

### NOTES

| Approved By |
|---|
| |
| **Effective Date** |
| |

# BELL RD & 91ST ST

| System # | 258 |
|---|---|

## COORDINATOR

| Section # | Date Updated |
|---|---|
| 0 | 6/1/2018 |

| PHASE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| FDW | | | | - | | 24 | | 24 |
| YELLOW | | | | 4.7 | | 3.3 | 4 | 4.7 |
| ALL RED | | | | 1.2 | | 2 | 2 | 1 |
| WALK | | | | - | | 24 | | 24 |

### PLAN 11 AM PLAN OPERATIVE TIMES **6:30**

| | | | | | | | | | COORD PATTERN | OFFSET |
|---|---|---|---|---|---|---|---|---|---|---|
| R1 | | | | | 4 | ← | | | | |
| R2 | 6 | ↑ | | | 8 | → | 7 | ↓ | Balanced | 104 |
| | RING 1 | | | | RING 2 | | | | | |
| PHASE | | | | 4 | | 6 | 7 | 8 | | |
| SPLIT | | | | 99 | | 21 | 11 | 88 | Target Cycle Length | |
| COORD | | | | X | | | | X | 120 | |
| RECALLS | | | | M | | | | M | Actual Cycle Length | |
| GREEN | | | | 93.1 | | 15.7 | 5.0 | 82.3 | 120 | |

### PLAN 14 MIDDAY PLAN OPERATIVE TIMES **9:00**

| | | | | | | | | | COORD PATTERN | OFFSET |
|---|---|---|---|---|---|---|---|---|---|---|
| R1 | | | | | 4 | ← | 0 | ↑↑↑ | | |
| R2 | 6 | ↑ | | | 8 | → | 7 | ↓ | Balanced | 111 |
| | RING 1 | | | | RING 2 | | | | | |
| PHASE | | | | 4 | | 6 | 7 | 8 | | |
| SPLIT | | | | 92 | | 28 | 20 | 72 | Target Cycle Length | |
| COORD | | | | X | | | | X | 120 | |
| RECALLS | | | | M | | | | M | Actual Cycle Length | |
| GREEN | | | | 86.1 | | 22.7 | 14.0 | 66.3 | 120 | |

### PLAN 7 PM PLAN OPERATIVE TIMES **15:00**

| | | | | | | | | | COORD PATTERN | OFFSET |
|---|---|---|---|---|---|---|---|---|---|---|
| R1 | | | | | 4 | ← | | | | |
| R2 | 6 | ↑ | | | 8 | → | 7 | ↓ | Balanced | 107 |
| | RING 1 | | | | RING 2 | | | | | |
| PHASE | | | | 4 | | 6 | 7 | 8 | | |
| SPLIT | | | | 90 | | 30 | 18 | 72 | Target Cycle Length | |
| COORD | | | | X | | | | X | 120 | |
| RECALLS | | | | M | | | | M | Actual Cycle Length | |
| GREEN | | | | 84.1 | | 24.7 | 12.0 | 66.3 | 120 | |

### PLAN 10 MIDNIGHT PLAN OPERATIVE TIMES

| | | | | | | | | | COORD PATTERN | OFFSET |
|---|---|---|---|---|---|---|---|---|---|---|
| R1 | | | | | 4 | ← | | | | |
| R2 | 6 | ↑ | | | 8 | → | 7 | ↓ | Balanced | 61 |
| | RING 1 | | | | RING 2 | | | | | |
| PHASE | | | | 4 | | 6 | 7 | 8 | | |
| SPLIT | | | | 66 | | 24 | 14 | 52 | Target Cycle Length | |
| COORD | | | | X | | | | X | 90 | |
| RECALLS | | | | M | | | | M | Actual Cycle Length | |
| GREEN | | | | 60.1 | | 18.7 | 8.0 | 46.3 | 90 | |

### PLAN 254 **FREE** PLAN OPERATIVE TIMES **22:00**

| | | | | | | | | | COORD PATTERN | OFFSET |
|---|---|---|---|---|---|---|---|---|---|---|
| R1 | | | | | 4 | ← | | | | |
| R2 | 6 | ↑ | | | 8 | → | 7 | ↓ | Balanced | |
| | RING 1 | | | | RING 2 | | | | | |
| PHASE | | | | 4 | | 6 | 7 | 8 | | |
| SPLIT | | | | | | | | | Target Cycle Length | |
| COORD | | | | | | | | | XXX | |
| RECALLS | | | | | | | | | Actual Cycle Length | |
| GREEN | | | | -5.9 | | -5.3 | -6.0 | -5.7 | 0 | |

# Existing AM
# Traffic Capacity Analysis

| Intersection | |
|---|---|
| Int Delay, s/veh | 7 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 65 | 14 | 1693 | 152 | 5 | 1588 |
| Future Vol, veh/h | 65 | 14 | 1693 | 152 | 5 | 1588 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 200 | 0 | - | 100 | 80 | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 75 | 75 | 95 | 95 | 93 | 93 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 87 | 19 | 1782 | 160 | 5 | 1708 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2475 | 891 | 0 | 0 | 1942 | 0 |
| Stage 1 | 1782 | - | - | - | - | - |
| Stage 2 | 693 | - | - | - | - | - |
| Critical Hdwy | 5.74 | 7.14 | - | - | 5.34 | - |
| Critical Hdwy Stg 1 | 6.64 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.04 | - | - | - | - | - |
| Follow-up Hdwy | 3.82 | 3.92 | - | - | 3.12 | - |
| Pot Cap-1 Maneuver | ~ 52 | 245 | - | - | 134 | - |
| Stage 1 | ~ 78 | - | - | - | - | - |
| Stage 2 | 416 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 50 | 245 | - | - | 134 | - |
| Mov Cap-2 Maneuver | ~ 69 | - | - | - | - | - |
| Stage 1 | ~ 78 | - | - | - | - | - |
| Stage 2 | 401 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 247.2 | 0 | 0.1 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 69 | 245 | 134 | - |
| HCM Lane V/C Ratio | - | - | 1.256 | 0.076 | 0.04 | - |
| HCM Control Delay (s) | - | - | 295.9 | 20.9 | 33 | - |
| HCM Lane LOS | - | - | F | C | D | - |
| HCM 95th %tile Q(veh) | - | - | 6.9 | 0.2 | 0.1 | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 9.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 8 | 70 | 78 | 1 | 46 | 1 | 50 | 1 | 1 | 1 | 1 | 5 |
| Future Vol, veh/h | 8 | 70 | 78 | 1 | 46 | 1 | 50 | 1 | 1 | 1 | 1 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 125 | - | - | - | 150 | - | - | 160 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 10 | 88 | 98 | 1 | 58 | 1 | 63 | 1 | 1 | 1 | 1 | 6 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 163 | 134 | 4 | 227 | 137 | 2 | 7 | 0 | 0 | 2 | 0 | 0 |
| Stage 1 | 6 | 6 | - | 128 | 128 | - | - | - | - | - | - | - |
| Stage 2 | 157 | 128 | - | 99 | 9 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 802 | 757 | 1080 | 728 | 754 | 1082 | 1614 | - | - | 1620 | - | - |
| Stage 1 | 1016 | 891 | - | 876 | 790 | - | - | - | - | - | - | - |
| Stage 2 | 845 | 790 | - | 907 | 888 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 730 | 727 | 1080 | 583 | 724 | 1082 | 1614 | - | - | 1620 | - | - |
| Mov Cap-2 Maneuver | 730 | 727 | - | 583 | 724 | - | - | - | - | - | - | - |
| Stage 1 | 976 | 890 | - | 842 | 759 | - | - | - | - | - | - | - |
| Stage 2 | 750 | 759 | - | 744 | 887 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 9.7 | 10.4 | 7 | 1 |
| HCM LOS | A | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1614 | - | - | 727 | 1080 | 725 | 1620 | - | - |
| HCM Lane V/C Ratio | 0.039 | - | - | 0.134 | 0.09 | 0.083 | 0.001 | - | - |
| HCM Control Delay (s) | 7.3 | - | - | 10.7 | 8.7 | 10.4 | 7.2 | - | - |
| HCM Lane LOS | A | - | - | B | A | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.5 | 0.3 | 0.3 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.7 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1089 | 55 | 23 | 929 | 11 | 13 |
| Future Vol, veh/h | 1089 | 55 | 23 | 929 | 11 | 13 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 150 | 60 | - | 100 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 89 | 89 | 83 | 83 | 79 | 79 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1224 | 62 | 28 | 1119 | 14 | 16 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1286 | 0 | 1840 | 612 |
| Stage 1 | - | - | - | - | 1224 | - |
| Stage 2 | - | - | - | - | 616 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 535 | - | 67 | 436 |
| Stage 1 | - | - | - | - | 241 | - |
| Stage 2 | - | - | - | - | 501 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 535 | - | 64 | 436 |
| Mov Cap-2 Maneuver | - | - | - | - | 64 | - |
| Stage 1 | - | - | - | - | 241 | - |
| Stage 2 | - | - | - | - | 475 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.3 | 42.3 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 64 | 436 | - | - | 535 | - |
| HCM Lane V/C Ratio | 0.218 | 0.038 | - | - | 0.052 | - |
| HCM Control Delay (s) | 76.3 | 13.6 | - | - | 12.1 | - |
| HCM Lane LOS | F | B | - | - | B | - |
| HCM 95th %tile Q(veh) | 0.7 | 0.1 | - | - | 0.2 | - |

| Phase Number | 4 | 6 | 7 | 8 |
|---|---|---|---|---|
| Movement | WBTL | NBL | WBL | EBT |
| Lead/Lag | | | Lag | Lead |
| Lead-Lag Optimize | | | | |
| Recall Mode | C-Max | None | None | C-Max |
| Maximum Split (s) | 99 | 21 | 11 | 88 |
| Maximum Split (%) | 82.5% | 17.5% | 9.2% | 73.3% |
| Minimum Split (s) | 22.5 | 37.3 | 11 | 38.7 |
| Yellow Time (s) | 4.7 | 3.3 | 4 | 4.7 |
| All-Red Time (s) | 1.2 | 2 | 2 | 1 |
| Minimum Initial (s) | 10 | 7 | 5 | 10 |
| Vehicle Extension (s) | 2 | 2 | 2 | 2 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 |
| Walk Time (s) | | 8 | | 8 |
| Flash Dont Walk (s) | | 24 | | 24 |
| Dual Entry | Yes | Yes | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes |
| Start Time (s) | 21.7 | 0.7 | 109.7 | 21.7 |
| End Time (s) | 0.7 | 21.7 | 0.7 | 109.7 |
| Yield/Force Off (s) | 114.8 | 16.4 | 114.7 | 104 |
| Yield/Force Off 170(s) | 114.8 | 112.4 | 114.7 | 80 |
| Local Start Time (s) | 37.7 | 16.7 | 5.7 | 37.7 |
| Local Yield (s) | 10.8 | 32.4 | 10.7 | 0 |
| Local Yield 170(s) | 10.8 | 8.4 | 10.7 | 96 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 90 |
| Offset: 104 (87%), Referenced to phase 4:WBTL and 8:EBT, Start of Yellow | |

Splits and Phases: 16: 91st Street & Bell Rd

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 983 | 119 | 29 | 893 | 60 | 14 |
| Future Volume (veh/h) | 983 | 119 | 29 | 893 | 60 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1130 | 96 | 34 | 1051 | 92 | 16 |
| Peak Hour Factor | 0.87 | 0.87 | 0.85 | 0.85 | 0.65 | 0.65 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2437 | 1087 | 504 | 3017 | 196 | 90 |
| Arrive On Green | 0.69 | 0.69 | 0.12 | 0.85 | 0.06 | 0.06 |
| Sat Flow, veh/h | 3647 | 1585 | 1781 | 3647 | 3456 | 1585 |
| Grp Volume(v), veh/h | 1130 | 96 | 34 | 1051 | 92 | 16 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1585 | 1781 | 1777 | 1728 | 1585 |
| Q Serve(g_s), s | 17.6 | 2.4 | 0.0 | 7.6 | 3.1 | 1.2 |
| Cycle Q Clear(g_c), s | 17.6 | 2.4 | 0.0 | 7.6 | 3.1 | 1.2 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2437 | 1087 | 504 | 3017 | 196 | 90 |
| V/C Ratio(X) | 0.46 | 0.09 | 0.07 | 0.35 | 0.47 | 0.18 |
| Avail Cap(c_a), veh/h | 2437 | 1087 | 504 | 3017 | 452 | 207 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 8.7 | 6.3 | 8.5 | 1.9 | 54.8 | 53.9 |
| Incr Delay (d2), s/veh | 0.6 | 0.2 | 0.0 | 0.3 | 0.6 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 9.9 | 1.4 | 0.6 | 2.2 | 2.5 | 1.9 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 9.3 | 6.5 | 8.5 | 2.3 | 55.5 | 54.3 |
| LnGrp LOS | A | A | A | A | E | D |
| Approach Vol, veh/h | 1226 | | | 1085 | 108 | |
| Approach Delay, s/veh | 9.1 | | | 2.5 | 55.3 | |
| Approach LOS | A | | | A | E | |

| Timer - Assigned Phs | 4 | 6 | 7 | 8 |
|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 107.9 | 12.1 | 19.9 | 88.0 |
| Change Period (Y+Rc), s | * 6 | 5.3 | 6.0 | 5.7 |
| Max Green Setting (Gmax), s | * 93 | 15.7 | 5.0 | 82.3 |
| Max Q Clear Time (g_c+I1), s | 9.6 | 5.1 | 2.0 | 19.6 |
| Green Ext Time (p_c), s | 5.1 | 0.1 | 0.0 | 5.8 |

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

Notes

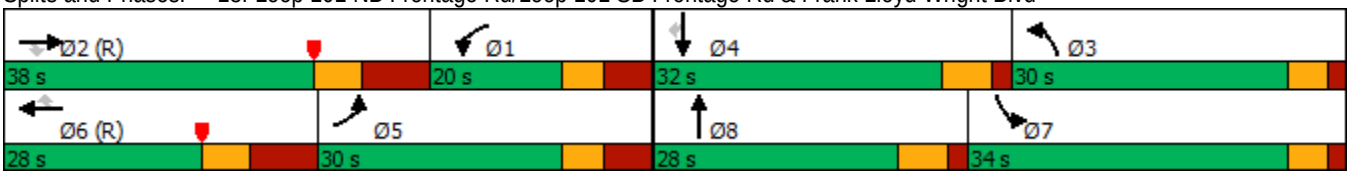
User approved pedestrian interval to be less than phase max green.

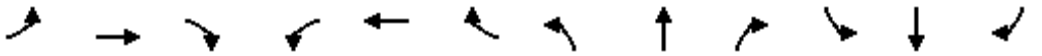
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Phase Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Movement | WBL | EBT | NBL | SBT | EBL | WBT | SBL | NBT |
| Lead/Lag | Lag | Lead | Lag | Lead | Lag | Lead | Lag | Lead |
| Lead-Lag Optimize | | | | | | | | |
| Recall Mode | None | C-Min | None | None | None | C-Min | None | None |
| Maximum Split (s) | 20 | 38 | 30 | 32 | 30 | 28 | 34 | 28 |
| Maximum Split (%) | 16.7% | 31.7% | 25.0% | 26.7% | 25.0% | 23.3% | 28.3% | 23.3% |
| Minimum Split (s) | 13.1 | 34.4 | 10.4 | 50.2 | 13.1 | 31.4 | 10.4 | 48.2 |
| Yellow Time (s) | 3.6 | 4.4 | 3.6 | 4.4 | 3.6 | 4.4 | 3.6 | 4.4 |
| All-Red Time (s) | 4.5 | 6 | 1.8 | 1.8 | 4.5 | 6 | 1.8 | 1.8 |
| Minimum Initial (s) | 5 | 10 | 5 | 10 | 5 | 10 | 5 | 10 |
| Vehicle Extension (s) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Walk Time (s) | | 4 | | 4 | | 4 | | 4 |
| Flash Dont Walk (s) | | 20 | | 40 | | 17 | | 38 |
| Dual Entry | Yes | Yes | No | Yes | No | Yes | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Start Time (s) | 55.4 | 17.4 | 107.4 | 75.4 | 45.4 | 17.4 | 103.4 | 75.4 |
| End Time (s) | 75.4 | 55.4 | 17.4 | 107.4 | 75.4 | 45.4 | 17.4 | 103.4 |
| Yield/Force Off (s) | 67.3 | 45 | 12 | 101.2 | 67.3 | 35 | 12 | 97.2 |
| Yield/Force Off 170(s) | 67.3 | 25 | 12 | 61.2 | 67.3 | 18 | 12 | 59.2 |
| Local Start Time (s) | 20.4 | 102.4 | 72.4 | 40.4 | 10.4 | 102.4 | 68.4 | 40.4 |
| Local Yield (s) | 32.3 | 10 | 97 | 66.2 | 32.3 | 0 | 97 | 62.2 |
| Local Yield 170(s) | 32.3 | 110 | 97 | 26.2 | 32.3 | 103 | 97 | 24.2 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 150 |
| Offset: 35 (29%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow | |

Splits and Phases: 18: Loop 101 NB Frontage Rd/Loop 101 SB Frontage Rd & Frank Lloyd Wright Blvd





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 550 | 508 | 497 | 237 | 546 | 1005 | 666 | 613 | 90 | 807 | 607 | 524 |
| Future Volume (veh/h) | 550 | 508 | 497 | 237 | 546 | 1005 | 666 | 613 | 90 | 807 | 607 | 524 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 573 | 529 | 0 | 293 | 674 | 0 | 716 | 659 | 97 | 887 | 667 | 576 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.81 | 0.81 | 0.81 | 0.93 | 0.93 | 0.93 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 631 | 675 | | 681 | 748 | | 708 | 757 | 110 | 871 | 764 | 341 |
| Arrive On Green | 0.18 | 0.13 | 0.00 | 0.20 | 0.15 | 0.00 | 0.20 | 0.17 | 0.17 | 0.25 | 0.22 | 0.22 |
| Sat Flow, veh/h | 3456 | 5106 | 1585 | 3456 | 5106 | 2790 | 3456 | 4501 | 655 | 3456 | 3554 | 1585 |
| Grp Volume(v), veh/h | 573 | 529 | 0 | 293 | 674 | 0 | 716 | 497 | 259 | 887 | 667 | 576 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1585 | 1728 | 1702 | 1395 | 1728 | 1702 | 1752 | 1728 | 1777 | 1585 |
| Q Serve(g_s), s | 19.5 | 12.0 | 0.0 | 8.9 | 15.6 | 0.0 | 24.6 | 17.0 | 17.3 | 30.2 | 21.8 | 25.8 |
| Cycle Q Clear(g_c), s | 19.5 | 12.0 | 0.0 | 8.9 | 15.6 | 0.0 | 24.6 | 17.0 | 17.3 | 30.2 | 21.8 | 25.8 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.37 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 631 | 675 | | 681 | 748 | | 708 | 572 | 295 | 871 | 764 | 341 |
| V/C Ratio(X) | 0.91 | 0.78 | | 0.43 | 0.90 | | 1.01 | 0.87 | 0.88 | 1.02 | 0.87 | 1.69 |
| Avail Cap(c_a), veh/h | 631 | 1174 | | 681 | 749 | | 708 | 618 | 318 | 871 | 764 | 341 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 48.1 | 50.4 | 0.0 | 42.3 | 50.4 | 0.0 | 47.7 | 48.6 | 48.7 | 44.9 | 45.5 | 47.1 |
| Incr Delay (d2), s/veh | 16.7 | 8.9 | 0.0 | 0.2 | 16.1 | 0.0 | 36.5 | 11.1 | 21.3 | 35.3 | 10.5 | 323.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 14.7 | 9.4 | 0.0 | 6.7 | 12.1 | 0.0 | 20.0 | 12.5 | 14.0 | 23.7 | 15.7 | 63.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 64.7 | 59.3 | 0.0 | 42.4 | 66.4 | 0.0 | 84.2 | 59.7 | 70.1 | 80.2 | 56.0 | 370.1 |
| LnGrp LOS | E | E | | D | E | | F | E | E | F | E | F |
| Approach Vol, veh/h | | 1102 | | | 967 | | | 1472 | | | 2130 | |
| Approach Delay, s/veh | | 62.1 | | | 59.2 | | | 73.4 | | | 151.0 | |
| Approach LOS | | E | | | E | | | E | | | F | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 31.7 | 26.3 | 30.0 | 32.0 | 30.0 | 28.0 | 35.6 | 26.4 |
| Change Period (Y+Rc), s | * 8.1 | * 10 | * 5.4 | * 6.2 | * 8.1 | * 10 | * 5.4 | * 6.2 |
| Max Green Setting (Gmax), s | * 12 | * 28 | * 25 | * 26 | * 22 | * 18 | * 29 | * 22 |
| Max Q Clear Time (g_c+I1), s | 10.9 | 14.0 | 26.6 | 27.8 | 21.5 | 17.6 | 32.2 | 19.3 |
| Green Ext Time (p_c), s | 0.1 | 1.8 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.8 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 97.9 |
| HCM 6th LOS | F |

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

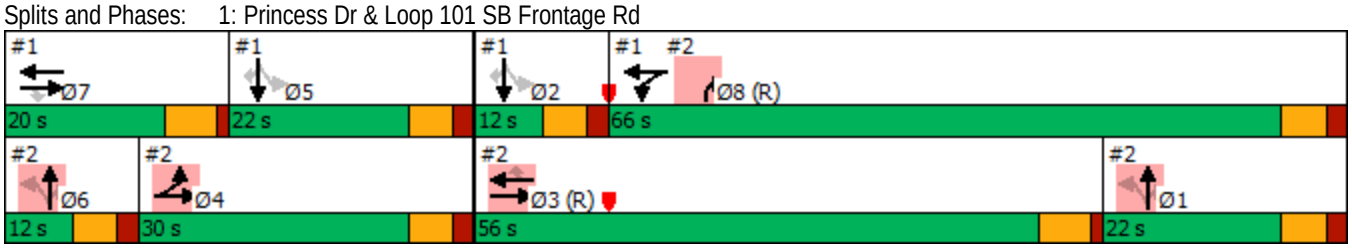
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 177 | 83 | 1253 | 445 | 0 | 0 | 0 | 0 | 569 | 637 | 247 |
| Future Volume (vph) | 0 | 177 | 83 | 1253 | 445 | 0 | 0 | 0 | 0 | 569 | 637 | 247 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 140 | | 245 | 240 | | 0 | 0 | | 0 | 355 | | 355 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 2 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 0.88 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.996 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.990 | |
| Satd. Flow (prot) | 0 | 5085 | 2787 | 3433 | 5085 | 0 | 0 | 0 | 0 | 1610 | 3159 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.990 | |
| Satd. Flow (perm) | 0 | 5085 | 2787 | 3433 | 5085 | 0 | 0 | 0 | 0 | 1610 | 3159 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 188 | | | | | | | | 2 | 237 |
| Link Speed (mph) | | 35 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 1345 | | | 409 | | | 1261 | | | 718 | |
| Travel Time (s) | | 26.2 | | | 6.2 | | | 28.7 | | | 10.9 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.25 | 0.25 | 0.25 | 0.94 | 0.94 | 0.94 |
| Adj. Flow (vph) | 0 | 186 | 87 | 1319 | 468 | 0 | 0 | 0 | 0 | 605 | 678 | 263 |
| Shared Lane Traffic (%) | | | | | | | | | | 29% | | 10% |
| Lane Group Flow (vph) | 0 | 186 | 87 | 1319 | 468 | 0 | 0 | 0 | 0 | 430 | 879 | 237 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 36 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 2 5 | |
| Permitted Phases | | | 7 | | | | | | | 2 5 | | 2 5 |

| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | | | | | | |
| Future Volume (vph) | | | | | | |
| Ideal Flow (vphpl) | | | | | | |
| Storage Length (ft) | | | | | | |
| Storage Lanes | | | | | | |
| Taper Length (ft) | | | | | | |
| Lane Util. Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | | | | | | |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | | | | | | |
| Right Turn on Red | | | | | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | | | | | |
| Link Distance (ft) | | | | | | |
| Travel Time (s) | | | | | | |
| Peak Hour Factor | | | | | | |
| Adj. Flow (vph) | | | | | | |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | | | | | | |
| Enter Blocked Intersection | | | | | | |
| Lane Alignment | | | | | | |
| Median Width(ft) | | | | | | |
| Link Offset(ft) | | | | | | |
| Crosswalk Width(ft) | | | | | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | | | | | | |
| Turning Speed (mph) | | | | | | |
| Number of Detectors | | | | | | |
| Detector Template | | | | | | |
| Leading Detector (ft) | | | | | | |
| Trailing Detector (ft) | | | | | | |
| Detector 1 Position(ft) | | | | | | |
| Detector 1 Size(ft) | | | | | | |
| Detector 1 Type | | | | | | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | | | | | | |
| Detector 1 Queue (s) | | | | | | |
| Detector 1 Delay (s) | | | | | | |
| Detector 2 Position(ft) | | | | | | |
| Detector 2 Size(ft) | | | | | | |
| Detector 2 Type | | | | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | | | | |
| Turn Type | | | | | | |
| Protected Phases | 1 | 2 | 3 | 4 | 5 | 6 |
| Permitted Phases | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 7 | 7 | 8 | 7 8 | | | | | 2 5 | 2 5 | 2 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 7.0 | 7.0 | 5.0 | | | | | | | | |
| Minimum Split (s) | | 26.7 | 26.7 | 11.0 | | | | | | | | |
| Total Split (s) | | 20.0 | 20.0 | 66.0 | | | | | | | | |
| Total Split (%) | | 16.7% | 16.7% | 55.0% | | | | | | | | |
| Maximum Green (s) | | 14.3 | 14.3 | 60.0 | | | | | | | | |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | | | | | | | | |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | | | | | | | | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | | | | | | | | |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | | | | | | | | |
| Lead/Lag | | Lead | Lead | Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | | | | | | | | |
| Recall Mode | | None | None | C-Min | | | | | | | | |
| Walk Time (s) | | 4.0 | 4.0 | | | | | | | | | |
| Flash Dont Walk (s) | | 17.0 | 17.0 | | | | | | | | | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | | | | | | | | |
| Act Effct Green (s) | | 9.6 | 9.6 | 60.0 | 75.6 | | | | | 32.7 | 32.7 | 32.7 |
| Actuated g/C Ratio | | 0.08 | 0.08 | 0.50 | 0.63 | | | | | 0.27 | 0.27 | 0.27 |
| v/c Ratio | | 0.46 | 0.22 | 0.77 | 0.15 | | | | | 0.98 | 1.02 | 0.42 |
| Control Delay | | 55.9 | 1.3 | 18.3 | 0.9 | | | | | 82.9 | 79.3 | 7.0 |
| Queue Delay | | 0.0 | 0.0 | 4.1 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 55.9 | 1.3 | 22.4 | 0.9 | | | | | 82.9 | 79.3 | 7.0 |
| LOS | | E | A | C | A | | | | | F | E | A |
| Approach Delay | | 38.5 | | | 16.8 | | | | | | 69.2 | |
| Approach LOS | | D | | | B | | | | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 47 (39%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.09 | | | |
| Intersection Signal Delay: 40.9 | | Intersection LOS: D | |
| Intersection Capacity Utilization 97.7% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Princess Dr & Loop 101 SB Frontage Rd



| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Detector Phase | | | | | | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 10.0 | 5.0 | 7.0 | 1.0 |
| Minimum Split (s) | 13.0 | 7.0 | 26.7 | 11.0 | 50.0 | 7.0 |
| Total Split (s) | 22.0 | 12.0 | 56.0 | 30.0 | 22.0 | 12.0 |
| Total Split (%) | 18% | 10% | 47% | 25% | 18% | 10% |
| Maximum Green (s) | 16.0 | 6.0 | 50.3 | 24.0 | 16.0 | 6.0 |
| Yellow Time (s) | 4.0 | 4.0 | 4.7 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | | | | | |
| Total Lost Time (s) | | | | | | |
| Lead/Lag | Lag | Lead | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 5.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | C-Min | None | None | None |
| Walk Time (s) | | | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | | 17.0 | | 40.0 | |
| Pedestrian Calls (#/hr) | | | 0 | | 0 | |
| Act Effct Green (s) | | | | | | |
| Actuated g/C Ratio | | | | | | |
| v/c Ratio | | | | | | |
| Control Delay | | | | | | |
| Queue Delay | | | | | | |
| Total Delay | | | | | | |
| LOS | | | | | | |
| Approach Delay | | | | | | |
| Approach LOS | | | | | | |

| Intersection Summary |
|---|

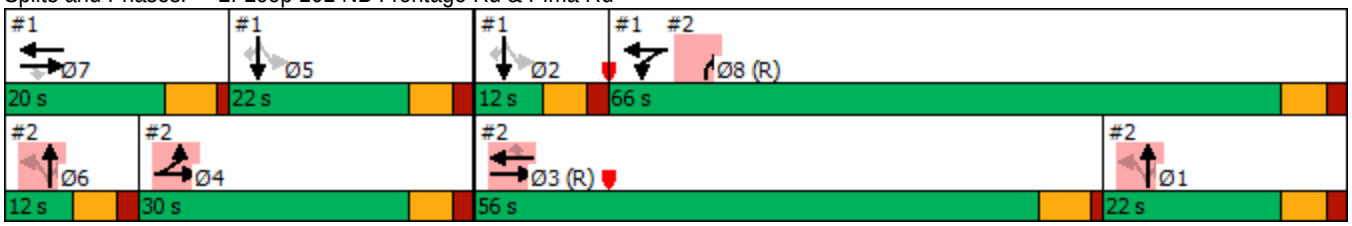
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 28 | 687 | 0 | 0 | 1376 | 348 | 369 | 419 | 1113 | 0 | 0 | 0 |
| Future Volume (vph) | 28 | 687 | 0 | 0 | 1376 | 348 | 369 | 419 | 1113 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 265 | | 0 | 350 | | 285 | 275 | | 275 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 1 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.86 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.989 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3353 | 1583 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.989 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3353 | 1583 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 374 | | | 247 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 409 | | | 1059 | | | 1353 | | | 527 | |
| Travel Time (s) | | 6.2 | | | 16.0 | | | 20.5 | | | 12.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.93 | 0.93 | 0.93 | 0.98 | 0.98 | 0.98 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 31 | 763 | 0 | 0 | 1480 | 374 | 377 | 428 | 1136 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 31% | | | | | |
| Lane Group Flow (vph) | 31 | 763 | 0 | 0 | 1480 | 374 | 260 | 545 | 1136 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | L NA | Right | Left | Left | Right | Left | Left | R NA | Left | Left | Right |
| Median Width(ft) | | 24 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | custom | | | |
| Protected Phases | 4 | 3 4! | | | 3 | | | 1 6 | 8! | | | |
| Permitted Phases | | | | | | 3 | 1 6 | | 1 6 | | | |

| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 |
|---|---|---|---|---|---|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | | | | | |
| Future Volume (vph) | | | | | |
| Ideal Flow (vphpl) | | | | | |
| Storage Length (ft) | | | | | |
| Storage Lanes | | | | | |
| Taper Length (ft) | | | | | |
| Lane Util. Factor | | | | | |
| Frt | | | | | |
| Flt Protected | | | | | |
| Satd. Flow (prot) | | | | | |
| Flt Permitted | | | | | |
| Satd. Flow (perm) | | | | | |
| Right Turn on Red | | | | | |
| Satd. Flow (RTOR) | | | | | |
| Link Speed (mph) | | | | | |
| Link Distance (ft) | | | | | |
| Travel Time (s) | | | | | |
| Peak Hour Factor | | | | | |
| Adj. Flow (vph) | | | | | |
| Shared Lane Traffic (%) | | | | | |
| Lane Group Flow (vph) | | | | | |
| Enter Blocked Intersection | | | | | |
| Lane Alignment | | | | | |
| Median Width(ft) | | | | | |
| Link Offset(ft) | | | | | |
| Crosswalk Width(ft) | | | | | |
| Two way Left Turn Lane | | | | | |
| Headway Factor | | | | | |
| Turning Speed (mph) | | | | | |
| Number of Detectors | | | | | |
| Detector Template | | | | | |
| Leading Detector (ft) | | | | | |
| Trailing Detector (ft) | | | | | |
| Detector 1 Position(ft) | | | | | |
| Detector 1 Size(ft) | | | | | |
| Detector 1 Type | | | | | |
| Detector 1 Channel | | | | | |
| Detector 1 Extend (s) | | | | | |
| Detector 1 Queue (s) | | | | | |
| Detector 1 Delay (s) | | | | | |
| Detector 2 Position(ft) | | | | | |
| Detector 2 Size(ft) | | | | | |
| Detector 2 Type | | | | | |
| Detector 2 Channel | | | | | |
| Detector 2 Extend (s) | | | | | |
| Turn Type | | | | | |
| Protected Phases | 1 | 2 | 5 | 6 | 7 |
| Permitted Phases | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 4 | 3 4 | | | 3 | 3 | 1 6 | 1 6 | 8 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 10.0 | 10.0 | | | 5.0 | | | |
| Minimum Split (s) | 11.0 | | | | 26.7 | 26.7 | | | 11.0 | | | |
| Total Split (s) | 30.0 | | | | 56.0 | 56.0 | | | 66.0 | | | |
| Total Split (%) | 25.0% | | | | 46.7% | 46.7% | | | 55.0% | | | |
| Maximum Green (s) | 24.0 | | | | 50.3 | 50.3 | | | 60.0 | | | |
| Yellow Time (s) | 4.0 | | | | 4.7 | 4.7 | | | 4.0 | | | |
| All-Red Time (s) | 2.0 | | | | 1.0 | 1.0 | | | 2.0 | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | 0.0 | | | 0.0 | | | |
| Total Lost Time (s) | 6.0 | | | | 5.7 | 5.7 | | | 6.0 | | | |
| Lead/Lag | Lag | | | | Lead | Lead | | | Lag | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 5.0 | 5.0 | | | 2.0 | | | |
| Recall Mode | None | | | | C-Min | C-Min | | | C-Min | | | |
| Walk Time (s) | | | | | 4.0 | 4.0 | | | | | | |
| Flash Dont Walk (s) | | | | | 17.0 | 17.0 | | | | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | 0 | | | | | | |
| Act Effct Green (s) | 24.3 | 80.6 | | | 50.3 | 50.3 | 27.7 | 27.7 | 71.7 | | | |
| Actuated g/C Ratio | 0.20 | 0.67 | | | 0.42 | 0.42 | 0.23 | 0.23 | 0.60 | | | |
| v/c Ratio | 0.09 | 0.32 | | | 0.55 | 0.42 | 0.70 | 0.70 | 1.09 | | | |
| Control Delay | 40.9 | 1.7 | | | 27.3 | 3.8 | 53.6 | 48.0 | 75.0 | | | |
| Queue Delay | 0.0 | 1.1 | | | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 40.9 | 2.8 | | | 27.4 | 3.8 | 53.6 | 48.0 | 75.0 | | | |
| LOS | D | A | | | C | A | D | D | E | | | |
| Approach Delay | | 4.3 | | | 22.7 | | | 64.5 | | | | |
| Approach LOS | | A | | | C | | | E | | | | |

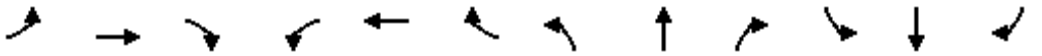
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 47 (39%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.09 | | | |
| Intersection Signal Delay: 37.2 | | Intersection LOS: D | |
| Intersection Capacity Utilization 97.7% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |
| ! Phase conflict between lane groups. | | | |

Splits and Phases: 2: Loop 101 NB Frontage Rd & Pima Rd



| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 |
|---|---|---|---|---|---|
| Detector Phase | | | | | |
| Switch Phase | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 7.0 | 1.0 | 7.0 |
| Minimum Split (s) | 13.0 | 7.0 | 50.0 | 7.0 | 26.7 |
| Total Split (s) | 22.0 | 12.0 | 22.0 | 12.0 | 20.0 |
| Total Split (%) | 18% | 10% | 18% | 10% | 17% |
| Maximum Green (s) | 16.0 | 6.0 | 16.0 | 6.0 | 14.3 |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.7 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 1.0 |
| Lost Time Adjust (s) | | | | | |
| Total Lost Time (s) | | | | | |
| Lead/Lag | Lag | Lead | Lag | Lead | Lead |
| Lead-Lag Optimize? | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | None | None | None |
| Walk Time (s) | | | 4.0 | | 4.0 |
| Flash Dont Walk (s) | | | 40.0 | | 17.0 |
| Pedestrian Calls (#/hr) | | | 0 | | 0 |
| Act Effct Green (s) | | | | | |
| Actuated g/C Ratio | | | | | |
| v/c Ratio | | | | | |
| Control Delay | | | | | |
| Queue Delay | | | | | |
| Total Delay | | | | | |
| LOS | | | | | |
| Approach Delay | | | | | |
| Approach LOS | | | | | |

| Intersection Summary |
|---|



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 320 | 119 | 487 | 507 | 0 | 0 | 0 | 0 | 583 | 155 | 41 |
| Future Volume (vph) | 0 | 320 | 119 | 487 | 507 | 0 | 0 | 0 | 0 | 583 | 155 | 41 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 240 | | 315 | 220 | | 0 | 0 | | 0 | 385 | | 385 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.999 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.969 | |
| Satd. Flow (prot) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3101 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.969 | |
| Satd. Flow (perm) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3101 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 145 | | | | | | | | | 92 |
| Link Speed (mph) | | 45 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 824 | | | 389 | | | 598 | | | 1243 | |
| Travel Time (s) | | 12.5 | | | 5.9 | | | 13.6 | | | 18.8 | |
| Peak Hour Factor | 0.82 | 0.82 | 0.82 | 0.89 | 0.89 | 0.89 | 0.25 | 0.25 | 0.25 | 0.85 | 0.85 | 0.85 |
| Adj. Flow (vph) | 0 | 390 | 145 | 547 | 570 | 0 | 0 | 0 | 0 | 686 | 182 | 48 |
| Shared Lane Traffic (%) | | | | | | | | | | 50% | | 10% |
| Lane Group Flow (vph) | 0 | 390 | 145 | 547 | 570 | 0 | 0 | 0 | 0 | 343 | 530 | 43 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | | | | | 2 | |
| Permitted Phases | | | 8 | | | | | | | 2 | | 2 |

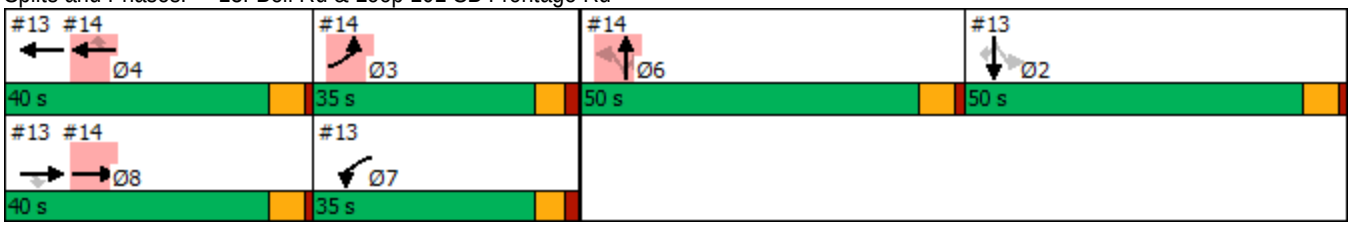
| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 3 | 6 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 8 | 8 | 7 | 4 | | | | | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 10.0 | 10.0 | 5.0 | 10.0 | | | | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | | 35.7 | 35.7 | 11.0 | 39.7 | | | | | 50.9 | 50.9 | 50.9 |
| Total Split (s) | | 40.0 | 40.0 | 35.0 | 40.0 | | | | | 50.0 | 50.0 | 50.0 |
| Total Split (%) | | 22.9% | 22.9% | 20.0% | 22.9% | | | | | 28.6% | 28.6% | 28.6% |
| Maximum Green (s) | | 34.3 | 34.3 | 29.0 | 34.3 | | | | | 44.1 | 44.1 | 44.1 |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | 4.7 | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | 1.0 | | | | | 1.2 | 1.2 | 1.2 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | 5.7 | | | | | 5.9 | 5.9 | 5.9 |
| Lead/Lag | | Lead | Lead | Lag | Lead | | | | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | 2.0 | 2.0 | 2.0 |
| Recall Mode | | Min | Min | None | None | | | | | None | None | None |
| Walk Time (s) | | 7.0 | 7.0 | | 8.0 | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 23.0 | 23.0 | | 26.0 | | | | | 38.0 | 38.0 | 38.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 34.8 | 34.8 | 28.0 | 31.0 | | | | | 36.8 | 36.8 | 36.8 |
| Actuated g/C Ratio | | 0.23 | 0.23 | 0.18 | 0.20 | | | | | 0.24 | 0.24 | 0.24 |
| v/c Ratio | | 0.34 | 0.31 | 0.88 | 0.80 | | | | | 0.89 | 0.89dl | 0.10 |
| Control Delay | | 53.4 | 9.7 | 80.2 | 39.8 | | | | | 82.6 | 60.3 | 0.5 |
| Queue Delay | | 0.5 | 0.0 | 7.9 | 0.2 | | | | | 17.1 | 1.0 | 0.0 |
| Total Delay | | 53.9 | 9.7 | 88.1 | 40.0 | | | | | 99.8 | 61.3 | 0.5 |
| LOS | | D | A | F | D | | | | | F | E | A |
| Approach Delay | | 42.0 | | | 63.6 | | | | | | 72.9 | |
| Approach LOS | | D | | | E | | | | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 154 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.22 | | | |
| Intersection Signal Delay: 62.4 | | Intersection LOS: E | |
| Intersection Capacity Utilization 66.6% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 13: Bell Rd & Loop 101 SB Frontage Rd



| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 5.0 | 7.0 |
| Minimum Split (s) | 11.0 | 48.0 |
| Total Split (s) | 35.0 | 50.0 |
| Total Split (%) | 20% | 29% |
| Maximum Green (s) | 29.0 | 44.0 |
| Yellow Time (s) | 4.0 | 4.7 |
| All-Red Time (s) | 2.0 | 1.3 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lead |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | Min | None |
| Walk Time (s) | | 7.0 |
| Flash Dont Walk (s) | | 35.0 |
| Pedestrian Calls (#/hr) | | 0 |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|

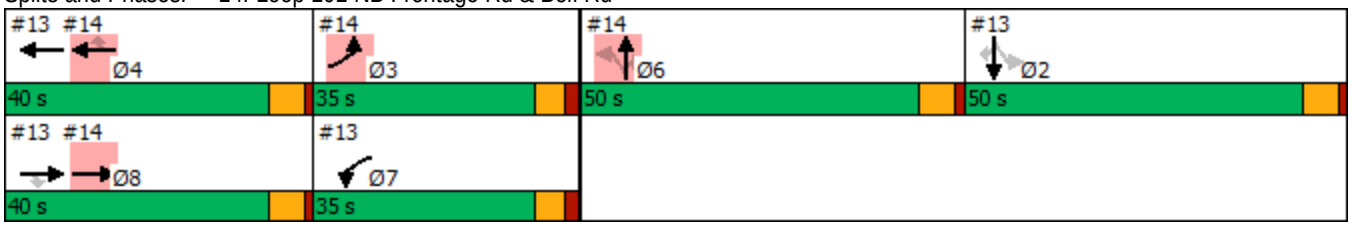
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 15 | 888 | 0 | 0 | 615 | 339 | 379 | 185 | 321 | 0 | 0 | 0 |
| Future Volume (vph) | 15 | 888 | 0 | 0 | 615 | 339 | 379 | 185 | 321 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 220 | | 0 | 235 | | 175 | 310 | | 310 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.86 | 1.00 | 0.91 | 0.86 | 0.91 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | 0.962 | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.984 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3033 | 1441 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.984 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3033 | 1441 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 381 | | 22 | 226 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 389 | | | 797 | | | 655 | | | 579 | |
| Travel Time (s) | | 5.9 | | | 12.1 | | | 9.9 | | | 13.2 | |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.89 | 0.89 | 0.89 | 0.91 | 0.91 | 0.91 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 16 | 976 | 0 | 0 | 691 | 381 | 416 | 203 | 353 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 40% | | 36% | | | |
| Lane Group Flow (vph) | 16 | 976 | 0 | 0 | 691 | 381 | 250 | 496 | 226 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | Perm | | | |
| Protected Phases | 3 | 8 | | | 4 | | | 6 | | | | |
| Permitted Phases | | | | | | 4 | 6 | | 6 | | | |

| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 2 | 7 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 3 | 8 | | | 4 | 4 | 6 | 6 | 6 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | | | 10.0 | 10.0 | 7.0 | 7.0 | 7.0 | | | |
| Minimum Split (s) | 11.0 | 35.7 | | | 39.7 | 39.7 | 48.0 | 48.0 | 48.0 | | | |
| Total Split (s) | 35.0 | 40.0 | | | 40.0 | 40.0 | 50.0 | 50.0 | 50.0 | | | |
| Total Split (%) | 20.0% | 22.9% | | | 22.9% | 22.9% | 28.6% | 28.6% | 28.6% | | | |
| Maximum Green (s) | 29.0 | 34.3 | | | 34.3 | 34.3 | 44.0 | 44.0 | 44.0 | | | |
| Yellow Time (s) | 4.0 | 4.7 | | | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 2.0 | 1.0 | | | 1.0 | 1.0 | 1.3 | 1.3 | 1.3 | | | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 6.0 | 5.7 | | | 5.7 | 5.7 | 6.0 | 6.0 | 6.0 | | | |
| Lead/Lag | Lag | Lead | | | Lead | Lead | Lead | Lead | Lead | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Recall Mode | Min | Min | | | None | None | None | None | None | | | |
| Walk Time (s) | | 7.0 | | | 8.0 | 8.0 | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | 23.0 | | | 26.0 | 26.0 | 35.0 | 35.0 | 35.0 | | | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 31.8 | 34.8 | | | 31.0 | 31.0 | 30.5 | 30.5 | 30.5 | | | |
| Actuated g/C Ratio | 0.21 | 0.23 | | | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | | | |
| v/c Ratio | 0.04 | 1.22 | | | 0.54 | 0.61 | 0.79 | 0.80 | 0.48 | | | |
| Control Delay | 53.1 | 138.1 | | | 57.7 | 9.6 | 77.1 | 67.2 | 9.5 | | | |
| Queue Delay | 0.0 | 0.1 | | | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 53.1 | 138.2 | | | 57.9 | 9.6 | 77.1 | 67.2 | 9.5 | | | |
| LOS | D | F | | | E | A | E | E | A | | | |
| Approach Delay | | 136.8 | | | 40.7 | | | 56.3 | | | | |
| Approach LOS | | F | | | D | | | E | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 154 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.22 | | | |
| Intersection Signal Delay: 77.1 | | Intersection LOS: E | |
| Intersection Capacity Utilization 66.6% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Loop 101 NB Frontage Rd & Bell Rd



| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 7.0 | 5.0 |
| Minimum Split (s) | 50.9 | 11.0 |
| Total Split (s) | 50.0 | 35.0 |
| Total Split (%) | 29% | 20% |
| Maximum Green (s) | 44.1 | 29.0 |
| Yellow Time (s) | 4.7 | 4.0 |
| All-Red Time (s) | 1.2 | 2.0 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lag |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | None | None |
| Walk Time (s) | 7.0 | |
| Flash Dont Walk (s) | 38.0 | |
| Pedestrian Calls (#/hr) | 0 | |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|

# Existing PM
# Traffic Capacity Analysis

| Intersection | |
|---|---|
| Int Delay, s/veh | 12.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 97 | 35 | 1534 | 113 | 9 | 1555 |
| Future Vol, veh/h | 97 | 35 | 1534 | 113 | 9 | 1555 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 200 | 0 | - | 100 | 80 | - |
| Veh in Median Storage, # | 1 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 78 | 78 | 94 | 94 | 85 | 85 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 124 | 45 | 1632 | 120 | 11 | 1829 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2386 | 816 | 0 | 0 | 1752 | 0 |
| Stage 1 | 1632 | - | - | - | - | - |
| Stage 2 | 754 | - | - | - | - | - |
| Critical Hdwy | 5.74 | 7.14 | - | - | 5.34 | - |
| Critical Hdwy Stg 1 | 6.64 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.04 | - | - | - | - | - |
| Follow-up Hdwy | 3.82 | 3.92 | - | - | 3.12 | - |
| Pot Cap-1 Maneuver | ~ 58 | 275 | - | - | 167 | - |
| Stage 1 | ~ 98 | - | - | - | - | - |
| Stage 2 | 386 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 54 | 275 | - | - | 167 | - |
| Mov Cap-2 Maneuver | ~ 84 | - | - | - | - | - |
| Stage 1 | ~ 98 | - | - | - | - | - |
| Stage 2 | 361 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 267.5 | 0 | 0.2 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 84 | 275 | 167 | - |
| HCM Lane V/C Ratio | - | - | 1.48 | 0.163 | 0.063 | - |
| HCM Control Delay (s) | - | - | $ 356.6 | 20.6 | 28 | - |
| HCM Lane LOS | - | - | F | C | D | - |
| HCM 95th %tile Q(veh) | - | - | 9.8 | 0.6 | 0.2 | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 9.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 8 | 67 | 75 | 1 | 57 | 1 | 62 | 1 | 1 | 1 | 1 | 6 |
| Future Vol, veh/h | 8 | 67 | 75 | 1 | 57 | 1 | 62 | 1 | 1 | 1 | 1 | 6 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 125 | - | - | - | 150 | - | - | 160 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 10 | 84 | 94 | 1 | 71 | 1 | 78 | 1 | 1 | 1 | 1 | 8 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 201 | 165 | 5 | 254 | 169 | 2 | 9 | 0 | 0 | 2 | 0 | 0 |
| Stage 1 | 7 | 7 | - | 158 | 158 | - | - | - | - | - | - | - |
| Stage 2 | 194 | 158 | - | 96 | 11 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 757 | 728 | 1078 | 699 | 724 | 1082 | 1611 | - | - | 1620 | - | - |
| Stage 1 | 1015 | 890 | - | 844 | 767 | - | - | - | - | - | - | - |
| Stage 2 | 808 | 767 | - | 911 | 886 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 671 | 692 | 1078 | 558 | 689 | 1082 | 1611 | - | - | 1620 | - | - |
| Mov Cap-2 Maneuver | 671 | 692 | - | 558 | 689 | - | - | - | - | - | - | - |
| Stage 1 | 966 | 889 | - | 803 | 730 | - | - | - | - | - | - | - |
| Stage 2 | 693 | 730 | - | 753 | 885 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 9.9 | 10.8 | 7.1 | 0.9 |
| HCM LOS | A | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1611 | - | - | 690 | 1078 | 691 | 1620 | - | - |
| HCM Lane V/C Ratio | 0.048 | - | - | 0.136 | 0.087 | 0.107 | 0.001 | - | - |
| HCM Control Delay (s) | 7.3 | - | - | 11 | 8.7 | 10.8 | 7.2 | - | - |
| HCM Lane LOS | A | - | - | B | A | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0.5 | 0.3 | 0.4 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 6.6 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1136 | 15 | 5 | 812 | 32 | 17 |
| Future Vol, veh/h | 1136 | 15 | 5 | 812 | 32 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 150 | 60 | - | 100 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 81 | 81 | 79 | 79 | 52 | 52 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1402 | 19 | 6 | 1028 | 62 | 33 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1421 | 0 | 1928 | 701 |
| Stage 1 | - | - | - | - | 1402 | - |
| Stage 2 | - | - | - | - | 526 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 475 | - | ~ 58 | 381 |
| Stage 1 | - | - | - | - | 193 | - |
| Stage 2 | - | - | - | - | 557 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 475 | - | ~ 57 | 381 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 57 | - |
| Stage 1 | - | - | - | - | 193 | - |
| Stage 2 | - | - | - | - | 550 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 176.5 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 57 | 381 | - | - | 475 | - |
| HCM Lane V/C Ratio | 1.08 | 0.086 | - | - | 0.013 | - |
| HCM Control Delay (s) | 262.2 | 15.3 | - | - | 12.7 | - |
| HCM Lane LOS | F | C | - | - | B | - |
| HCM 95th %tile Q(veh) | 5.1 | 0.3 | - | - | 0 | - |

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

| Phase Number | 4 | 6 | 7 | 8 |
|---|---|---|---|---|
| Movement | WBTL | NBL | WBL | EBT |
| Lead/Lag | | | Lag | Lead |
| Lead-Lag Optimize | | | | |
| Recall Mode | C-Max | None | None | C-Max |
| Maximum Split (s) | 90 | 30 | 18 | 72 |
| Maximum Split (%) | 75.0% | 25.0% | 15.0% | 60.0% |
| Minimum Split (s) | 22.5 | 37.3 | 11 | 38.7 |
| Yellow Time (s) | 4.7 | 3.3 | 4 | 4.7 |
| All-Red Time (s) | 1.2 | 2 | 2 | 1 |
| Minimum Initial (s) | 10 | 7 | 5 | 10 |
| Vehicle Extension (s) | 2 | 2 | 2 | 2 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 |
| Walk Time (s) | | 8 | | 8 |
| Flash Dont Walk (s) | | 24 | | 24 |
| Dual Entry | Yes | Yes | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes |
| Start Time (s) | 40.7 | 10.7 | 112.7 | 40.7 |
| End Time (s) | 10.7 | 40.7 | 10.7 | 112.7 |
| Yield/Force Off (s) | 4.8 | 35.4 | 4.7 | 107 |
| Yield/Force Off 170(s) | 4.8 | 11.4 | 4.7 | 83 |
| Local Start Time (s) | 53.7 | 23.7 | 5.7 | 53.7 |
| Local Yield (s) | 17.8 | 48.4 | 17.7 | 0 |
| Local Yield 170(s) | 17.8 | 24.4 | 17.7 | 96 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 90 |
| Offset: 107 (89%), Referenced to phase 4:WBTL and 8:EBT, Start of Yellow | |

Splits and Phases: 16: 91st Street & Bell Rd

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1100 | 53 | 37 | 664 | 153 | 61 |
| Future Volume (veh/h) | 1100 | 53 | 37 | 664 | 153 | 61 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1358 | 45 | 44 | 781 | 259 | 72 |
| Peak Hour Factor | 0.81 | 0.81 | 0.85 | 0.85 | 0.59 | 0.59 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 1963 | 876 | 536 | 2883 | 326 | 150 |
| Arrive On Green | 0.55 | 0.55 | 0.21 | 0.81 | 0.09 | 0.09 |
| Sat Flow, veh/h | 3647 | 1585 | 1781 | 3647 | 3456 | 1585 |
| Grp Volume(v), veh/h | 1358 | 45 | 44 | 781 | 259 | 72 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1585 | 1781 | 1777 | 1728 | 1585 |
| Q Serve(g_s), s | 33.2 | 1.6 | 0.0 | 6.4 | 8.8 | 5.2 |
| Cycle Q Clear(g_c), s | 33.2 | 1.6 | 0.0 | 6.4 | 8.8 | 5.2 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 1963 | 876 | 536 | 2883 | 326 | 150 |
| V/C Ratio(X) | 0.69 | 0.05 | 0.08 | 0.27 | 0.79 | 0.48 |
| Avail Cap(c_a), veh/h | 1963 | 876 | 536 | 2883 | 711 | 326 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.4 | 12.4 | 19.0 | 2.7 | 53.2 | 51.5 |
| Incr Delay (d2), s/veh | 2.0 | 0.1 | 0.0 | 0.2 | 1.7 | 0.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 18.9 | 1.0 | 1.3 | 2.6 | 7.0 | 8.1 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 21.5 | 12.5 | 19.0 | 3.0 | 54.9 | 52.4 |
| LnGrp LOS | C | B | B | A | D | D |
| Approach Vol, veh/h | 1403 | | | 825 | 331 | |
| Approach Delay, s/veh | 21.2 | | | 3.8 | 54.3 | |
| Approach LOS | C | | | A | D | |

| Timer - Assigned Phs | 4 | 6 | 7 | 8 |
|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 103.4 | 16.6 | 31.4 | 72.0 |
| Change Period (Y+Rc), s | * 6 | 5.3 | 6.0 | 5.7 |
| Max Green Setting (Gmax), s | * 84 | 24.7 | 12.0 | 66.3 |
| Max Q Clear Time (g_c+I1), s | 8.4 | 10.8 | 2.0 | 35.2 |
| Green Ext Time (p_c), s | 3.4 | 0.5 | 0.0 | 7.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 19.9 |
| HCM 6th LOS | B |

Notes

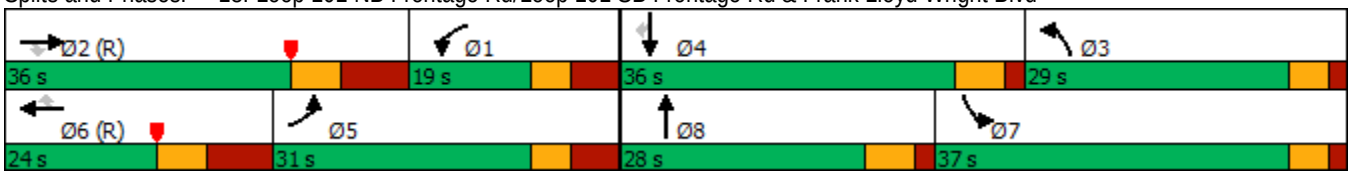
User approved pedestrian interval to be less than phase max green.

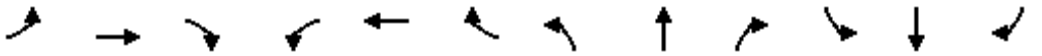
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

| Phase Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Movement | WBL | EBT | NBL | SBT | EBL | WBT | SBL | NBT |
| Lead/Lag | Lag | Lead | Lag | Lead | Lag | Lead | Lag | Lead |
| Lead-Lag Optimize | | | | | | | | |
| Recall Mode | None | C-Min | None | None | None | C-Min | None | None |
| Maximum Split (s) | 19 | 36 | 29 | 36 | 31 | 24 | 37 | 28 |
| Maximum Split (%) | 15.8% | 30.0% | 24.2% | 30.0% | 25.8% | 20.0% | 30.8% | 23.3% |
| Minimum Split (s) | 13.1 | 34.4 | 10.4 | 50.2 | 13.1 | 31.4 | 10.4 | 48.2 |
| Yellow Time (s) | 3.6 | 4.4 | 3.6 | 4.4 | 3.6 | 4.4 | 3.6 | 4.4 |
| All-Red Time (s) | 4.5 | 6 | 1.8 | 1.8 | 4.5 | 6 | 1.8 | 1.8 |
| Minimum Initial (s) | 5 | 10 | 5 | 10 | 5 | 10 | 5 | 10 |
| Vehicle Extension (s) | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Walk Time (s) | | 4 | | 4 | | 4 | | 4 |
| Flash Dont Walk (s) | | 20 | | 40 | | 17 | | 38 |
| Dual Entry | Yes | Yes | No | Yes | No | Yes | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Start Time (s) | 113.4 | 77.4 | 48.4 | 12.4 | 101.4 | 77.4 | 40.4 | 12.4 |
| End Time (s) | 12.4 | 113.4 | 77.4 | 48.4 | 12.4 | 101.4 | 77.4 | 40.4 |
| Yield/Force Off (s) | 4.3 | 103 | 72 | 42.2 | 4.3 | 91 | 72 | 34.2 |
| Yield/Force Off 170(s) | 4.3 | 83 | 72 | 2.2 | 4.3 | 74 | 72 | 116.2 |
| Local Start Time (s) | 22.4 | 106.4 | 77.4 | 41.4 | 10.4 | 106.4 | 69.4 | 41.4 |
| Local Yield (s) | 33.3 | 12 | 101 | 71.2 | 33.3 | 0 | 101 | 63.2 |
| Local Yield 170(s) | 33.3 | 112 | 101 | 31.2 | 33.3 | 103 | 101 | 25.2 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 130 |
| Offset: 91 (76%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow | |

Splits and Phases: 18: Loop 101 NB Frontage Rd/Loop 101 SB Frontage Rd & Frank Lloyd Wright Blvd





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 615 | 930 | 822 | 342 | 422 | 916 | 727 | 576 | 142 | 739 | 701 | 323 |
| Future Volume (veh/h) | 615 | 930 | 822 | 342 | 422 | 916 | 727 | 576 | 142 | 739 | 701 | 323 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 641 | 969 | 0 | 389 | 480 | 0 | 773 | 613 | 151 | 812 | 770 | 355 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.88 | 0.88 | 0.88 | 0.94 | 0.94 | 0.94 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 694 | 1060 | | 357 | 562 | | 680 | 702 | 170 | 923 | 859 | 383 |
| Arrive On Green | 0.20 | 0.21 | 0.00 | 0.10 | 0.11 | 0.00 | 0.20 | 0.17 | 0.17 | 0.27 | 0.24 | 0.24 |
| Sat Flow, veh/h | 3456 | 5106 | 1585 | 3456 | 5106 | 2790 | 3456 | 4103 | 993 | 3456 | 3554 | 1585 |
| Grp Volume(v), veh/h | 641 | 969 | 0 | 389 | 480 | 0 | 773 | 507 | 257 | 812 | 770 | 355 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1702 | 1585 | 1728 | 1702 | 1395 | 1728 | 1702 | 1692 | 1728 | 1777 | 1585 |
| Q Serve(g_s), s | 21.8 | 22.3 | 0.0 | 12.4 | 11.1 | 0.0 | 23.6 | 17.4 | 17.8 | 27.0 | 25.2 | 26.3 |
| Cycle Q Clear(g_c), s | 21.8 | 22.3 | 0.0 | 12.4 | 11.1 | 0.0 | 23.6 | 17.4 | 17.8 | 27.0 | 25.2 | 26.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.59 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 694 | 1060 | | 357 | 562 | | 680 | 583 | 290 | 923 | 859 | 383 |
| V/C Ratio(X) | 0.92 | 0.91 | | 1.09 | 0.85 | | 1.14 | 0.87 | 0.89 | 0.88 | 0.90 | 0.93 |
| Avail Cap(c_a), veh/h | 694 | 1089 | | 357 | 579 | | 680 | 618 | 307 | 923 | 882 | 394 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 47.0 | 46.5 | 0.0 | 53.8 | 52.5 | 0.0 | 48.2 | 48.4 | 48.6 | 42.1 | 44.1 | 44.5 |
| Incr Delay (d2), s/veh | 17.8 | 13.4 | 0.0 | 74.2 | 15.2 | 0.0 | 79.0 | 11.5 | 23.7 | 9.4 | 11.2 | 26.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 16.2 | 15.7 | 0.0 | 14.3 | 9.2 | 0.0 | 25.7 | 12.8 | 14.2 | 18.0 | 17.7 | 18.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 64.8 | 59.9 | 0.0 | 128.0 | 67.7 | 0.0 | 127.2 | 59.9 | 72.3 | 51.5 | 55.3 | 71.3 |
| LnGrp LOS | E | E | | F | E | | F | E | E | D | E | E |
| Approach Vol, veh/h | | 1610 | | | 869 | | | 1537 | | | 1937 | |
| Approach Delay, s/veh | | 61.9 | | | 94.7 | | | 95.8 | | | 56.7 | |
| Approach LOS | | E | | | F | | | F | | | E | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 20.5 | 35.3 | 29.0 | 35.2 | 32.2 | 23.6 | 37.5 | 26.7 |
| Change Period (Y+Rc), s | * 8.1 | * 10 | * 5.4 | * 6.2 | * 8.1 | * 10 | * 5.4 | * 6.2 |
| Max Green Setting (Gmax), s | * 11 | * 26 | * 24 | * 30 | * 23 | * 14 | * 32 | * 22 |
| Max Q Clear Time (g_c+I1), s | 14.4 | 24.3 | 25.6 | 28.3 | 23.8 | 13.1 | 29.0 | 19.8 |
| Green Ext Time (p_c), s | 0.0 | 0.6 | 0.0 | 0.7 | 0.0 | 0.1 | 0.6 | 0.7 |

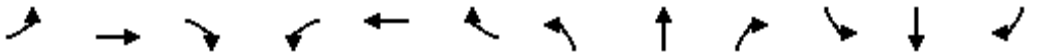
| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 73.7 |
| HCM 6th LOS | | E |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



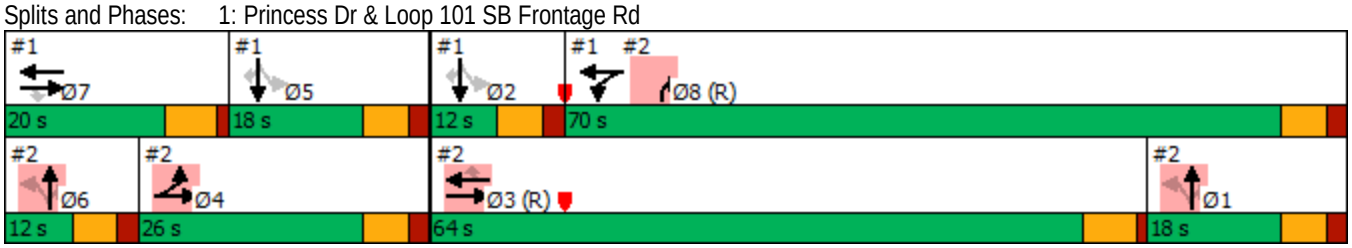
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 391 | 356 | 1066 | 296 | 0 | 0 | 0 | 0 | 380 | 376 | 65 |
| Future Volume (vph) | 0 | 391 | 356 | 1066 | 296 | 0 | 0 | 0 | 0 | 380 | 376 | 65 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 140 | | 245 | 240 | | 0 | 0 | | 0 | 355 | | 355 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 2 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 0.88 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.998 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.987 | |
| Satd. Flow (prot) | 0 | 5085 | 2787 | 3433 | 5085 | 0 | 0 | 0 | 0 | 1610 | 3156 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.987 | |
| Satd. Flow (perm) | 0 | 5085 | 2787 | 3433 | 5085 | 0 | 0 | 0 | 0 | 1610 | 3156 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 188 | | | | | | | | 1 | 185 |
| Link Speed (mph) | | 35 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 1345 | | | 409 | | | 1261 | | | 718 | |
| Travel Time (s) | | 26.2 | | | 6.2 | | | 28.7 | | | 10.9 | |
| Peak Hour Factor | 0.82 | 0.82 | 0.82 | 0.97 | 0.97 | 0.97 | 0.25 | 0.25 | 0.25 | 0.91 | 0.91 | 0.91 |
| Adj. Flow (vph) | 0 | 477 | 434 | 1099 | 305 | 0 | 0 | 0 | 0 | 418 | 413 | 71 |
| Shared Lane Traffic (%) | | | | | | | | | | 35% | | 10% |
| Lane Group Flow (vph) | 0 | 477 | 434 | 1099 | 305 | 0 | 0 | 0 | 0 | 272 | 566 | 64 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 36 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 2 5 | |
| Permitted Phases | | | 7 | | | | | | | 2 5 | | 2 5 |

| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | | | | | | |
| Future Volume (vph) | | | | | | |
| Ideal Flow (vphpl) | | | | | | |
| Storage Length (ft) | | | | | | |
| Storage Lanes | | | | | | |
| Taper Length (ft) | | | | | | |
| Lane Util. Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | | | | | | |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | | | | | | |
| Right Turn on Red | | | | | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | | | | | |
| Link Distance (ft) | | | | | | |
| Travel Time (s) | | | | | | |
| Peak Hour Factor | | | | | | |
| Adj. Flow (vph) | | | | | | |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | | | | | | |
| Enter Blocked Intersection | | | | | | |
| Lane Alignment | | | | | | |
| Median Width(ft) | | | | | | |
| Link Offset(ft) | | | | | | |
| Crosswalk Width(ft) | | | | | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | | | | | | |
| Turning Speed (mph) | | | | | | |
| Number of Detectors | | | | | | |
| Detector Template | | | | | | |
| Leading Detector (ft) | | | | | | |
| Trailing Detector (ft) | | | | | | |
| Detector 1 Position(ft) | | | | | | |
| Detector 1 Size(ft) | | | | | | |
| Detector 1 Type | | | | | | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | | | | | | |
| Detector 1 Queue (s) | | | | | | |
| Detector 1 Delay (s) | | | | | | |
| Detector 2 Position(ft) | | | | | | |
| Detector 2 Size(ft) | | | | | | |
| Detector 2 Type | | | | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | | | | |
| Turn Type | | | | | | |
| Protected Phases | 1 | 2 | 3 | 4 | 5 | 6 |
| Permitted Phases | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 7 | 7 | 8 | 7 8 | | | | | 2 5 | 2 5 | 2 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 7.0 | 7.0 | 5.0 | | | | | | | | |
| Minimum Split (s) | | 26.7 | 26.7 | 11.0 | | | | | | | | |
| Total Split (s) | | 20.0 | 20.0 | 70.0 | | | | | | | | |
| Total Split (%) | | 16.7% | 16.7% | 58.3% | | | | | | | | |
| Maximum Green (s) | | 14.3 | 14.3 | 64.0 | | | | | | | | |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | | | | | | | | |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | | | | | | | | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | | | | | | | | |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | | | | | | | | |
| Lead/Lag | | Lead | Lead | Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | | | | | | | | |
| Recall Mode | | None | None | C-Min | | | | | | | | |
| Walk Time (s) | | 4.0 | 4.0 | | | | | | | | | |
| Flash Dont Walk (s) | | 17.0 | 17.0 | | | | | | | | | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | | | | | | | | |
| Act Effct Green (s) | | 14.1 | 14.1 | 64.0 | 84.1 | | | | | 24.2 | 24.2 | 24.2 |
| Actuated g/C Ratio | | 0.12 | 0.12 | 0.53 | 0.70 | | | | | 0.20 | 0.20 | 0.20 |
| v/c Ratio | | 0.80 | 0.88 | 0.60 | 0.09 | | | | | 0.84 | 0.89 | 0.15 |
| Control Delay | | 62.7 | 49.6 | 11.8 | 0.9 | | | | | 68.7 | 63.6 | 0.7 |
| Queue Delay | | 0.0 | 0.0 | 0.4 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 62.7 | 49.6 | 12.2 | 0.9 | | | | | 68.7 | 63.6 | 0.7 |
| LOS | | E | D | B | A | | | | | E | E | A |
| Approach Delay | | 56.5 | | | 9.8 | | | | | | 60.7 | |
| Approach LOS | | E | | | A | | | | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 23 (19%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.03 | | | |
| Intersection Signal Delay: 37.3 | | Intersection LOS: D | |
| Intersection Capacity Utilization 92.2% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Princess Dr & Loop 101 SB Frontage Rd



| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Detector Phase | | | | | | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 10.0 | 5.0 | 7.0 | 1.0 |
| Minimum Split (s) | 13.0 | 7.0 | 26.7 | 11.0 | 50.0 | 7.0 |
| Total Split (s) | 18.0 | 12.0 | 64.0 | 26.0 | 18.0 | 12.0 |
| Total Split (%) | 15% | 10% | 53% | 22% | 15% | 10% |
| Maximum Green (s) | 12.0 | 6.0 | 58.3 | 20.0 | 12.0 | 6.0 |
| Yellow Time (s) | 4.0 | 4.0 | 4.7 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | | | | | |
| Total Lost Time (s) | | | | | | |
| Lead/Lag | Lag | Lead | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 5.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | C-Min | None | None | None |
| Walk Time (s) | | | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | | 17.0 | | 40.0 | |
| Pedestrian Calls (#/hr) | | | 0 | | 0 | |
| Act Effct Green (s) | | | | | | |
| Actuated g/C Ratio | | | | | | |
| v/c Ratio | | | | | | |
| Control Delay | | | | | | |
| Queue Delay | | | | | | |
| Total Delay | | | | | | |
| LOS | | | | | | |
| Approach Delay | | | | | | |
| Approach LOS | | | | | | |

| Intersection Summary |
|---|

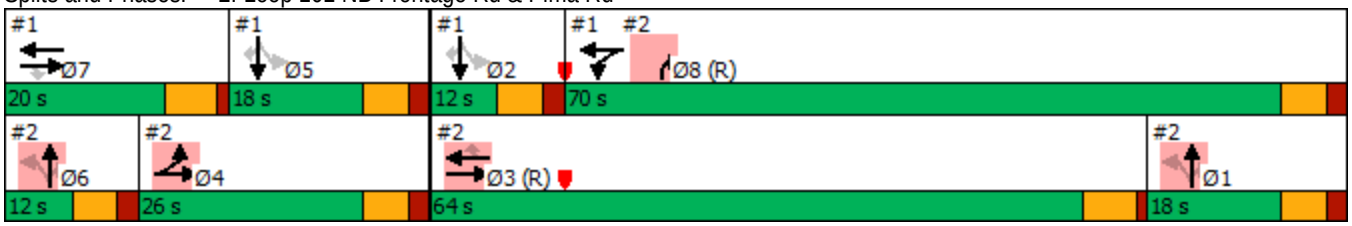
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 229 | 549 | 0 | 0 | 1215 | 450 | 149 | 515 | 1086 | 0 | 0 | 0 |
| Future Volume (vph) | 229 | 549 | 0 | 0 | 1215 | 450 | 149 | 515 | 1086 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 265 | | 0 | 350 | | 285 | 275 | | 275 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 1 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.86 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.999 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3387 | 1583 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.999 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3387 | 1583 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 188 | | | 368 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 409 | | | 1059 | | | 1353 | | | 527 | |
| Travel Time (s) | | 6.2 | | | 16.0 | | | 20.5 | | | 12.0 | |
| Peak Hour Factor | 0.93 | 0.93 | 0.93 | 0.95 | 0.95 | 0.95 | 0.93 | 0.93 | 0.93 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 246 | 590 | 0 | 0 | 1279 | 474 | 160 | 554 | 1168 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 10% | | | | | |
| Lane Group Flow (vph) | 246 | 590 | 0 | 0 | 1279 | 474 | 144 | 570 | 1168 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | L NA | Right | Left | Left | Right | Left | Left | R NA | Left | Left | Right |
| Median Width(ft) | | 24 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | custom | | | |
| Protected Phases | 4 | 3 4! | | | 3 | | | 1 6 | 8! | | | |
| Permitted Phases | | | | | | 3 | 1 6 | | 1 6 | | | |

| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 |
|---|---|---|---|---|---|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | | | | | |
| Future Volume (vph) | | | | | |
| Ideal Flow (vphpl) | | | | | |
| Storage Length (ft) | | | | | |
| Storage Lanes | | | | | |
| Taper Length (ft) | | | | | |
| Lane Util. Factor | | | | | |
| Frt | | | | | |
| Flt Protected | | | | | |
| Satd. Flow (prot) | | | | | |
| Flt Permitted | | | | | |
| Satd. Flow (perm) | | | | | |
| Right Turn on Red | | | | | |
| Satd. Flow (RTOR) | | | | | |
| Link Speed (mph) | | | | | |
| Link Distance (ft) | | | | | |
| Travel Time (s) | | | | | |
| Peak Hour Factor | | | | | |
| Adj. Flow (vph) | | | | | |
| Shared Lane Traffic (%) | | | | | |
| Lane Group Flow (vph) | | | | | |
| Enter Blocked Intersection | | | | | |
| Lane Alignment | | | | | |
| Median Width(ft) | | | | | |
| Link Offset(ft) | | | | | |
| Crosswalk Width(ft) | | | | | |
| Two way Left Turn Lane | | | | | |
| Headway Factor | | | | | |
| Turning Speed (mph) | | | | | |
| Number of Detectors | | | | | |
| Detector Template | | | | | |
| Leading Detector (ft) | | | | | |
| Trailing Detector (ft) | | | | | |
| Detector 1 Position(ft) | | | | | |
| Detector 1 Size(ft) | | | | | |
| Detector 1 Type | | | | | |
| Detector 1 Channel | | | | | |
| Detector 1 Extend (s) | | | | | |
| Detector 1 Queue (s) | | | | | |
| Detector 1 Delay (s) | | | | | |
| Detector 2 Position(ft) | | | | | |
| Detector 2 Size(ft) | | | | | |
| Detector 2 Type | | | | | |
| Detector 2 Channel | | | | | |
| Detector 2 Extend (s) | | | | | |
| Turn Type | | | | | |
| Protected Phases | 1 | 2 | 5 | 6 | 7 |
| Permitted Phases | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 4 | 3 4 | | | 3 | 3 | 1 6 | 1 6 | 8 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 10.0 | 10.0 | | | 5.0 | | | |
| Minimum Split (s) | 11.0 | | | | 26.7 | 26.7 | | | 11.0 | | | |
| Total Split (s) | 26.0 | | | | 64.0 | 64.0 | | | 70.0 | | | |
| Total Split (%) | 21.7% | | | | 53.3% | 53.3% | | | 58.3% | | | |
| Maximum Green (s) | 20.0 | | | | 58.3 | 58.3 | | | 64.0 | | | |
| Yellow Time (s) | 4.0 | | | | 4.7 | 4.7 | | | 4.0 | | | |
| All-Red Time (s) | 2.0 | | | | 1.0 | 1.0 | | | 2.0 | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | 0.0 | | | 0.0 | | | |
| Total Lost Time (s) | 6.0 | | | | 5.7 | 5.7 | | | 6.0 | | | |
| Lead/Lag | Lag | | | | Lead | Lead | | | Lag | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 5.0 | 5.0 | | | 2.0 | | | |
| Recall Mode | None | | | | C-Min | C-Min | | | C-Min | | | |
| Walk Time (s) | | | | | 4.0 | 4.0 | | | | | | |
| Flash Dont Walk (s) | | | | | 17.0 | 17.0 | | | | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | 0 | | | | | | |
| Act Effct Green (s) | 20.0 | 84.1 | | | 58.0 | 58.0 | 24.2 | 24.2 | 76.0 | | | |
| Actuated g/C Ratio | 0.17 | 0.70 | | | 0.48 | 0.48 | 0.20 | 0.20 | 0.63 | | | |
| v/c Ratio | 0.83 | 0.24 | | | 0.41 | 0.55 | 0.44 | 0.83 | 1.03 | | | |
| Control Delay | 51.7 | 3.1 | | | 20.4 | 15.1 | 47.1 | 57.9 | 50.3 | | | |
| Queue Delay | 0.0 | 0.9 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 51.7 | 4.0 | | | 20.5 | 15.1 | 47.1 | 57.9 | 50.3 | | | |
| LOS | D | A | | | C | B | D | E | D | | | |
| Approach Delay | | 18.0 | | | 19.0 | | | 52.4 | | | | |
| Approach LOS | | B | | | B | | | D | | | | |

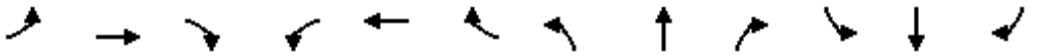
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 23 (19%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.03 | | | |
| Intersection Signal Delay: 32.9 | | Intersection LOS: C | |
| Intersection Capacity Utilization 92.2% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |
| ! Phase conflict between lane groups. | | | |

Splits and Phases: 2: Loop 101 NB Frontage Rd & Pima Rd



| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 |
|---|---|---|---|---|---|
| Detector Phase | | | | | |
| Switch Phase | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 7.0 | 1.0 | 7.0 |
| Minimum Split (s) | 13.0 | 7.0 | 50.0 | 7.0 | 26.7 |
| Total Split (s) | 18.0 | 12.0 | 18.0 | 12.0 | 20.0 |
| Total Split (%) | 15% | 10% | 15% | 10% | 17% |
| Maximum Green (s) | 12.0 | 6.0 | 12.0 | 6.0 | 14.3 |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.7 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 1.0 |
| Lost Time Adjust (s) | | | | | |
| Total Lost Time (s) | | | | | |
| Lead/Lag | Lag | Lead | Lag | Lead | Lead |
| Lead-Lag Optimize? | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | None | None | None |
| Walk Time (s) | | | 4.0 | | 4.0 |
| Flash Dont Walk (s) | | | 40.0 | | 17.0 |
| Pedestrian Calls (#/hr) | | | 0 | | 0 |
| Act Effct Green (s) | | | | | |
| Actuated g/C Ratio | | | | | |
| v/c Ratio | | | | | |
| Control Delay | | | | | |
| Queue Delay | | | | | |
| Total Delay | | | | | |
| LOS | | | | | |
| Approach Delay | | | | | |
| Approach LOS | | | | | |

| Intersection Summary |
|---|



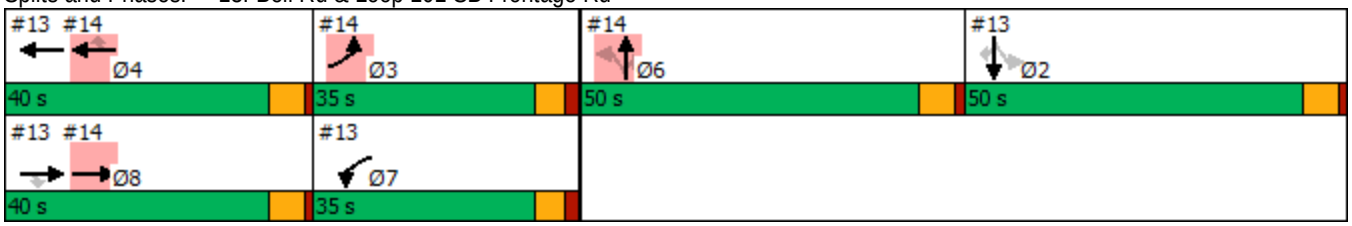
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 355 | 213 | 578 | 354 | 0 | 0 | 0 | 0 | 386 | 156 | 12 |
| Future Volume (vph) | 0 | 355 | 213 | 578 | 354 | 0 | 0 | 0 | 0 | 386 | 156 | 12 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 240 | | 315 | 220 | | 0 | 0 | | 0 | 385 | | 385 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.999 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.973 | |
| Satd. Flow (prot) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3114 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.973 | |
| Satd. Flow (perm) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3114 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 224 | | | | | | | | | 92 |
| Link Speed (mph) | | 45 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 824 | | | 389 | | | 598 | | | 1243 | |
| Travel Time (s) | | 12.5 | | | 5.9 | | | 13.6 | | | 18.8 | |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.78 | 0.78 | 0.78 | 0.25 | 0.25 | 0.25 | 0.80 | 0.80 | 0.80 |
| Adj. Flow (vph) | 0 | 374 | 224 | 741 | 454 | 0 | 0 | 0 | 0 | 483 | 195 | 15 |
| Shared Lane Traffic (%) | | | | | | | | | | 50% | | 10% |
| Lane Group Flow (vph) | 0 | 374 | 224 | 741 | 454 | 0 | 0 | 0 | 0 | 241 | 439 | 13 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | | | | | 2 | |
| Permitted Phases | | | 8 | | | | | | | 2 | | 2 |

| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 3 | 6 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 8 | 8 | 7 | 4 | | | | | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 10.0 | 10.0 | 5.0 | 10.0 | | | | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | | 35.7 | 35.7 | 11.0 | 39.7 | | | | | 50.9 | 50.9 | 50.9 |
| Total Split (s) | | 40.0 | 40.0 | 35.0 | 40.0 | | | | | 50.0 | 50.0 | 50.0 |
| Total Split (%) | | 22.9% | 22.9% | 20.0% | 22.9% | | | | | 28.6% | 28.6% | 28.6% |
| Maximum Green (s) | | 34.3 | 34.3 | 29.0 | 34.3 | | | | | 44.1 | 44.1 | 44.1 |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | 4.7 | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | 1.0 | | | | | 1.2 | 1.2 | 1.2 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | 5.7 | | | | | 5.9 | 5.9 | 5.9 |
| Lead/Lag | | Lead | Lead | Lag | Lead | | | | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | 2.0 | 2.0 | 2.0 |
| Recall Mode | | Min | Min | None | None | | | | | None | None | None |
| Walk Time (s) | | 7.0 | 7.0 | | 8.0 | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 23.0 | 23.0 | | 26.0 | | | | | 38.0 | 38.0 | 38.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 34.6 | 34.6 | 29.3 | 26.6 | | | | | 27.5 | 27.5 | 27.5 |
| Actuated g/C Ratio | | 0.23 | 0.23 | 0.20 | 0.18 | | | | | 0.18 | 0.18 | 0.18 |
| v/c Ratio | | 0.32 | 0.42 | 1.10 | 0.72 | | | | | 0.81 | 0.77 | 0.04 |
| Control Delay | | 50.8 | 8.7 | 122.4 | 35.1 | | | | | 80.7 | 67.7 | 0.2 |
| Queue Delay | | 0.4 | 0.0 | 0.9 | 0.1 | | | | | 0.9 | 0.3 | 0.0 |
| Total Delay | | 51.1 | 8.7 | 123.3 | 35.2 | | | | | 81.6 | 67.9 | 0.2 |
| LOS | | D | A | F | D | | | | | F | E | A |
| Approach Delay | | 35.3 | | | 89.8 | | | | | | 71.4 | |
| Approach LOS | | D | | | F | | | | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 149.6 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.10 | | | |
| Intersection Signal Delay: 71.6 | | Intersection LOS: E | |
| Intersection Capacity Utilization 54.8% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 13: Bell Rd & Loop 101 SB Frontage Rd



| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 5.0 | 7.0 |
| Minimum Split (s) | 11.0 | 48.0 |
| Total Split (s) | 35.0 | 50.0 |
| Total Split (%) | 20% | 29% |
| Maximum Green (s) | 29.0 | 44.0 |
| Yellow Time (s) | 4.0 | 4.7 |
| All-Red Time (s) | 2.0 | 1.3 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lead |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | Min | None |
| Walk Time (s) | | 7.0 |
| Flash Dont Walk (s) | | 35.0 |
| Pedestrian Calls (#/hr) | | 0 |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|

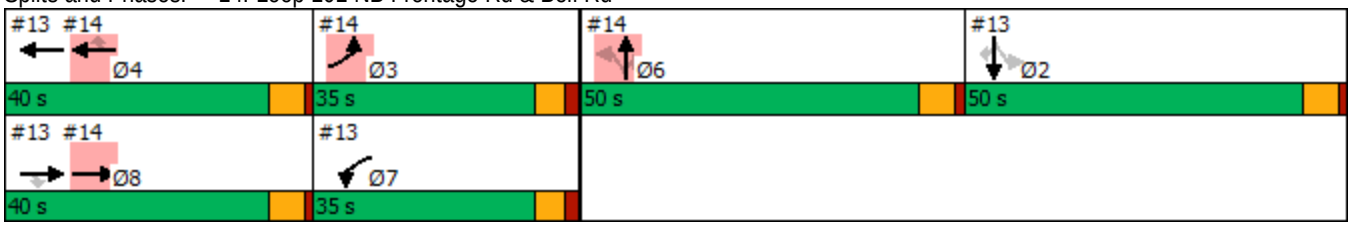
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 44 | 697 | 0 | 0 | 538 | 317 | 394 | 275 | 435 | 0 | 0 | 0 |
| Future Volume (vph) | 44 | 697 | 0 | 0 | 538 | 317 | 394 | 275 | 435 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 220 | | 0 | 235 | | 175 | 310 | | 310 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.86 | 1.00 | 0.91 | 0.86 | 0.91 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | 0.953 | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.990 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3023 | 1441 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.990 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3023 | 1441 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 406 | | 33 | 276 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 389 | | | 797 | | | 655 | | | 579 | |
| Travel Time (s) | | 5.9 | | | 12.1 | | | 9.9 | | | 13.2 | |
| Peak Hour Factor | 0.82 | 0.82 | 0.82 | 0.78 | 0.78 | 0.78 | 0.93 | 0.93 | 0.93 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 54 | 850 | 0 | 0 | 690 | 406 | 424 | 296 | 468 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 28% | | 41% | | | |
| Lane Group Flow (vph) | 54 | 850 | 0 | 0 | 690 | 406 | 305 | 607 | 276 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | Perm | | | |
| Protected Phases | 3 | 8 | | | 4 | | | 6 | | | | |
| Permitted Phases | | | | | | 4 | 6 | | 6 | | | |

| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 2 | 7 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 3 | 8 | | | 4 | 4 | 6 | 6 | 6 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | | | 10.0 | 10.0 | 7.0 | 7.0 | 7.0 | | | |
| Minimum Split (s) | 11.0 | 35.7 | | | 39.7 | 39.7 | 48.0 | 48.0 | 48.0 | | | |
| Total Split (s) | 35.0 | 40.0 | | | 40.0 | 40.0 | 50.0 | 50.0 | 50.0 | | | |
| Total Split (%) | 20.0% | 22.9% | | | 22.9% | 22.9% | 28.6% | 28.6% | 28.6% | | | |
| Maximum Green (s) | 29.0 | 34.3 | | | 34.3 | 34.3 | 44.0 | 44.0 | 44.0 | | | |
| Yellow Time (s) | 4.0 | 4.7 | | | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 2.0 | 1.0 | | | 1.0 | 1.0 | 1.3 | 1.3 | 1.3 | | | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 6.0 | 5.7 | | | 5.7 | 5.7 | 6.0 | 6.0 | 6.0 | | | |
| Lead/Lag | Lag | Lead | | | Lead | Lead | Lead | Lead | Lead | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Recall Mode | Min | Min | | | None | None | None | None | None | | | |
| Walk Time (s) | | 7.0 | | | 8.0 | 8.0 | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | 23.0 | | | 26.0 | 26.0 | 35.0 | 35.0 | 35.0 | | | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 37.4 | 34.6 | | | 26.6 | 26.6 | 34.3 | 34.3 | 34.3 | | | |
| Actuated g/C Ratio | 0.25 | 0.23 | | | 0.18 | 0.18 | 0.23 | 0.23 | 0.23 | | | |
| v/c Ratio | 0.12 | 1.04 | | | 0.61 | 0.66 | 0.83 | 0.85 | 0.51 | | | |
| Control Delay | 45.4 | 67.9 | | | 59.6 | 10.5 | 74.9 | 64.3 | 8.5 | | | |
| Queue Delay | 0.0 | 11.9 | | | 1.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 45.4 | 79.8 | | | 60.6 | 10.5 | 74.9 | 64.3 | 8.5 | | | |
| LOS | D | E | | | E | B | E | E | A | | | |
| Approach Delay | | 77.8 | | | 42.0 | | | 54.1 | | | | |
| Approach LOS | | E | | | D | | | D | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 149.6 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.10 | | | |
| Intersection Signal Delay: 56.6 | | Intersection LOS: E | |
| Intersection Capacity Utilization 54.8% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Loop 101 NB Frontage Rd & Bell Rd



| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 7.0 | 5.0 |
| Minimum Split (s) | 50.9 | 11.0 |
| Total Split (s) | 50.0 | 35.0 |
| Total Split (%) | 29% | 20% |
| Maximum Green (s) | 44.1 | 29.0 |
| Yellow Time (s) | 4.7 | 4.0 |
| All-Red Time (s) | 1.2 | 2.0 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lag |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | None | None |
| Walk Time (s) | 7.0 | |
| Flash Dont Walk (s) | 38.0 | |
| Pedestrian Calls (#/hr) | 0 | |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|

# City of Scottsdale Crash Data

# CITY OF SCOTTSDALE

# COLLISION SUMMARY

| REPORT # | DATE YYMMDD | TIME HHMM | NORTH / SOUTH ST. | TYPE | EAST WEST ST. | TYPE | DIR FROM | DIST FROM | INJ. SEV. | PHYS. COND. #1 | PHYS. COND. #2 | VIOLATION #1 | VIOLATION #2 | ACTION #1 | ACTION #2 | TRAV. DIR. #1 | TRAV. DIR. #2 | MANNER OF COLLISION | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1907737 | 190410 | 0843 | 101 | FY | BELL | RD | AT | | 1 | 0 | 0 | 13 | 1 | 4 | 4 | SB | SB | 6 | |
| 1911465 | 190528 | 1856 | 101 | FY | BELL | RD | E | 72 | 1 | 0 | 0 | 2 | 1 | 1 | 3 | WB | WB | 4 | |
| 1913133 | 190620 | 1510 | 101 | FY | BELL | RD | AT | | 1 | 0 | 0 | 0 | 1 | 1 | 3 | EB | EB | 4 | |
| 1915671 | 190726 | 1210 | 101 | FY | BELL | RD | AT | | 1 | 0 | 0 | 20 | 1 | 5 | 1 | NB | EB | 5 | |
| 1918988 | 190909 | 1233 | 101 | FY | BELL | RD | AT | | 1 | 0 | 0 | 4 | 1 | 1 | 3 | WB | WB | 4 | |
| 1922547 | 191028 | 1613 | 101 | FY | BELL | RD | AT | | 1 | 0 | 0 | 0 | 1 | 5 | 5 | WB | WB | 4 | |
| 1926656 | 191224 | 1550 | 101 | FY | BELL | RD | AT | | 3 | | 0 | 0 | 6 | 1 | 1 | EB | SB | 2 | |
| 2003673 | 200218 | 1758 | 101 | LP | BELL | RD | AT | | 1 | 99 | 99 | 12 | 1 | 8 | 1 | WB | WB | 2 | |
| 1900179 | 190103 | 1820 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 4 | 1 | 1 | SB | SB | 4 | MULTI VEH 3 |
| 1900546 | 190109 | 0147 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 4 | | 2 | | 1 | | SB | | 1 | |
| 1901160 | 190116 | 1650 | 101 | FY | FRANK LLOYD WRIGHT | BL | S | 600 | 1 | 0 | 0 | 2 | 1 | 1 | 3 | SB | SB | 4 | |
| 1901781 | 190124 | 1829 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 3 | 0 | 0 | 7 | 1 | 4 | 1 | NB | NB | 6 | |
| 1903055 | 190208 | 1042 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 12 | 1 | 8 | 1 | EB | EB | 2 | |
| 1903695 | 190216 | 2032 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 99 | 99 | 4 | 1 | SB | NB | 3 | |
| 1904897 | 190304 | 0933 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 6 | 1 | 1 | 1 | WB | SB | 2 | |
| 1904932 | 190304 | 1715 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 1 | 1 | NB | NB | 4 | |
| 1904970 | 190305 | 0920 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 97 | 1 | 4 | 4 | WB | WB | 4 | |
| 1906302 | 190322 | 1219 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 3 | 0 | 0 | 7 | 1 | 4 | 1 | EB | NB | 2 | |
| 1906558 | 190326 | 0845 | 101 | FY | FRANK LLOYD WRIGHT | BL | N | 500 | 1 | 0 | 0 | 99 | 99 | 8 | 8 | NB | NB | 6 | |
| 1906750 | 190328 | 1923 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 99 | 99 | 1 | 4 | NB | EB | 99 | |
| 1907061 | 190401 | 1907 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 7 | 1 | 4 | 1 | EB | NB | 3 | |
| 1907375 | 190405 | 1254 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 12 | 1 | 8 | 2 | WB | WB | 6 | |
| 1907535 | 190407 | 1421 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | | 2 | 0 | 6 | | WB | | 1 | |
| 1907780 | 190410 | 1642 | 101 | FY | FRANK LLOYD WRIGHT | BL | N | 130 | 1 | 0 | 0 | 4 | 1 | 5 | 5 | NB | NB | 4 | |
| 1908278 | 190417 | 1000 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 7 | 1 | 1 | 1 | EB | NB | 2 | |
| 1908795 | 190423 | 1208 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 2 | 3 | SB | SB | 4 | |
| 1909634 | 190504 | 0816 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 99 | 0 | 20 | 1 | 5 | 17 | NB | WB | 2 | |
| 1910343 | 190514 | 0709 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 2 | 3 | NB | NB | 4 | |
| 1910474 | 190515 | 1840 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 0 | 1 | 5 | 5 | WB | WB | 4 | |
| 1911119 | 190524 | 1139 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 6 | 1 | 4 | 1 | EB | NB | 2 | |
| 1911144 | 190524 | 1555 | 101 | FY | FRANK LLOYD WRIGHT | BL | E | 150 | 2 | 0 | 0 | 2 | 1 | 1 | 1 | WB | WB | 4 | |
| 1911209 | 190525 | 0809 | 101 | FY | FRANK LLOYD WRIGHT | BL | S | 184 | 1 | 99 | 0 | 2 | 1 | 2 | 3 | NB | NB | 4 | |
| 1911353 | 190527 | 1115 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 1 | 3 | SB | SB | 4 | |
| 1912028 | 190605 | 1158 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 6 | 1 | 4 | 1 | WB | SB | 2 | |
| 1915120 | 190718 | 2020 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 4 | 0 | 15 | 1 | 1 | 5 | NB | NB | 6 | |
| 1916377 | 190805 | 0950 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 3 | 0 | 0 | 7 | 1 | 1 | 1 | EB | NB | 3 | |

| REPORT # | DATE YYMMDD | TIME HHMM | NORTH / SOUTH ST. | TYPE | EAST WEST ST. | TYPE | DIR FROM | DIST FROM | INJ. SEV. | PHYS. COND. #1 | PHYS. COND. #2 | VIOLATION #1 | VIOLATION #2 | ACTION #1 | ACTION #2 | TRAV. DIR. #1 | TRAV. DIR. #2 | MANNER OF COLLISION | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1916476 | 190806 | 1428 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 12 | 1 | 8 | 4 | EB | NB | 6 | |
| 1917186 | 190816 | 1241 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 3 | 0 | 0 | 1 | 1 | 4 | 1 | EB | NB | 3 | |
| 1917754 | 190824 | 1141 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 1 | 3 | EB | EB | 4 | |
| 1918853 | 190907 | 1207 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 2 | | 0 | 0 | 4 | 1 | 1 | NB | NB | 4 | |
| 1920605 | 191002 | 1030 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 5 | 1 | SB | SB | 4 | |
| 1920634 | 191002 | 1647 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 5 | 5 | NB | NB | 4 | |
| 1920884 | 191005 | 2056 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 6 | 1 | 97 | 97 | NB | NB | 4 | |
| 1920912 | 191006 | 0928 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 2 | 1 | 5 | 3 | NB | NB | 4 | |
| 1922270 | 191025 | 0914 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 99 | 0 | 6 | 1 | 1 | 4 | NB | SB | 2 | |
| 1922942 | 191102 | 1704 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 6 | 1 | 1 | 1 | WB | SB | 2 | |
| 1923217 | 191106 | 1400 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 4 | 0 | 0 | 1 | 10 | 14 | EB | EB | 9 | |
| 1923744 | 191113 | 1234 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 4 | 1 | 1 | 2 | SB | SB | 4 | |
| 1923980 | 191116 | 1504 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 12 | 1 | 8 | 1 | SB | SB | 8 | |
| 1925220 | 191205 | 0848 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 7 | 1 | 4 | 1 | SB | NB | 2 | |
| 1926456 | 191221 | 1614 | 101 | WY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 12 | 1 | 8 | 1 | SB | SB | 4 | |
| 2001300 | 200118 | 1224 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 6 | 1 | 1 | 4 | SB | WB | 2 | |
| 2002551 | 200203 | 1010 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 4 | 1 | 5 | 5 | WB | WB | 4 | |
| 2002830 | 200207 | 1159 | 101 | FY | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 2 | 1 | 5 | 5 | NB | NB | 4 | |
| 2003150 | 200211 | 1634 | 101 | FY | FRANK LLOYD WRIGHT | BL | N | 400 | 1 | 0 | 0 | 12 | 1 | 1 | 1 | SB | SB | 6 | |
| 2003677 | 200218 | 1850 | 101 | LP | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | | 1 | 0 | 1 | | EB | | 1 | |
| 2004088 | 200224 | 1139 | 101 | LP | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 2 | 1 | 5 | 5 | WB | WB | 4 | |
| 2010646 | 200621 | 1311 | 101 | ST | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 7 | 1 | 4 | 3 | NW | SB | 6 | |
| 1922459 | 191027 | 1600 | 101 | FY | FRANK LLOYD WRITH | BL | AT | | 3 | 0 | 0 | 1 | 1 | 1 | 1 | EB | NB | 2 | |
| 1900524 | 190108 | 1820 | 101 | FY | PIMA | RD | AT | | 2 | 0 | 0 | 6 | 1 | 1 | 1 | WB | NB | 2 | |
| 1901168 | 190116 | 1901 | 101 | FY | PIMA | RD | N | 130 | 1 | 0 | 0 | 2 | 1 | 1 | 3 | SB | SB | 4 | |
| 1910385 | 190514 | 1628 | 101 | FY | PIMA | RD | AT | | 1 | 0 | 0 | 4 | 1 | 5 | 2 | NB | NB | 4 | |
| 1913611 | 190626 | 1555 | 101 | FY | PIMA | RD | AT | | 1 | 0 | 0 | 1 | 1 | 5 | 3 | NB | NB | 4 | |
| 1917131 | 190815 | 1848 | 101 | FY | PIMA | RD | AT | | 1 | 99 | 0 | 2 | 1 | 1 | 3 | SB | SB | 4 | |
| 1920122 | 190925 | 1233 | 101 | FY | PIMA | RD | N | 800 | 4 | 0 | 0 | 4 | 1 | 1 | 2 | SB | SB | 9 | |
| 1926556 | 191223 | 0748 | 101 | FY | PIMA | RD | W | 300 | 2 | 0 | 0 | 4 | 1 | 1 | 2 | WB | WB | 4 | |
| 1924728 | 191127 | 1459 | 101 | FY | PIMA FRONTAGE | RD | AT | | 1 | 0 | 0 | 12 | 1 | 1 | 1 | NB | NB | 6 | |
| 1901845 | 190125 | 1433 | 101 | FY | PRINCESS | DR | AT | | 1 | 0 | 0 | 2 | 1 | 1 | 3 | EB | EB | 4 | |
| 1902482 | 190201 | 1857 | 101 | FY | PRINCESS | DR | AT | | 2 | 0 | 0 | 6 | 1 | 1 | 1 | WB | SB | 2 | |
| 1902561 | 190202 | 1451 | 101 | FY | PRINCESS | DR | AT | | 1 | 0 | 0 | 20 | 1 | 5 | 4 | EB | SB | 6 | |
| 1904877 | 190303 | 2030 | 101 | FY | PRINCESS | DR | AT | | 1 | 0 | 0 | 6 | 1 | 1 | 1 | WB | NB | 2 | |
| 1904966 | 190305 | 0838 | 101 | FY | PRINCESS | DR | AT | | 1 | 0 | 0 | 2 | 1 | 5 | 3 | EB | EB | 4 | |
| 1905436 | 190311 | 0753 | 101 | FY | PRINCESS | DR | AT | | 1 | 0 | 0 | 2 | 1 | 1 | 1 | WB | WB | 4 | |
| 1907067 | 190401 | 2021 | 101 | FY | PRINCESS | DR | AT | | 1 | 0 | 0 | 6 | 1 | 1 | 1 | WB | NB | 2 | |

| REPORT # | DATE YYMMDD | TIME HHMM | NORTH / SOUTH ST. | TYPE | EAST WEST ST. | TYPE | DIR FROM | DIST FROM | INJ. SEV. | PHYS. COND. #1 | #2 | VIOLATION #1 | #2 | ACTION #1 | #2 | TRAV. DIR. #1 | #2 | MANNER OF COLLISION | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1908323 | 190417 | 1818 | 101 | FY | PRINCESS | DR | AT | | 3 | 0 | 0 | 6 | 1 | 1 | 1 | SB | NB | 2 | |
| 1911045 | 190523 | 1017 | 101 | FY | PRINCESS | DR | S | 50 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0N | NB | 97 | |
| 1912171 | 190607 | 0841 | 101 | FY | PRINCESS | DR | AT | | 2 | 0 | 0 | 6 | 1 | 1 | 1 | WB | NB | 2 | |
| 1918203 | 190830 | 1108 | 101 | FY | PRINCESS | DR | AT | | 1 | 0 | 0 | 20 | 1 | 5 | 1 | SB | SB | 2 | |
| 1918945 | 190908 | 1824 | 101 | FY | PRINCESS | DR | AT | | 2 | 0 | 0 | 2 | 1 | 1 | 3 | SB | SB | 4 | |
| 1920374 | 190928 | 1710 | 101 | FY | PRINCESS | DR | AT | | 1 | 4 | 0 | 4 | 1 | 1 | 1 | NB | NB | 4 | |
| 1920668 | 191003 | 1035 | 101 | FY | PRINCESS | DR | S | 300 | 1 | 0 | 0 | 12 | 1 | 8 | 1 | SB | SB | 6 | |
| 1920670 | 191003 | 1146 | 101 | FY | PRINCESS | DR | W | 20 | 1 | 0 | 0 | 4 | 1 | 5 | 3 | E0 | EB | 4 | |
| 1924181 | 191119 | 1421 | 101 | FY | PRINCESS | DR | N | 122 | 3 | 99 | 0 | 12 | 1 | 1 | 1 | NB | NB | 4 | |
| 2000417 | 200106 | 2016 | 101 | FY | PRINCESS | DR | AT | | 1 | 4 | 0 | 6 | 1 | 1 | 1 | SB | NB | 2 | |
| 1915564 | 190724 | 2237 | 101 FRINTAGE | DR | BELL | RD | S | 100 | 2 | 4 | | 2 | 0 | 4 | | WB | | 97 | |
| 1923596 | 191111 | 0833 | 101 FRONATGE | RD | BELL | RD | AT | | 1 | 0 | 0 | 7 | 1 | 4 | 1 | SB | SB | 6 | |
| 1906005 | 190318 | 1352 | 101 FRONATGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 5 | 3 | EB | EB | 4 | |
| 1914763 | 190713 | 0423 | 101 FRONATGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | | 13 | 0 | 1 | | SB | | 1 | |
| 1915018 | 190717 | 1028 | 101 FRONATGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 12 | 1 | 8 | 1 | EB | EB | 6 | |
| 1901853 | 190125 | 1623 | 101 FRONTAGE | RD | BELL | RD | AT | | 1 | 0 | 0 | 12 | 1 | 8 | 1 | NB | NB | 6 | |
| 1902352 | 190131 | 1504 | 101 FRONTAGE | RD | BELL | RD | AT | | 1 | 0 | 0 | 2 | 1 | 1 | 1 | NB | NB | 4 | |
| 1905109 | 190307 | 1008 | 101 FRONTAGE | RD | BELL | RD | N | 100 | 1 | 0 | 0 | 2 | 1 | 2 | 3 | SB | SB | 4 | |
| 1906323 | 190322 | 1733 | 101 FRONTAGE | RD | BELL | RD | AT | | 1 | 0 | 0 | 12 | 1 | 8 | 1 | NB | NB | 6 | |
| 1918761 | 190906 | 0736 | 101 FRONTAGE | RD | BELL | RD | AT | | 1 | 0 | 0 | 99 | 99 | 1 | 10 | WB | WB | 4 | |
| 1926850 | 191228 | 1224 | 101 FRONTAGE | RD | BELL | RD | N | 220 | 1 | 1 | | 99 | 0 | 1 | | NB | | 1 | |
| 2003675 | 200218 | 1842 | 101 FRONTAGE | RD | E FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 99 | 99 | 1 | 1 | WB | SB | 2 | |
| 1900210 | 190104 | 1114 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | S | 500 | 1 | 0 | 0 | 12 | 1 | 8 | 1 | SB | SB | 6 | |
| 1904474 | 190226 | 1645 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | S | 20 | 1 | 0 | 0 | 99 | 99 | 99 | 99 | SB | SB | 6 | |
| 1904544 | 190227 | 1548 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 5 | 5 | NB | NB | 4 | |
| 1905048 | 190306 | 0738 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 99 | 0 | 99 | 1 | 99 | 3 | EB | EB | 4 | |
| 1905217 | 190308 | 1633 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 20 | 1 | 5 | 1 | NB | NB | 2 | |
| 1905450 | 190311 | 1156 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 4 | 0 | 0 | 2 | 1 | 5 | 5 | NB | NB | 4 | |
| 1905576 | 190313 | 0627 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | S | 150 | 1 | 0 | 0 | 20 | 1 | 5 | 1 | SB | SB | 4 | |
| 1908990 | 190425 | 2350 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 4 | | 13 | 0 | 4 | | WB | | 1 | |
| 1909382 | 190501 | 1140 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | N | 260 | 1 | 0 | 0 | 2 | 1 | 2 | 3 | SB | SB | 4 | |
| 1910900 | 190521 | 0922 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 2 | 1 | 2 | 3 | NB | NB | 4 | |
| 1910904 | 190521 | 1036 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 3 | 0 | 0 | 99 | 1 | 1 | 1 | WB | SB | 2 | |
| 1911447 | 190528 | 1421 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | N | 147 | 1 | 0 | 0 | 7 | 1 | 5 | 1 | NB | NB | 2 | |
| 1912712 | 190614 | 1517 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 13 | 1 | 1 | 1 | NB | NB | 6 | |
| 1914596 | 190710 | 2011 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 2 | 4 | | 13 | 0 | 1 | | SB | | 1 | |
| 1914771 | 190713 | 1126 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | N | 25 | 1 | 0 | 0 | 2 | 1 | 5 | 3 | NB | NB | 4 | |
| 1916264 | 190803 | 1029 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 7 | 1 | 5 | 1 | SB | SB | 2 | |

| REPORT # | DATE YYMMDD | TIME HHMM | NORTH / SOUTH ST. | TYPE | EAST WEST ST. | TYPE | DIR FROM | DIST FROM | INJ. SEV. | PHYS. COND. #1 | PHYS. COND. #2 | VIOLATION #1 | VIOLATION #2 | ACTION #1 | ACTION #2 | TRAV. DIR. #1 | TRAV. DIR. #2 | MANNER OF COLLISION | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1916965 | 190813 | 1348 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 20 | 1 | 5 | 1 | NB | NB | 2 | |
| 1916980 | 190813 | 1652 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 1 | 3 | EB | EB | 4 | |
| 1918042 | 190828 | 1108 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 0 | 1 | 5 | 5 | WB | WB | 4 | |
| 1919050 | 190910 | 1614 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 1 | 3 | SB | SB | 4 | |
| 1920680 | 191003 | 1228 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 3 | 0 | 0 | 2 | 1 | 1 | 3 | NB | NB | 4 | |
| 1920754 | 191004 | 1132 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 20 | 1 | 5 | 1 | NB | NB | 2 | |
| 1920921 | 191006 | 1359 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | S | 1300 | 1 | 0 | 0 | 12 | 1 | 5 | 1 | SB | SB | 6 | |
| 1921044 | 191008 | 1245 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | S | 2600 | 1 | 0 | | 8 | 0 | 10 | | NB | | 1 | |
| 1921097 | 191009 | 0841 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 5 | 5 | NB | NB | 4 | |
| 1921173 | 191010 | 1000 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 4 | 1 | 1 | 1 | SB | SB | 4 | |
| 1921481 | 191014 | 1352 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 5 | 3 | SB | SB | 4 | |
| 1921591 | 191016 | 1150 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 99 | 2 | 99 | 5 | 3 | NB | NB | 4 | |
| 1922524 | 191028 | 1249 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | S | 1920 | 1 | 0 | 0 | 2 | 1 | 1 | 2 | SB | SB | 4 | |
| 1922816 | 191101 | 1046 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 20 | 1 | 5 | 1 | NB | NB | 2 | |
| 1923278 | 191107 | 0921 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 4 | 0 | 0 | 6 | 1 | 1 | 1 | EB | NB | 2 | |
| 1923804 | 191114 | 1121 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 12 | 1 | 8 | 1 | NB | NB | 2 | |
| 1925540 | 191209 | 1006 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 7 | 1 | 5 | 3 | NB | NB | 2 | |
| 1925779 | 191212 | 1732 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | N | 500 | 1 | 0 | 0 | 12 | 1 | 8 | 1 | SB | SB | 6 | |
| 1926872 | 191228 | 1805 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 13 | 1 | 1 | 1 | EB | EB | 6 | |
| 1911967 | 191604 | 1245 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 20 | 1 | 5 | 1 | SB | SB | 2 | |
| 2000092 | 200102 | 1049 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 3 | 0 | 0 | 4 | 1 | 5 | 3 | NB | NB | 4 | |
| 2000951 | 200113 | 1642 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 99 | 0 | 6 | 1 | 4 | 1 | EB | NB | 2 | |
| 2001254 | 200117 | 1906 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | N | 1400 | 1 | 0 | 0 | 4 | 1 | 1 | 1 | SB | SB | 4 | |
| 2001253 | 200117 | 1910 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 5 | 2 | NB | NB | 4 | |
| 2004153 | 200225 | 0957 | 101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 6 | 1 | 1 | 1 | WB | SB | 2 | |
| 2004659 | 200302 | 1638 | 101 FRONTAGE | LP | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 4 | 1 | 2 | 3 | NB | NB | 4 | |
| 1911931 | 190603 | 2130 | 101 FRONTAGE | RD | PRINCESS | DR | AT | | 2 | 0 | 0 | 6 | 1 | 1 | 1 | WB | NB | 2 | |
| 1926082 | 191216 | 1423 | 101 FRONTAGE | RD | PRINCESS | DR | AT | | 1 | 0 | 0 | 6 | 1 | 1 | 1 | WB | NB | 2 | |
| 1926616 | 191224 | 0620 | 101 FRONTAGE | RD | PRINCESS | DR | AT | | 1 | 0 | 0 | 2 | 1 | 4 | 4 | SB | SB | 5 | |
| 2005295 | 200311 | 0848 | 101 FRONTAGE RD | | PRINCESS | DR | AT | | 2 | 0 | 0 | 2 | 1 | 1 | 3 | SB | SB | 4 | |
| 1917112 | 190815 | 1409 | 101 NB FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | S | 500 | 1 | 0 | 0 | 20 | 1 | 5 | 1 | NB | NB | 2 | |
| 1920025 | 190924 | 1011 | 101 NB FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 7 | 1 | 4 | 4 | NB | SB | 6 | |
| 1920156 | 190925 | 1950 | 101 SB FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | S | 200 | 1 | 4 | | 13 | 0 | 1 | | SB | | 1 | |
| 1917171 | 190815 | 1410 | 101 SB FRONTAGE | RD | PRINCESS | DR | AT | | 1 | 99 | 0 | 13 | 1 | 4 | 4 | SB | SB | 6 | |
| 2109794 | 210519 | 1202 | 90 | ST | BELL | RD | | | 1 | 0 | 0 | 20 | 1 | 4 | 1 | NB | EB | 3 | |
| 2119427 | 211005 | 1157 | 90 | ST | BELL | RD | | | 1 | 0 | 0 | | 1 | 4 | 3 | NB | NB | 4 | |
| 2122874 | 211122 | 1319 | 90 | ST | BELL | RD | | | 2 | 0 | 0 | 7 | 1 | 4 | 1 | NB | EB | 3 | |
| 1904070 | 190221 | 1505 | 91 | ST | BELL | RD | W | 200 | 1 | 0 | 0 | 12 | 1 | 11 | 1 | WB | WB | 6 | |

| REPORT # | DATE YYMMDD | TIME HHMM | NORTH / SOUTH ST. | TYPE | EAST WEST ST. | TYPE | DIR FROM | DIST FROM | INJ. SEV. | PHYS. COND. #1 | #2 | VIOLATION #1 | #2 | ACTION #1 | #2 | TRAV. DIR. #1 | #2 | MANNER OF COLLISION | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1922135 | 191023 | 1108 | 91 | ST | BELL | RD | AT | | 1 | 0 | 0 | 1 | 1 | 1 | 4 | WB | NB | 6 | |
| 2001987 | 200127 | 1502 | 91 | ST | BELL | RD | AT | | 1 | 0 | 0 | 6 | 13 | 1 | 4 | WB | WB | 3 | |
| 2002291 | 200131 | 1507 | 91 | ST | BELL | RD | AT | | 2 | 0 | 0 | 4 | 1 | 1 | 3 | WB | WB | 4 | |
| 2111684 | 210614 | 1608 | 91 | ST | BELL | RD | | | 1 | 0 | 0 | 6 | 1 | 6 | 1 | WB | WB | 2 | |
| 2116165 | 210818 | 1506 | 91 | ST | BELL | RD | | | 1 | 0 | | 2 | | 4 | | WB | | 1 | |
| 2121354 | 211101 | 1104 | 91 | ST | BELL | RD | | | 1 | 0 | 0 | 20 | 1 | 5 | 1 | EB | EB | 4 | |
| 2216705 | 220823 | 0812 | 91 | ST | BELL | RD | | | 1 | 0 | 0 | 12 | 1 | 8 | 1 | EB | EB | 6 | |
| 2220605 | 221024 | 1510 | 91 | ST | BELL | RD | E | 278 | 2 | 0 | | 2 | | 5 | | WB | | 1 | |
| 2013559 | 200812 | 1248 | L101 | | BELL | RD | AT | | 3 | 0 | 0 | 6 | 1 | 1 | 1 | EB | SB | 2 | |
| 2013591 | 200812 | 2026 | L101 | | BELL | RD | AT | | 1 | 0 | 0 | 12 | 1 | 8 | 1 | WB | WB | 6 | |
| 2014520 | 200828 | 1606 | L101 | | BELL | RD | AT | | 2 | 0 | 0 | 99 | 99 | 4 | 1 | WB | EB | 3 | |
| 2015614 | 200915 | 1012 | L101 | | BELL | RD | AT | | 2 | 0 | 0 | 4 | 1 | 1 | 1 | SB | SB | 4 | |
| 2017678 | 201017 | 0904 | L101 | | BELL | RD | S | 325 | 1 | 0 | 0 | 20 | 1 | 5 | 1 | WB | NB | 6 | |
| 2021183 | 201209 | 1319 | L101 | | BELL | RD | AT | | 1 | 0 | 0 | 4 | 1 | 1 | 3 | SB | SB | 4 | |
| 2021557 | 201214 | 1437 | L101 | | BELL | RD | AT | | 1 | 0 | 0 | 99 | 99 | 4 | 1 | NB | NB | 6 | |
| 2106795 | 210408 | 1209 | L101 | RD | BELL | RD | AT | | 1 | 0 | 0 | 4 | 1 | 1 | 3 | WB | WB | 4 | |
| 2107303 | 210415 | 2344 | L101 | | BELL | RD | AT | | 1 | 4 | | 2 | | 5 | | WB | | 1 | |
| 2107794 | 210422 | 1641 | L101 | | BELL | RD | AT | | 2 | 0 | 0 | 4 | 1 | 5 | 5 | NB | NB | 4 | |
| 2112652 | 210628 | 1751 | L101 | | BELL | RD | | | 2 | 0 | 0 | | 1 | 1 | 3 | WB | WB | 4 | |
| 2119661 | 211008 | 1433 | L101 | | BELL | RD | | | 1 | 0 | 0 | 2 | 1 | 5 | 3 | NW | NW | 4 | |
| 2202964 | 220208 | 1022 | L101 | | BELL | | S | 2500 | 1 | 99 | 0 | 2 | 1 | 1 | 3 | SB | SB | 4 | |
| 2207415 | 220407 | 2250 | L101 | | BELL | RD | S | 1000 | 1 | 4 | 0 | 4 | 1 | 1 | 2 | SB | SB | 4 | |
| 2207479 | 220408 | 1220 | L101 | | BELL | RD | | | 1 | 99 | 0 | 2 | 1 | 1 | 3 | NB | NB | 4 | |
| 2207988 | 220415 | 0710 | L101 | | BELL | RD | | | 1 | 99 | 0 | 2 | 1 | 1 | 3 | WB | WB | 4 | |
| 2213863 | 220708 | 1324 | L101 | | BELL | RD | | | 1 | 0 | 0 | 2 | 1 | 5 | 5 | EB | EB | 4 | |
| 2214757 | 220722 | 1722 | L101 | | BELL | RD | W | 1900 | 1 | 0 | 0 | 12 | 1 | 8 | 1 | WB | WB | 6 | |
| 2216673 | 220822 | 1553 | L101 | | BELL | RD | | | 1 | 0 | 0 | 2 | 1 | 5 | 5 | NE | NE | 4 | |
| 2218504 | 220921 | 0432 | L101 | | BELL | RD | S | 164 | 1 | 0 | | 1 | | 11 | | SB | | 1 | |
| 2014437 | 200827 | 1209 | L101 | | FRANK LLOYD WIGHT | BL | AT | | 2 | 0 | 0 | 99 | 1 | 4 | 1 | SE | NB | 2 | |
| 2018386 | 201027 | 1358 | L101 | | FRANK LLOYD WIRGHT | BL | AT | | 2 | 0 | 0 | 99 | 99 | 1 | 4 | NB | SE | 2 | |
| 2006240 | 200329 | 1154 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 99 | 99 | 4 | 1 | NW | SB | 3 | |
| 2007639 | 200430 | 1440 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 1 | 1 | 8 | 1 | SB | SB | 6 | |
| 2009252 | 200528 | 1655 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 0 | 1 | 5 | 3 | SW | SW | 4 | |
| 2009559 | 200602 | 1443 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 5 | 3 | SE | SE | 4 | |
| 2010041 | 200611 | 1405 | L101 | | FRANK LLOYD WRIGHT | BL | W | 50 | 1 | 0 | 0 | 12 | 1 | 8 | 2 | EB | EB | 6 | |
| 2010148 | 200613 | 0804 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 4 | 1 | 5 | 3 | SB | SB | 4 | |
| 2010826 | 200624 | 0924 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 99 | 99 | 4 | 4 | SB | SB | 6 | |
| 2011015 | 200627 | 1926 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 14 | 1 | 1 | 1 | WB | SB | 2 | |

| REPORT # | DATE YYMMDD | TIME HHMM | NORTH / SOUTH ST. | TYPE | EAST WEST ST. | TYPE | DIR FROM | DIST FROM | INJ. SEV. | PHYS. COND. #1 | PHYS. COND. #2 | VIOLATION #1 | VIOLATION #2 | ACTION #1 | ACTION #2 | TRAV. DIR. #1 | TRAV. DIR. #2 | MANNER OF COLLISION | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2011265 | 200702 | 1307 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 12 | 1 | 8 | 1 | SB | SB | 6 | |
| 2011290 | 200703 | 0005 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | | 0 | 0 | 6 | | EB | | 1 | |
| 2011855 | 200713 | 0748 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 99 | 99 | 99 | 99 | NB | NB | 6 | |
| 2011941 | 200714 | 1439 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 6 | 1 | 4 | 1 | EB | NB | 3 | |
| 2012557 | 200725 | 1741 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 4 | 5 | 0 | 6 | 1 | 4 | 1 | NB | SB | 3 | |
| 2012817 | 200730 | 1727 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 1 | 1 | 1 | 5 | SB | SB | 4 | |
| 2012917 | 200801 | 0931 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 2 | 1 | 5 | 3 | NW | NW | 4 | |
| 2013114 | 200804 | 1829 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 99 | 0 | 4 | 1 | 1 | 1 | SB | SB | 4 | |
| 2013548 | 200812 | 1104 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 2 | 3 | EB | EB | 4 | |
| 2013984 | 200819 | 1530 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 1 | 3 | EB | EB | 4 | |
| 2014078 | 200821 | 0900 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 1 | 3 | NW | NW | 4 | |
| 2014157 | 200822 | 1231 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 20 | 1 | 5 | 1 | SB | SB | 6 | |
| 2014323 | 200825 | 0924 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 99 | 99 | 1 | 4 | NB | EB | 3 | |
| 2014336 | 200825 | 1343 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 6 | 1 | 4 | 1 | EB | NB | 2 | |
| 2014582 | 200829 | 1709 | L101 | | FRANK LLOYD WRIGHT | BL | W | 390 | 1 | 0 | 0 | 12 | 1 | 8 | 1 | EB | EB | 6 | |
| 2014644 | 200830 | 1556 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 6 | 1 | 4 | 1 | EB | NB | 3 | |
| 2014740 | 200901 | 0856 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 99 | 99 | 1 | 4 | NB | SE | 3 | |
| 2015301 | 200910 | 0925 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 13 | 13 | 1 | 1 | WB | WB | 6 | |
| 2015967 | 200921 | 1218 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 5 | 3 | WB | WB | 4 | |
| 2016057 | 200922 | 1602 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 1 | 1 | 4 | 4 | WB | WB | 4 | |
| 2016269 | 200925 | 1417 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 4 | 17 | SB | WB | 3 | |
| 2016734 | 201002 | 1337 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 20 | 1 | 1 | 1 | EB | NB | 2 | |
| 2017191 | 201009 | 2131 | L101 | | FRANK LLOYD WRIGHT | BL | W | 200 | 1 | 0 | 0 | 12 | 1 | 8 | 1 | EB | EB | 6 | |
| 2017327 | 201011 | 1839 | L101 | | FRANK LLOYD WRIGHT | BL | E | 500 | 1 | 0 | 0 | 12 | 1 | 8 | 1 | WB | WB | 6 | |
| 2017464 | 201013 | 1752 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 4 | 1 | 1 | 5 | NB | NE | 4 | |
| 2017680 | 201017 | 1015 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 20 | 1 | 4 | 4 | WB | EB | 5 | |
| 2017945 | 201021 | 1204 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 4 | 1 | 1 | 5 | EB | EB | 4 | |
| 2018350 | 201027 | 0838 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 6 | 1 | 4 | 1 | WB | SB | 3 | |
| 2019768 | 201118 | 1115 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 1 | 3 | EB | EB | 4 | |
| 2020459 | 201129 | 1308 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 6 | 1 | 4 | 1 | EB | NB | 2 | |
| 2020840 | 201204 | 1849 | L101 | | FRANK LLOYD WRIGHT | BL | E | 565 | 2 | 0 | 0 | 0 | 1 | 1 | 3 | EB | EB | 4 | |
| 2021059 | 201207 | 1815 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 0 | 1 | 1 | 3 | SB | SB | 4 | |
| 2021122 | 201208 | 1427 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 2 | 3 | EB | EB | 4 | |
| 2021750 | 201217 | 1239 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 1 | 3 | WB | WB | 4 | |
| 2022132 | 201222 | 1527 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 12 | 1 | 1 | 1 | EB | EB | 6 | |
| 2100591 | 210109 | 1253 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 6 | 1 | 4 | 1 | SB | NB | 3 | |
| 2100898 | 210114 | 1344 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 99 | 1 | 1 | 3 | WB | WB | 4 | |
| 2101826 | 210128 | 1134 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 6 | 1 | 1 | 1 | EB | NB | 2 | |

| REPORT # | DATE YYMMDD | TIME HHMM | NORTH / SOUTH ST. | TYPE | EAST WEST ST. | TYPE | DIR FROM | DIST FROM | INJ. SEV. | PHYS. COND. #1 | PHYS. COND. #2 | VIOLATION #1 | VIOLATION #2 | ACTION #1 | ACTION #2 | TRAV. DIR. #1 | TRAV. DIR. #2 | MANNER OF COLLISION | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2102586 | 210207 | 0952 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 6 | 1 | 4 | 1 | EB | NB | 2 | |
| 2102777 | 210210 | 0928 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 6 | 1 | 4 | 1 | WB | SB | 2 | |
| 2102796 | 210210 | 1256 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 97 | 1 | 1 | 3 | SB | SB | 4 | |
| 2102940 | 210212 | 1316 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 2 | 1 | 5 | 1 | WB | NB | 4 | |
| 2103232 | 210216 | 1704 | L101 | | FRANK LLOYD WRIGHT | BL | S | 150 | 3 | 0 | 0 | 20 | 1 | 5 | 1 | NB | NB | 2 | |
| 2103656 | 210222 | 1517 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 20 | 1 | 5 | 1 | EB | EB | 6 | |
| 2104925 | 210313 | 1204 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 4 | 1 | 5 | 2 | WB | WB | 4 | |
| 2106050 | 210328 | 1438 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 99 | 0 | 2 | 1 | 1 | 3 | WB | WB | 4 | |
| 2106736 | 210407 | 1425 | L101 | RD | FRANK LLOYD WRIGHT | BL | AT | | 3 | 0 | 0 | 6 | 1 | 4 | 1 | SE | NB | 3 | |
| 2107053 | 210412 | 0824 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 4 | 1 | 5 | 3 | SB | SB | 4 | |
| 2107175 | 210413 | 2349 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 4 | 4 | | 13 | 1 | 4 | | EB | | 3 | |
| 2107347 | 210416 | 1603 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 1 | 3 | WB | WB | 4 | |
| 2107364 | 210416 | 2033 | L101 | | FRANK LLOYD WRIGHT | BL | N | 75 | 1 | 4 | 0 | | 1 | 1 | 3 | SB | SB | 4 | |
| 2108280 | 210429 | 0921 | L101 | | FRANK LLOYD WRIGHT | BL | AT | | 3 | 0 | 0 | 6 | 1 | 4 | 1 | SE | NB | 3 | |
| 2109371 | 210513 | 0901 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 12 | 1 | 8 | 3 | SB | SB | 2 | |
| 2109702 | 210517 | 1731 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 99 | 0 | 12 | 1 | 5 | 5 | SE | SE | 6 | |
| 2110195 | 210524 | 1620 | L101 | | FRANK LLOYD WRIGHT | BL | | | 3 | 0 | 0 | 2 | 1 | 2 | 3 | EB | EB | 4 | |
| 2110337 | 210526 | 1505 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 4 | 6 | 2 | 3 | EB | EB | 4 | |
| 2111493 | 210611 | 1959 | L101 | | FRANK LLOYD WRIGHT | BL | | | 2 | 99 | | 13 | | 4 | | SB | | 1 | |
| 2111865 | 210617 | 1111 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 2 | 1 | 1 | 3 | WB | WB | 4 | |
| 2112092 | 210620 | 1209 | L101 | | FRANK LLOYD WRIGHT | BL | E | 265 | 1 | 0 | 0 | 2 | 1 | 5 | 5 | EB | EB | 4 | |
| 2114309 | 210722 | 1224 | L101 | | FRANK LLOYD WRIGHT | BL | W | 500 | 1 | 0 | 0 | 12 | 1 | 8 | 1 | EB | EB | 6 | |
| 2114622 | 210726 | 1627 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 2 | 1 | 5 | 3 | NB | NB | 4 | |
| 2115266 | 210805 | 1010 | L101 | | FRANK LLOYD WRIGHT | BL | | | 3 | 0 | 0 | 6 | 1 | 2 | 1 | SB | WB | 3 | |
| 2115633 | 210810 | 1536 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 6 | 1 | 1 | 4 | SB | WB | 7 | |
| 2116300 | 210820 | 1349 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 2 | 1 | 5 | 5 | EB | EB | 4 | |
| 2117032 | 210831 | 1454 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 13 | 1 | 1 | 1 | EB | EB | 6 | |
| 2117592 | 210908 | 1413 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 4 | 1 | 1 | 3 | SE | SE | 4 | |
| 2119073 | 210929 | 2301 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 2 | 1 | 1 | 3 | WB | WB | 4 | |
| 2119742 | 211009 | 1620 | L101 | | FRANK LLOYD WRIGHT | BL | | | 2 | 0 | 0 | 4 | 1 | 5 | 3 | EB | EB | 4 | |
| 2119799 | 211010 | 1008 | L101 | | FRANK LLOYD WRIGHT | BL | | | 2 | 0 | 0 | 1 | 1 | 4 | 1 | WB | SB | 2 | |
| 2120205 | 211016 | 1129 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 2 | 1 | 1 | 1 | WB | WB | 4 | |
| 2120700 | 211023 | 1134 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 2 | 1 | 5 | 3 | WB | WB | 4 | |
| 2121138 | 211029 | 1158 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 6 | 1 | 1 | 3 | NB | NB | 4 | |
| 2122929 | 211123 | 1049 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | | 1 | 1 | 3 | EB | EB | 4 | |
| 2124500 | 211214 | 2240 | L101 | | FRANK LLOYD WRIGHT | BL | | | 2 | 0 | 0 | 2 | 1 | 1 | 3 | EB | EB | 4 | |
| 2200028 | 220101 | 1257 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 2 | 1 | 1 | 1 | WB | SB | 2 | |
| 2201724 | 220125 | 0827 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 7 | 1 | 6 | 6 | SB | SB | 6 | |

| REPORT # | DATE YYMMDD | TIME HHMM | NORTH / SOUTH ST. | TYPE | EAST WEST ST. | TYPE | DIR FROM | DIST FROM | INJ. SEV. | PHYS. COND. #1 | PHYS. COND. #2 | VIOLATION #1 | VIOLATION #2 | ACTION #1 | ACTION #2 | TRAV. DIR. #1 | TRAV. DIR. #2 | MANNER OF COLLISION | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2202056 | 220128 | 1157 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 12 | 1 | 8 | 1 | SB | SB | 6 | |
| 2202442 | 220201 | 1735 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 20 | 1 | 5 | 1 | SB | SB | 2 | |
| 2202771 | 220205 | 1842 | L101 | | FRANK LLOYD WRIGHT | BL | N | 100 | 1 | 0 | 0 | | 1 | 1 | 3 | SB | SB | 4 | |
| 2203197 | 220210 | 1802 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 4 | 1 | 5 | 3 | WB | WB | 4 | |
| 2203997 | 220221 | 1243 | L101 | | FRANK LLOYD WRIGHT | | S | 690 | 1 | 0 | 0 | 2 | 1 | 1 | 3 | NB | NB | 4 | |
| 2204367 | 220226 | 1627 | L101 | | FRANK LLOYD WRIGHT | BL | E | 45 | 1 | 0 | 0 | 1 | 2 | 5 | 3 | WB | NW | 4 | |
| 2204875 | 220305 | 1021 | L101 | | FRANK LLOYD WRIGHT | BL | S | 1 | 2 | 0 | 0 | 13 | 1 | 5 | 1 | SB | SB | 2 | |
| 2204942 | 220306 | 0937 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 99 | 99 | 4 | 1 | EB | NB | 3 | |
| 2205647 | 220315 | 0925 | L101 | | FRANK LLOYD WRIGHT | BL | N | 150 | 1 | 0 | 0 | 2 | 1 | 1 | 3 | SB | SB | 4 | |
| 2206079 | 220321 | 1110 | L101 | | FRANK LLOYD WRIGHT | BL | N | 1 | 1 | 0 | 0 | | 1 | 5 | 1 | WB | NB | 2 | |
| 2206446 | 220325 | 1640 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 1 | 1 | 1 | 3 | WB | WB | 4 | |
| 2206649 | 220328 | 1044 | L101 | | FRANK LLOYD WRIGHT | BL | S | 260 | 1 | 0 | 0 | 99 | 99 | 1 | 1 | SB | SB | 6 | |
| 2206819 | 220330 | 1629 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 4 | 1 | 1 | 5 | SB | SB | 4 | |
| 2207374 | 220407 | 1243 | L101 | | FRANK LLOYD WRIGHT | BL | W | 100 | 1 | 0 | 0 | 7 | 1 | 4 | 4 | NE | NE | 7 | |
| 2207383 | 220407 | 1420 | L101 | | FRANK LLOYD WRIGHT | BL | | | 3 | 0 | 0 | 99 | 1 | 4 | 1 | SB | NB | 2 | |
| 2207717 | 220411 | 1435 | L101 | | FRANK LLOYD WRIGHT | BL | W | 1 | 1 | 0 | 0 | 12 | 1 | 1 | 1 | EB | EB | 6 | |
| 2207815 | 220412 | 1820 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 2 | 1 | 5 | 3 | EB | EB | 4 | |
| 2207823 | 220412 | 2024 | L101 | | FRANK LLOYD WRIGHT | BL | S | 1266 | 1 | 0 | | 99 | | 5 | | SW | | 1 | |
| 2208894 | 220427 | 1719 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 4 | 1 | 4 | 4 | WB | WB | 4 | |
| 2208990 | 220428 | 2344 | L101 | | FRANK LLOYD WRIGHT | BL | N | 500 | 1 | 4 | | 7 | | 4 | | NB | | 1 | |
| 2209293 | 220503 | 1618 | L101 | | FRANK LLOYD WRIGHT | | | | 1 | 0 | 0 | 2 | 1 | 5 | 1 | NB | NB | 2 | |
| 2209751 | 220509 | 1747 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 6 | 1 | 1 | 4 | EB | WB | 3 | |
| 2209985 | 220512 | 2154 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 99 | 0 | | 1 | 10 | 3 | WB | WB | 4 | |
| 2210187 | 220515 | 1434 | L101 | | FRANK LLOYD WRIGHT | BL | | | 2 | 0 | 0 | 6 | 1 | 4 | 1 | NW | SB | 3 | |
| 2210573 | 220520 | 1837 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 20 | 1 | 5 | 1 | NB | NB | 2 | |
| 2211770 | 220606 | 1651 | L101 | | FRANK LLOYD WRIGHT | BL | W | 256 | 1 | 0 | 0 | 99 | 99 | 1 | 1 | EB | EB | 6 | |
| 2212455 | 220616 | 1125 | L101 | | FRANK LLOYD WRIGHT | | N | 25 | 1 | 0 | 0 | 12 | 1 | 8 | 1 | SB | SB | 6 | |
| 2212682 | 220619 | 1201 | L101 | | FRANK LLOYD WRIGHT | BL | N | 1 | 1 | 0 | | 1 | | 4 | | NB | | 5 | |
| 2214049 | 220711 | 0906 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 6 | 1 | 4 | 1 | WB | SB | 2 | |
| 2215013 | 220726 | 1553 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 20 | 1 | 5 | 1 | NB | NB | 2 | |
| 2215212 | 220729 | 1903 | L101 | | FRANK LLOYD WRIGHT | | | | 1 | 0 | 0 | 2 | 1 | 5 | 3 | SB | SB | 6 | |
| 2215433 | 220802 | 0728 | L101 | | FRANK LLOYD WRIGHT | | S | 1400 | 1 | 0 | 0 | 1 | 1 | 5 | 1 | SB | SB | 6 | |
| 2216698 | 220823 | 0713 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 20 | 1 | 5 | 1 | SE | SB | 2 | |
| 2217135 | 220830 | 1013 | L101 | | FRANK LLOYD WRIGHT | BL | W | 1 | 1 | 0 | 0 | 12 | 1 | 8 | 1 | WB | WB | 6 | |
| 2217246 | 220901 | 0700 | L101 | | FRANK LLOYD WRIGHT | BL | W | 298 | 1 | 0 | 0 | 7 | 1 | 8 | 1 | WB | WB | 4 | |
| 2218286 | 220917 | 1619 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 1 | 1 | 5 | 1 | WB | SB | 2 | |
| 2218447 | 220920 | 1122 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 12 | 1 | 4 | 4 | WB | WB | 6 | |
| 2219257 | 221001 | 1914 | L101 | | FRANK LLOYD WRIGHT | | W | 40 | 1 | 0 | 0 | 2 | 1 | 1 | 3 | EB | EB | 4 | |

| REPORT # | DATE YYMMDD | TIME HHMM | NORTH / SOUTH ST. | TYPE | EAST WEST ST. | TYPE | DIR FROM | DIST FROM | INJ. SEV. | PHYS. COND. #1 | PHYS. COND. #2 | VIOLATION #1 | VIOLATION #2 | ACTION #1 | ACTION #2 | TRAV. DIR. #1 | TRAV. DIR. #2 | MANNER OF COLLISION | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2219393 | 221004 | 0743 | L101 | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 51 | 51 | 5 | 5 | SE | SE | 4 | |
| 2220854 | 221028 | 0952 | L101 | | FRANK LLOYD WRIGHT | BL | N | 67 | 1 | 0 | 0 | 2 | 1 | 1 | 3 | SB | SB | 4 | |
| 2221316 | 221104 | 0810 | L101 | | FRANK LLOYD WRIGHT | BL | N | 0 | 1 | 0 | 0 | 50 | 1 | 5 | 5 | NB | NB | 4 | |
| 2222579 | 221122 | 1105 | L101 | | FRANK LLOYD WRIGHT | BL | E | 10 | 1 | 0 | 0 | 50 | 1 | 3 | 3 | WB | WB | 4 | |
| 2121399 | 211101 | 2054 | L101 | | PIMA | RD | | | 1 | 4 | 0 | 6 | 1 | 1 | 1 | SB | WB | 2 | |
| 2008702 | 200520 | 0637 | L101 | | PRINCESS | DR | AT | | 1 | 0 | 0 | 12 | 1 | 1 | 1 | EB | EB | 2 | |
| 2015001 | 200905 | 0547 | L101 | | PRINCESS | DR | AT | | 2 | 4 | 0 | 2 | 1 | 8 | 3 | SB | SB | 4 | |
| 2015622 | 200915 | 1137 | L101 | | PRINCESS | DR | S | 1000 | 1 | 0 | 0 | 2 | 1 | 1 | 3 | NB | NB | 4 | |
| 2016541 | 200929 | 1456 | L101 | | PRINCESS | DR | E | 1000 | 1 | 0 | 0 | 2 | 1 | 1 | 3 | SW | SW | 4 | |
| 2016938 | 201005 | 2207 | L101 | | PRINCESS | DR | AT | | 1 | 0 | 0 | 2 | 1 | 1 | 3 | NB | NB | 4 | |
| 2017768 | 201018 | 1454 | L101 | | PRINCESS | DR | S | 150 | 1 | 0 | 0 | 12 | 1 | 1 | 1 | NB | NB | 4 | |
| 2019781 | 201118 | 1519 | L101 | | PRINCESS | DR | AT | | 1 | 0 | 0 | 12 | 1 | 1 | 1 | SB | SB | 6 | |
| 2104768 | 210310 | 1820 | L101 | | PRINCESS | DR | AT | | 99 | 99 | 0 | 7 | 1 | 4 | 4 | WB | WB | 2 | |
| 2116363 | 210821 | 0813 | L101 | | PRINCESS | DR | | | 3 | 4 | 0 | | 1 | 1 | 3 | WB | WB | 4 | |
| 2118614 | 210923 | 1557 | L101 | | PRINCESS | DR | | | 1 | 0 | 0 | 4 | 1 | 5 | 3 | NB | NB | 4 | |
| 2121257 | 211030 | 2326 | L101 | | PRINCESS | DR | | | 1 | 0 | | 7 | | 4 | | SB | | 3 | |
| 2200219 | 220104 | 1430 | L101 | | PRINCESS | BL | | | 1 | 0 | | 2 | | 4 | | SE | | 1 | |
| 2202112 | 220129 | 0019 | L101 | | PRINCESS | DR | | | 1 | 0 | | 2 | | 5 | | SB | | 1 | |
| 2202727 | 220205 | 0058 | L101 | | PRINCESS | DR | | | 99 | 99 | | 99 | | 4 | | SB | | 1 | |
| 2205707 | 220316 | 1159 | L101 | | PRINCESS | BL | | | 4 | 99 | 0 | 2 | 1 | 1 | 1 | SB | WB | 2 | |
| 2214332 | 220715 | 1422 | L101 | | PRINCESS | DR | | | 1 | 0 | 0 | 7 | 1 | 5 | 1 | WB | NB | 2 | |
| 2216825 | 220825 | 0957 | L101 | | PRINCESS | DR | | | 1 | 0 | 0 | 6 | 1 | 1 | 1 | SB | WB | 2 | |
| 2217804 | 220909 | 1321 | L101 | | PRINCESS | DR | | | 1 | 0 | 0 | 99 | 99 | 1 | 1 | NB | NB | 6 | |
| 2218390 | 220919 | 1057 | L101 | | PRINCESS | DR | N | 1 | 3 | 0 | 0 | 2 | 1 | 1 | 3 | SB | SB | 4 | |
| 2220703 | 221026 | 0711 | L101 | | PRINCESS | DR | E | 54 | 1 | 51 | 0 | 51 | 1 | 51 | 2 | 51 | SB | 4 | |
| 2121074 | 211028 | 1542 | L101 FRONTAGE | RD | BELL | RD | | | 1 | 0 | 0 | 97 | 1 | 5 | 5 | WB | WB | 4 | |
| 2121213 | 211030 | 1119 | L101 FRONTAGE | RD | BELL | RD | | | 1 | 0 | 0 | 2 | 1 | 1 | 5 | EB | EB | 4 | |
| 2005432 | 200313 | 1059 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 5 | 5 | NB | NB | 4 | |
| 2005700 | 200316 | 2110 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 20 | 1 | 5 | 1 | NB | NB | 6 | |
| 2006302 | 200331 | 0941 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 1 | 3 | NB | NB | 4 | |
| 2010565 | 200619 | 2002 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 99 | 99 | 1 | 1 | EB | NB | 2 | |
| 2011886 | 200713 | 1733 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | E | 40 | 1 | 0 | 0 | 0 | 1 | 5 | 3 | WB | WB | 4 | |
| 2022057 | 201221 | 1235 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | S | 350 | 1 | 0 | 0 | 2 | 1 | 8 | 1 | SB | SB | 6 | |
| 2022227 | 201224 | 0938 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | E | 500 | 99 | 99 | 0 | 12 | 1 | 8 | 2 | EB | EB | 6 | |
| 2022230 | 201224 | 0959 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 99 | 99 | 5 | 5 | NB | NB | 4 | |
| 2100882 | 210114 | 0924 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 2 | 99 | 0 | 8 | 1 | 97 | 1 | WB | EB | 2 | BIKE |
| 2101841 | 210128 | 1430 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 2 | 0 | 0 | 20 | 1 | 5 | 5 | WB | WB | 4 | |
| 2102061 | 210131 | 1238 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 2 | 1 | 2 | SB | SB | 4 | |

| REPORT # | DATE YYMMDD | TIME HHMM | NORTH / SOUTH ST. | TYPE | EAST WEST ST. | TYPE | DIR FROM | DIST FROM | INJ. SEV. | PHYS. COND. #1 | PHYS. COND. #2 | VIOLATION #1 | VIOLATION #2 | ACTION #1 | ACTION #2 | TRAV. DIR. #1 | TRAV. DIR. #2 | MANNER OF COLLISION | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2102069 | 210131 | 1451 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | S | 1500 | 1 | 0 | 0 | 2 | 1 | 8 | 1 | SB | SB | 4 | |
| 2102931 | 210212 | 1054 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 5 | 3 | WB | WB | 4 | |
| 2103156 | 210215 | 1503 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 99 | 0 | 0 | 12 | 1 | 8 | 1 | EB | EB | 4 | |
| 2103686 | 210223 | 0648 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 99 | 99 | 20 | 1 | 5 | 1 | NB | NB | 2 | |
| 2104157 | 210302 | 0947 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 99 | 99 | 4 | 1 | EB | NB | 2 | |
| 2104313 | 210304 | 1354 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 6 | 1 | 1 | 1 | EB | NB | 2 | |
| 2105289 | 210318 | 0801 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | AT | | 1 | 0 | 0 | 2 | 1 | 2 | 3 | SB | SB | 4 | |
| 2108972 | 210507 | 1510 | L101 FRONTAGE | | FRANK LLOYD WRIGHT | BL | S | 270 | 1 | 0 | 99 | 1 | 99 | 4 | 4 | NB | NB | 4 | |
| 2109661 | 210517 | 0601 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | | | 3 | 0 | 0 | 6 | 1 | 1 | 1 | NB | EB | 2 | |
| 2111461 | 210611 | 1324 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | S | 0 | 1 | 0 | 0 | 20 | 1 | 5 | 1 | NB | NB | 2 | |
| 2122994 | 211124 | 0614 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 13 | 1 | 4 | 4 | SB | SB | 6 | |
| 2123025 | 211124 | 1310 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | S | 500 | 2 | 0 | 0 | 2 | 1 | 2 | 3 | SB | SB | 4 | |
| 2123552 | 211202 | 1322 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 99 | 99 | 1 | 4 | NB | NE | 6 | |
| 2125053 | 211221 | 1859 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 99 | 1 | 1 | 4 | NB | SE | 3 | |
| 2125099 | 211222 | 1355 | L101 FRONTAGE | RD | FRANK LLOYD WRIGHT | BL | W | 400 | 1 | 0 | 0 | 12 | 12 | 8 | 8 | EB | EB | 6 | |
| 2125192 | 211223 | 1445 | L101 FRONTAGE | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 2 | 1 | 2 | 5 | SE | SB | 4 | |
| 2200470 | 220108 | 1258 | L101 FRONTAGE | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 2 | 1 | 1 | 1 | NW | NW | 4 | |
| 2022104 | 201222 | 0827 | L101 FRONTAGE | RD | PRINCESS | DR | AT | | 1 | 0 | 0 | 99 | 99 | 99 | 1 | SB | SB | 6 | |
| 2101628 | 210125 | 0731 | L101 FRONTAGE | RD | PRINCESS | DR | AT | | 1 | 0 | | 2 | 0 | 1 | | SB | | 1 | |
| 2102211 | 210202 | 1645 | L101 FRONTAGE | RD | PRINCESS | DR | S | 150 | 1 | 0 | 0 | 20 | 1 | 5 | 1 | SB | SB | 2 | |
| 2104507 | 210306 | 2212 | L101 FRONTAGE | RD | PRINCESS | DR | AT | | 99 | 0 | 99 | 0 | 99 | 1 | 4 | WB | WB | 2 | |
| 2112381 | 210624 | 1828 | L101 FRONTAGE NB | RD | BELL | RD | | | 1 | 0 | 0 | 6 | 1 | 1 | 4 | EB | NB | 3 | |
| 2112847 | 210701 | 1808 | L101 FRONTAGE NB | RD | BELL | RD | | | 1 | 0 | 0 | 97 | 1 | 1 | 5 | WB | WB | 4 | |
| 2112495 | 210625 | 1052 | L101 FRONTAGE NB | RD | FRANK LLOYD WRIGHT | BL | | | 2 | 0 | 0 | 2 | 1 | 2 | 4 | NB | NB | 4 | |
| 2115578 | 210809 | 1340 | L101 FRONTAGE NB | RD | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 99 | 99 | 4 | 1 | NB | NB | 6 | |
| 2115635 | 210810 | 1551 | L101 FRONTAGE NB | RD | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 20 | 1 | 5 | 1 | WB | NB | 2 | |
| 2111372 | 210610 | 0930 | L101 FRONTAGE RD SB | | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 4 | 1 | 2 | 3 | SB | SB | 4 | |
| 2112888 | 210702 | 1129 | L101 FRONTAGE SB | RD | FRANK LLOYD WRIGHT | BL | | | 1 | 0 | 0 | 12 | 1 | 8 | 8 | EB | EB | 6 | |
| 2114656 | 210727 | 0416 | L101 FRONTAGE SB | | FRANK LLOYD WRIGHT | BL | | | 1 | 99 | 0 | 1 | 1 | 1 | 1 | SB | EB | 2 | |
| 2115218 | 210804 | 1709 | L101 FRONTAGE SB | RD | FRANK LLOYD WRIGHT | BL | | | 1 | 99 | 0 | 6 | 1 | 1 | 1 | WB | SB | 8 | |
| 2116676 | 210826 | 0950 | L101 FRONTAGE SB | RD | FRANK LLOYD WRIGHT | BL | | | 1 | 99 | 0 | 6 | 1 | 1 | 1 | WB | SB | 2 | |
| 2120317 | 211018 | 0504 | L101 FRONTAGE SB | | PRINCESS | DR | | | 1 | 0 | 0 | 99 | 99 | 4 | 4 | SB | SB | 6 | |
| 2014764 | 200901 | 1308 | PIMA | RD | TRAILSIDE | VW | AT | | 1 | 0 | 0 | 12 | 1 | 8 | 1 | SB | SB | 6 | |
| 2022270 | 201225 | 1423 | PIMA | RD | TRAILSIDE | VW | AT | | 1 | 0 | 0 | 20 | 1 | 4 | 1 | WB | SB | 3 | |
| 2114868 | 210730 | 1002 | PIMA | RD | TRAILSIDE | VW | | | 1 | 0 | 0 | 7 | 1 | 6 | 1 | SB | NB | 2 | |
| 2115183 | 210804 | 0954 | PIMA | RD | TRAILSIDE | VW | | | 3 | 0 | 0 | 20 | 1 | 4 | 1 | WB | SB | 3 | |
| 2119557 | 211007 | 0829 | PIMA | RD | TRAILSIDE | VW | | | 1 | 0 | 0 | 1 | 1 | 1 | 1 | NB | NB | 4 | |
| 2122571 | 211117 | 1915 | PIMA | RD | TRAILSIDE | VW | | | 1 | 0 | 0 | 20 | 1 | 4 | 1 | SB | SB | 3 | |

| REPORT # | DATE YYMMDD | TIME HHMM | NORTH / SOUTH ST. | TYPE | EAST WEST ST. | TYPE | DIR FROM | DIST FROM | INJ. SEV. | PHYS. COND. #1 | PHYS. COND. #2 | VIOLATION #1 | VIOLATION #2 | ACTION #1 | ACTION #2 | TRAV. DIR. #1 | TRAV. DIR. #2 | MANNER OF COLLISION | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2204563 | 220301 | 1030 | PIMA | RD | TRAILSIDE | VW | | | 3 | 0 | 0 | 20 | 1 | 4 | 1 | WB | NB | 3 | |
| 2207301 | 220406 | 0906 | PIMA | RD | TRAILSIDE | VW | | | 1 | 0 | 0 | 12 | 1 | 8 | 1 | NB | NB | 6 | |
| 2209105 | 220430 | 1741 | PIMA | RD | TRAILSIDE | VW | N | 335 | 1 | 0 | | 13 | | 9 | | NB | | 1 | |
| 2210853 | 220524 | 1958 | PIMA | RD | TRAILSIDE | VW | | | 1 | 0 | 0 | 2 | 1 | 1 | 1 | SB | SB | 4 | |
| 2223515 | 221207 | 0717 | PIMA | RD | TRAILSIDE | VW | | | 1 | 0 | 0 | 12 | 1 | 8 | 1 | SB | SB | 6 | |
| 1901081 | 190115 | 1457 | PIMA | RD | TRAILSIDE VIEW | | AT | | 99 | 0 | 0 | 2 | 1 | 1 | 3 | SB | SB | 4 | |
| 1918178 | 190830 | 0554 | PIMA | RD | TRAILSIDE VIEW | | N | 300 | 1 | 4 | | 2 | 0 | 1 | | NB | | 1 | |
| 1920197 | 190926 | 1208 | PIMA | RD | TRAILSIDE VIEW | | AT | | 1 | 0 | 0 | 20 | 1 | 1 | 1 | WB | NB | 2 | |
| 1925774 | 191212 | 1602 | PIMA | RD | TRAILSIDE VIEW | | AT | | 1 | 0 | 0 | 20 | 1 | 4 | 1 | WB | NB | 3 | |
| 2004719 | 200303 | 1426 | PIMA | RD | TRAILSIDE VIEW | | S | 200 | 1 | 0 | 0 | 99 | 99 | 1 | 1 | NB | NB | 6 | |
| 2012798 | 200730 | 1108 | PIMA | RD | TRAILSIDE VIEW | | AT | | 1 | 0 | 0 | 4 | 1 | 1 | 3 | WB | WB | 4 | |
| 2104404 | 210305 | 1622 | PIMA | RD | TRAILSIDE VIEW | | S | 500 | 1 | 0 | 0 | 2 | 1 | 1 | 3 | NB | NB | 4 | |
| 2110777 | 210601 | 0639 | PIMA | RD | TRAILSIDE VIEW | | | | 1 | 0 | 0 | 20 | 97 | 4 | 1 | WB | NE | 2 | |
| 2117993 | 210914 | 1516 | PIMA | RD | TRAILSIDE VIEW | | | | 1 | 99 | 0 | 2 | 1 | 1 | 2 | SB | SB | 4 | |
| 2212465 | 220616 | 1340 | PIMA | RD | TRAILSIDE VIEW | | | | 3 | 0 | 0 | 7 | 1 | 4 | 1 | SB | SB | 3 | |
| 2217949 | 220911 | 1955 | PIMA | RD | TRAILSIDE VIEW | | | | 1 | 0 | 0 | 20 | 1 | 4 | 1 | WB | SB | 3 | |
| 2222617 | 221123 | 1107 | PIMA | RD | TRAILSIDE VIEW | | S | 20 | 1 | 0 | | 9 | | 1 | | SB | | 1 | |
| 2101761 | 210127 | 1313 | SR101 | | FRANK LLOYD WRIGHT | BL | E | 430 | 1 | 0 | 0 | 0 | 1 | 5 | 5 | SW | SW | 4 | |

## KEY

**INJURY SEVERITY:**
**1=NO INJURY, 2=POSSIBLE INJURY, 3=NON-INCAPACITATING INJURY, 4=INCAPACITATING INJURY, 5=FATAL INJURY, 99=NOT REPORTED / UNKNOWN**

**PHYSICAL CONDITION:**
**0=NO APPARENT INFLUENCE, 1=ILLNESS, 2=PHYSICAL IMPAIRMENT, 3=FELL ASLEEP / FATIGUED 4=ALCOHOL, 5=DRUGS, 6=MEDICATIONS, A=NO TEST GIVEN, B=TEST GIVEN, C=TEST REFUSED, D=TESTING UNKNOWN, 97=OTHER, 99=UNKNOWN**

**VIOLATION:**
**1=NO IMPROPER ACTION, 2=SPEED TOO FAST FOR CONDITIONS, 3=EXCEEDED LAWFUL SPEED 4=FOLLOWED TOO CLOSELY. 5=RAN STOP SIGN, 6=DISREGAREDED TRAFFIC SIGNAL7=MADE IMPROPER TURN, 8=DROVE/RODE IN OPPOSING TRAFFIC LANE, 9=KNOWINGLY OPERATED WITH FAULTY / MISSING EQUIPMENT, 10=REQUIRED MOTORCYCLE SAFETY EQUIPMENT NOT USED, 11=PASSED IN NO PASSING ZONE, 12=UNSAFE LANE CHANGE, 13=FAILED TO KEEP IN PROPER LANE, 14=DISREGARDED PAVEMENT MARKINGS, 15=OTHER UNSAFE PASSING, 16=INATTENTION/DISTRACTION, 17=DID NOT USE CROSSWALK, 18=WALKED ON WRONG SIDE OF ROAD, 19=ELECTRONIC COMMUNICATIONS DEVICE, 20=FAILED TO YIELD RIGHT OF WAY (added August 2014), 97=OTHER, 99 UNKNOWN**

**ACTION:**
**1=GOING STRAIGHT AHEAD, 2=SLOWING IN TRAFFICWAY, 3=STOPPED IN TRAFFICWAY, 4=MAKING LEFT TURN, 5=MAKING RIGHT TURN, 6=MAKING U-TURN, 7=OVERTAKING/PASSING, 8=CHANGING LANES, 9=NEGOTIATING A CURVE, 10=BACKING, 11=AVOIDING VEH/OBJ/PED/CYCLIST/ANIMAL, 12=ENTERING PARKING POSITION, 13=LEAVING PARKING POSITION, 14=PROPERLY PARKED, 15=IMPROPERLY PARKED, 16=DRIVERLESS MOVING VEHICLE, 17=CROSING ROAD, 18=WALKING WITH TRAFFIC, 19=WALKING AGAINST TRAFFIC, 20=STANDING, 21=LYING, 22=GETTING ON OR OFF VEHICLE, 23=WORKING ON/PUSHING VEHICLE, 24=WORKING ON ROAD, 97=OTHER, 99=UKNOWN**

**MANNER OF COLLISION:**
**1=SINGLE VEHICLE, 2=ANGLE (front to side, other than left turn), 3=LEFT TURN, 4=REAR END (front to rear), 5=HEAD-ON (front to front, other than left turn), 6=SIDESWIPE (same direction), 7=SIDESWIPE (opposite direction), 8=REAR-TO-SIDE, 9=REAR TO REAR, 97=OTHER, 99=UNKNOWN**

***TOTAL*** **396**

Traffic Engineering
Transportation Department
7447 East Indian School Road, Suite 205
Scottsdale, Arizona 85251

# 2020 Traffic Volume & Collision Report

October 2021

REVISED JUNE 2022

**2020 Intersection Collision Data, Sorted by Descending Collision Rate**

*2020 Average Intersection Collision Rate = 0.54 collisions per million vehicles entering the intersection*

| N/S STREET | E/W STREET | VOLUME | NO. OF COL IN 2YRS | AVG COL PER YR | COL RATE | RANK |
|---|---|---|---|---|---|---|
| 101 FREEWAY | FRANK LLOYD WRIGHT | 62700 | 93 | 46.5 | 2.03 | 1 |
| DRINKWATER | OSBORN | 13500 | 20 | 10.0 | 2.03 | 2 |
| Statistical Outer Fence = 1.77 | | | | | | |
| GRANITE REEF | OSBORN | 2400 | 3 | 1.5 | 1.71 | 3 |
| HAYDEN | NORTHSIGHT | 31400 | 38 | 19.0 | 1.66 | 4 |
| SCOTTSDALE | 101 FREEWAY | 60400 | 69 | 34.5 | 1.56 | 5 |
| SCOTTSDALE | INDIAN SCHOOL | 43000 | 49 | 24.5 | 1.56 | 6 |
| SCOTTSDALE | SHEA | 42100 | 46 | 23.0 | 1.50 | 7 |
| SCOTTSDALE | PINNACLE PEAK | 38500 | 41 | 20.5 | 1.46 | 8 |
| PIMA | DYNAMITE | 25600 | 26 | 13.0 | 1.39 | 9 |
| SCOTTSDALE | CAMELBACK | 38900 | 39 | 19.5 | 1.37 | 10 |
| GOLDWATER | CAMELBACK | 41700 | 40 | 20.0 | 1.31 | 11 |
| Statistical Inner Fence = 1.25 | | | | | | |
| MILLER | MCKELLIPS | 16200 | 14 | 7.0 | 1.18 | 12 |
| HAYDEN | MCDOWELL | 64900 | 56 | 28.0 | 1.18 | 13 |
| MILLER | OSBORN | 18600 | 16 | 8.0 | 1.18 | 14 |
| HAYDEN | THOMAS | 70100 | 60 | 30.0 | 1.17 | 15 |
| 68TH | OSBORN | 15400 | 13 | 6.5 | 1.16 | 16 |
| MILLER | MCDOWELL | 33400 | 28 | 14.0 | 1.15 | 17 |
| SCOTTSDALE | CHAPARRAL | 33900 | 27 | 13.5 | 1.09 | 18 |
| SCOTTSDALE | MCDOWELL | 71200 | 56 | 28.0 | 1.08 | 19 |
| HAYDEN | THOMPSON PEAK | 24700 | 19 | 9.5 | 1.05 | 20 |
| SCOTTSDALE | THOMAS | 68400 | 52 | 26.0 | 1.04 | 21 |
| SCOTTSDALE | OSBORN | 31600 | 24 | 12.0 | 1.04 | 22 |
| 92ND | THUNDERBIRD | 6600 | 5 | 2.5 | 1.04 | 23 |
| THOMPSON PEAK | FRANK LLOYD WRIGHT | 37300 | 28 | 14.0 | 1.03 | 24 |
| THOMPSON PEAK | BELL | 20200 | 15 | 7.5 | 1.02 | 25 |
| 68TH | CAMELBACK | 34500 | 25 | 12.5 | 0.99 | 26 |
| GREENWAY-HAYDEN | FRANK LLOYD WRIGHT | 58000 | 42 | 21.0 | 0.99 | 27 |
| 68TH | THOMAS | 38000 | 27 | 13.5 | 0.97 | 28 |
| MILLER | THOMAS | 38000 | 27 | 13.5 | 0.97 | 29 |
| 104TH | CACTUS | 5800 | 4 | 2.0 | 0.94 | 30 |
| SCOTTSDALE | LONE MOUNTAIN | 25000 | 17 | 8.5 | 0.93 | 31 |
| 101 FREEWAY | BELL | 32900 | 22 | 11.0 | 0.92 | 32 |
| SCOTTSDALE | CACTUS | 57400 | 38 | 19.0 | 0.91 | 33 |
| HAYDEN | ROOSEVELT | 32400 | 21 | 10.5 | 0.89 | 34 |
| MILLER | INDIAN SCHOOL | 46100 | 29 | 14.5 | 0.86 | 35 |
| 94TH | THUNDERBIRD | 15900 | 10 | 5.0 | 0.86 | 36 |
| PIMA | PINNACLE PEAK | 35000 | 22 | 11.0 | 0.86 | 37 |
| HAYDEN | CACTUS | 41700 | 26 | 13.0 | 0.85 | 38 |
| 92ND | SHEA | 65600 | 40 | 20.0 | 0.84 | 39 |
| GRANITE REEF | MCDONALD | 26300 | 16 | 8.0 | 0.83 | 40 |
| 101 FREEWAY | PIMA/PRINCESS | 67600 | 41 | 20.5 | 0.83 | 41 |
| HAYDEN | OSBORN | 29800 | 18 | 9.0 | 0.83 | 42 |
| 64TH | THOMAS | 45000 | 27 | 13.5 | 0.82 | 43 |
| 96TH | MOUNTAIN VIEW | 11700 | 7 | 3.5 | 0.82 | 44 |
| MILLER | CAMELBACK | 33600 | 20 | 10.0 | 0.82 | 45 |
| SCOTTSDALE | PRINCESS | 50600 | 30 | 15.0 | 0.81 | 46 |

# Trip Generation

# *Trip Generation Planner (ITE 11th Edition) - Summary Report*

Kimley»Horn

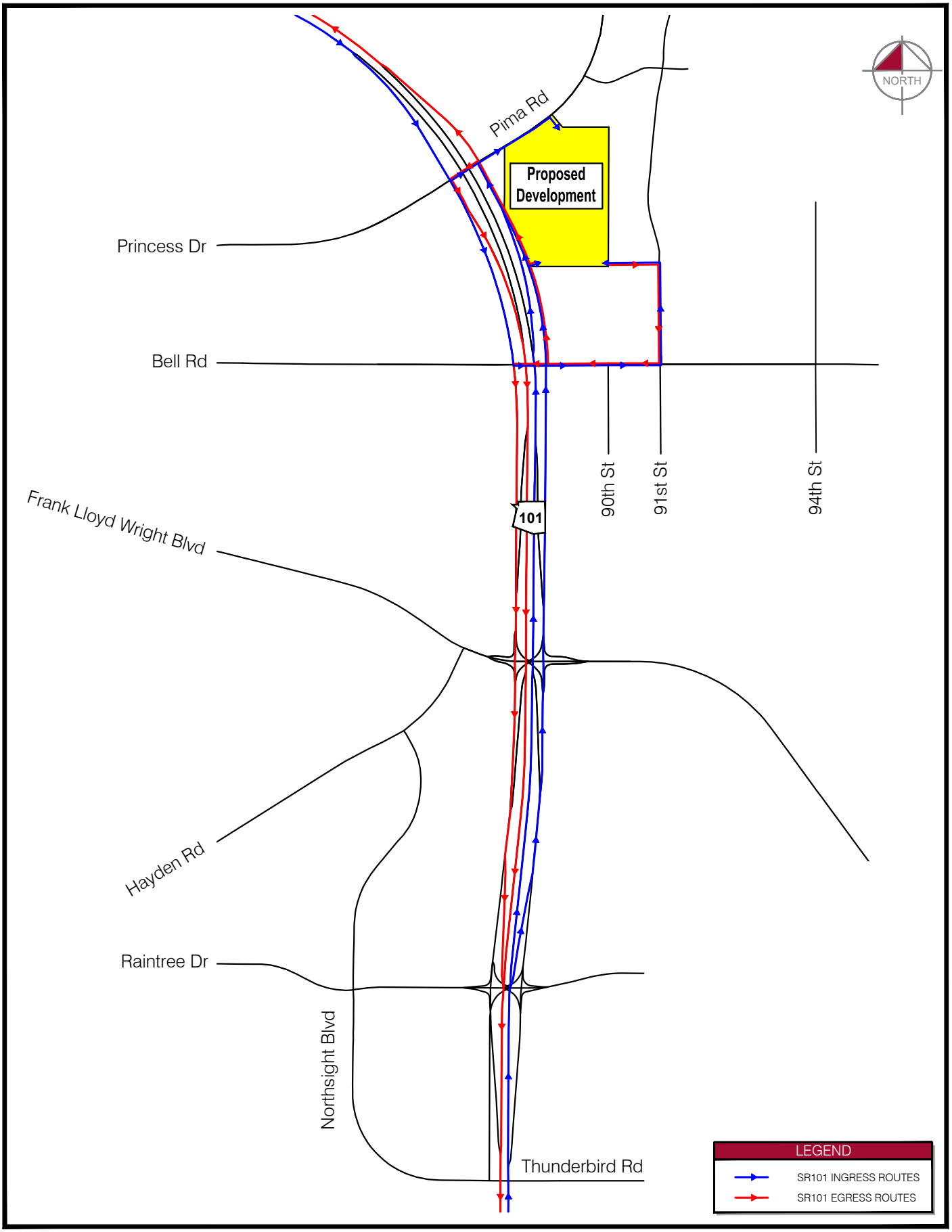
***Weekday Trip Generation***
***Trips Based on Average Rates/Equations***

***Project Name*** **SEC SR101L & Pima Rd**
***Project Number*** **291335001**

**ITE Truck Rate for ITE Code 150 per**
**ITE *Trip Generation Handbook, 3rd Edition***
**20%**

| | | | | | | | Rates | | | Total Trips | | | | | | | *Passenger Car Trips* | | | | | | | *Truck Trips* | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ITE Code** | **Internal Capture Land Use** | **Land Use Description** | **Independent Variable** | **Setting/Location** | **No. of Units** | **Avg Rate or Eq** | **Daily Rate** | **AM Rate** | **PM Rate** | **Daily Trips** | **AM Trips** | **PM Trips** | **AM Trips In** | **AM Trips Out** | **PM Trips In** | **PM Trips Out** | ***Daily Trips*** | ***AM Trips*** | ***PM Trips*** | ***AM Trips In*** | ***AM Trips Out*** | ***PM Trips In*** | ***PM Trips Out*** | ***Daily Trips*** | ***AM Trips*** | ***PM Trips*** | ***AM Trips In*** | ***AM Trips Out*** | ***PM Trips In*** | ***PM Trips Out*** |
| | | **SITE** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | **Parcel 1** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 150 | Other | Warehousing | 1,000 Sq Ft | General Urban/Suburban | 572.2 | Avg | 1.71 | 0.17 | 0.18 | **980** | **97** | **103** | **75** | **22** | **29** | **74** | ***784*** | ***78*** | ***82*** | ***60*** | ***18*** | ***23*** | ***59*** | ***196*** | ***19*** | ***21*** | ***15*** | ***4*** | ***6*** | ***15*** |
| | | **Parcel 5*** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 710 | Office | General Office Building | 1,000 Sq Ft | General Urban/Suburban | 54 | Avg | 10.84 | 1.52 | 1.44 | 586 | 82 | 78 | 72 | 10 | 13 | 65 | *586* | *82* | *78* | *72* | *10* | *13* | *65* | | | | | | | |
| 932 | Restaurant | High-Turnover (Sit-Down) Restaurant | 1,000 Sq Ft | General Urban/Suburban | 6 | Avg | 107.20 | 9.57 | 9.05 | 644 | 57 | 54 | 31 | 26 | 33 | 21 | *644* | *57* | *54* | *31* | *26* | *33* | *21* | | | | | | | |
| | | **Parcel 6*** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 710 | Office | General Office Building | 1,000 Sq Ft | General Urban/Suburban | 40 | Avg | 10.84 | 1.52 | 1.44 | 434 | 61 | 58 | 54 | 7 | 10 | 48 | *434* | *61* | *58* | *54* | *7* | *10* | *48* | | | | | | | |
| | | **ADJACENT DEVELOPMENTS** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | **Parcel 2** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 150 | Other | Warehousing | 1,000 Sq Ft | General Urban/Suburban | 404.1 | Avg | 1.71 | 0.17 | 0.18 | 692 | 69 | 73 | 53 | 16 | 20 | 53 | *554* | *55* | *58* | *42* | *13* | *16* | *42* | *138* | *14* | *15* | *11* | *3* | *4* | *11* |
| | | **Parcel 3** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 710 | Office | General Office Building | 1,000 Sq Ft | General Urban/Suburban | 300 | Avg | 10.84 | 1.52 | 1.44 | 3,252 | 456 | 432 | 401 | 55 | 73 | 359 | *3,252* | *456* | *432* | *401* | *55* | *73* | *359* | | | | | | | |
| | | **Parcel 4** | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 710 | Office | General Office Building | 1,000 Sq Ft | General Urban/Suburban | 49.2 | Avg | 10.84 | 1.52 | 1.44 | 534 | 75 | 71 | 66 | 9 | 12 | 59 | *534* | *75* | *71* | *66* | *9* | *12* | *59* | | | | | | | |
| 150 | Other | Warehousing | 1,000 Sq Ft | General Urban/Suburban | 105.9 | Avg | 1.71 | 0.17 | 0.18 | 182 | 18 | 19 | 14 | 4 | 5 | 14 | *146* | *14* | *15* | *11* | *3* | *4* | *11* | *36* | *4* | *4* | *3* | *1* | *1* | *3* |
| ***Future phase developments to be included in background traffic assignment volumes.** | | | | | | | ***Grand Total (All Phases)*** | | | 7,304 | 915 | 888 | 766 | 149 | 195 | 693 | *6,934* | *878* | *848* | *737* | *141* | *184* | *664* | *370* | *37* | *40* | *29* | *8* | *11* | *29* |

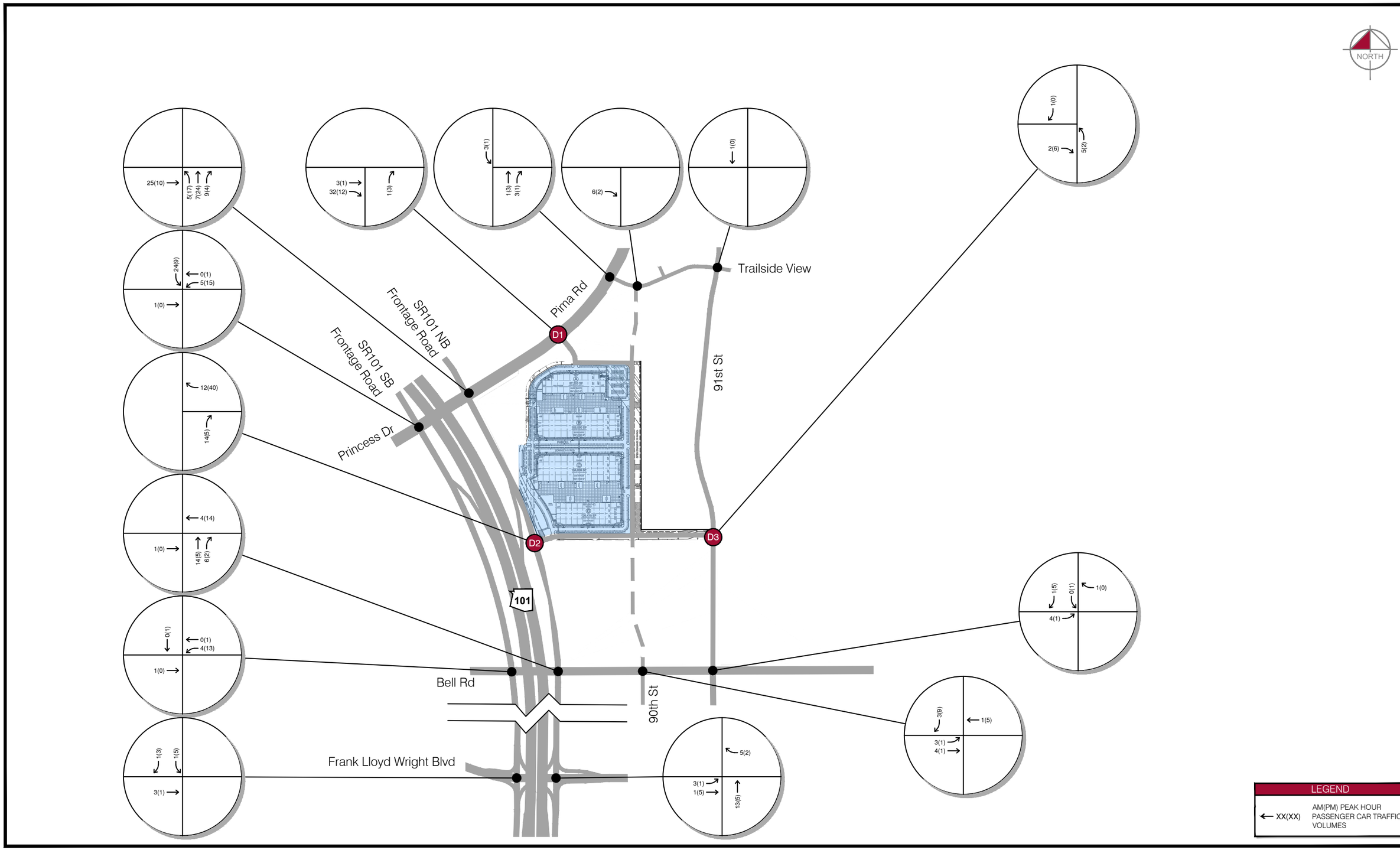
# SR101 Traffic Routing

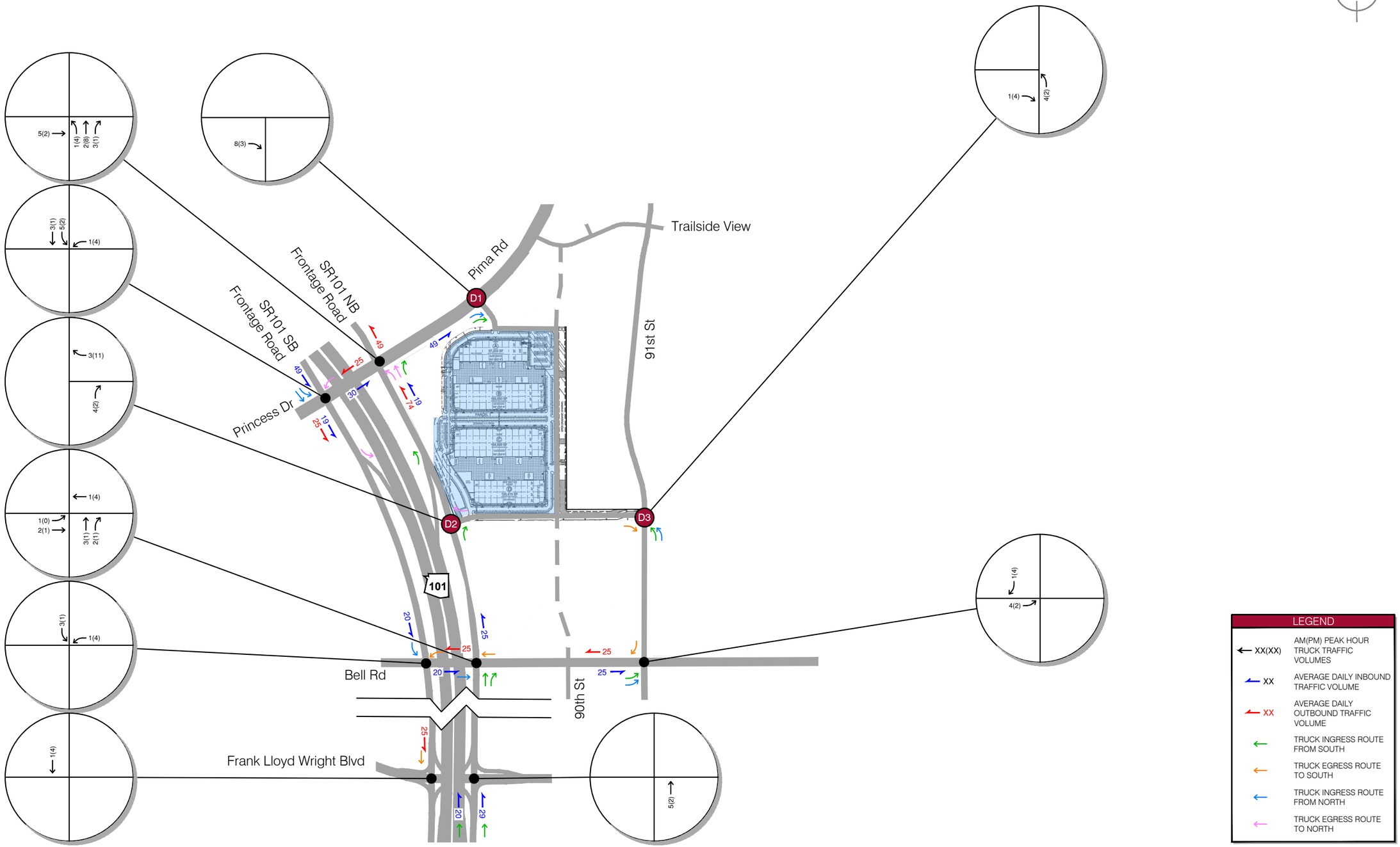



Kimley»Horn

Appendix
SR101 Traffic Routing

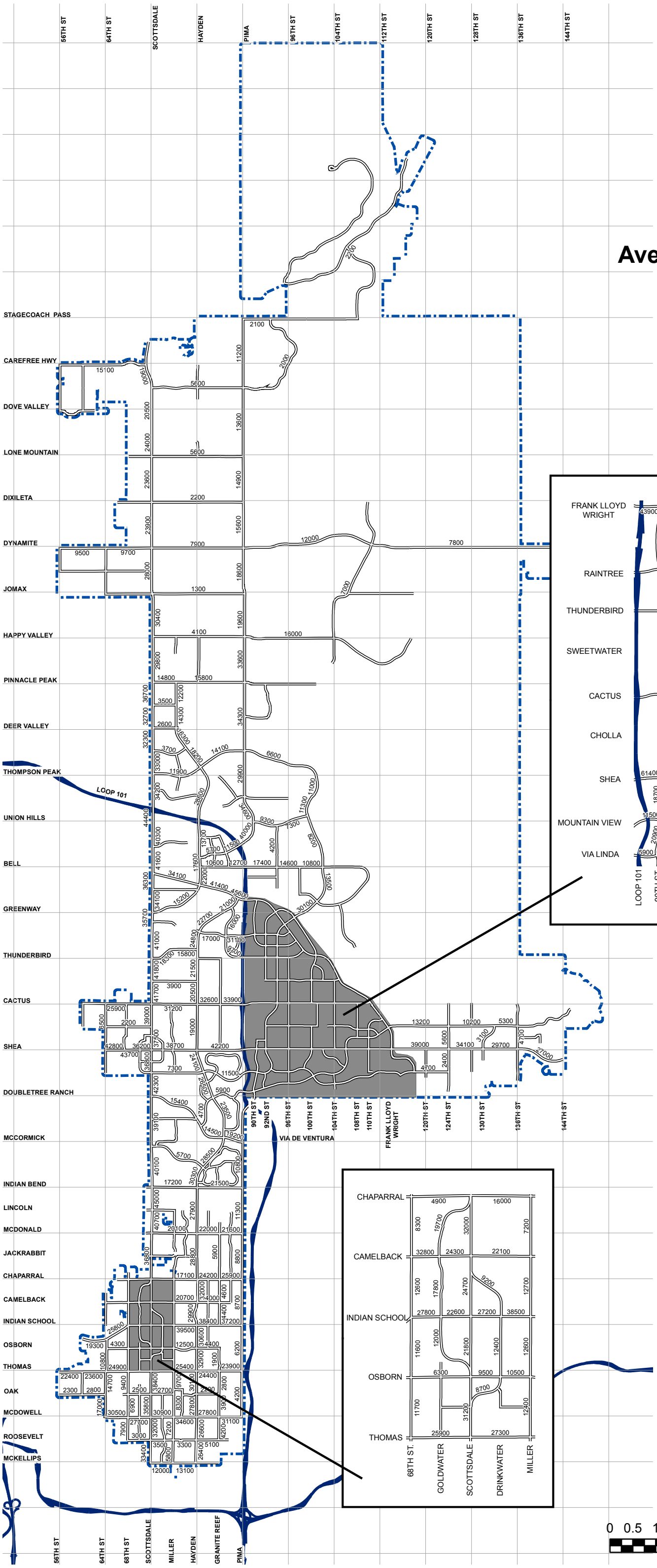
# Passenger Car and Truck
# Site Traffic Assignment


NORTH
25(10)
5(17)
7(24)
9(4)
3(1)
32(12)
1(3)
3(1)
1(3)
3(1)
6(2)
1(0)
1(0)
2(6)
5(2)
24(9)
0(1)
5(15)
1(0)
12(40)
14(5)
4(14)
1(0)
14(5)
6(2)
0(1)
0(1)
4(13)
1(0)
1(3)
1(5)
3(1)
1(5)
0(1)
1(0)
4(1)
3(9)
1(5)
3(1)
4(1)
5(2)
3(1)
1(5)
13(5)
SR101 NB
Frontage Road
SR101 SB
Frontage Road
Pima Rd
Princess Dr
Trailside View
91st St
D1
D2
D3
101
Bell Rd
90th St
Frank Lloyd Wright Blvd
LEGEND
XX(XX)
AM(PM) PEAK HOUR
PASSENGER CAR TRAFFIC
VOLUMES


NORTH
Pima Rd
SR101 NB Frontage Road
SR101 SB Frontage Road
Princess Dr
Trailside View
91st St
90th St
Bell Rd
Frank Lloyd Wright Blvd
101
D1
D2
D3
5(2)
1(4)
2(8)
3(1)
8(3)
3(1)
5(2)
1(4)
3(11)
4(2)
1(4)
1(0)
2(1)
3(1)
2(1)
3(1)
1(4)
1(4)
1(4)
4(2)
1(4)
5(2)
49
25
49
30
74
19
19
25
20
25
25
20
25
25
20
29
LEGEND
XX(XX) AM(PM) PEAK HOUR TRUCK TRAFFIC VOLUMES
XX AVERAGE DAILY INBOUND TRAFFIC VOLUME
XX AVERAGE DAILY OUTBOUND TRAFFIC VOLUME
TRUCK INGRESS ROUTE FROM SOUTH
TRUCK EGRESS ROUTE TO SOUTH
TRUCK INGRESS ROUTE FROM NORTH
TRUCK EGRESS ROUTE TO NORTH

# City of Scottsdale
# Average Daily Traffic Volume Maps

# City of Scottsdale
# 2014
# Average Daily Traffic Volumes
# SEGMENT



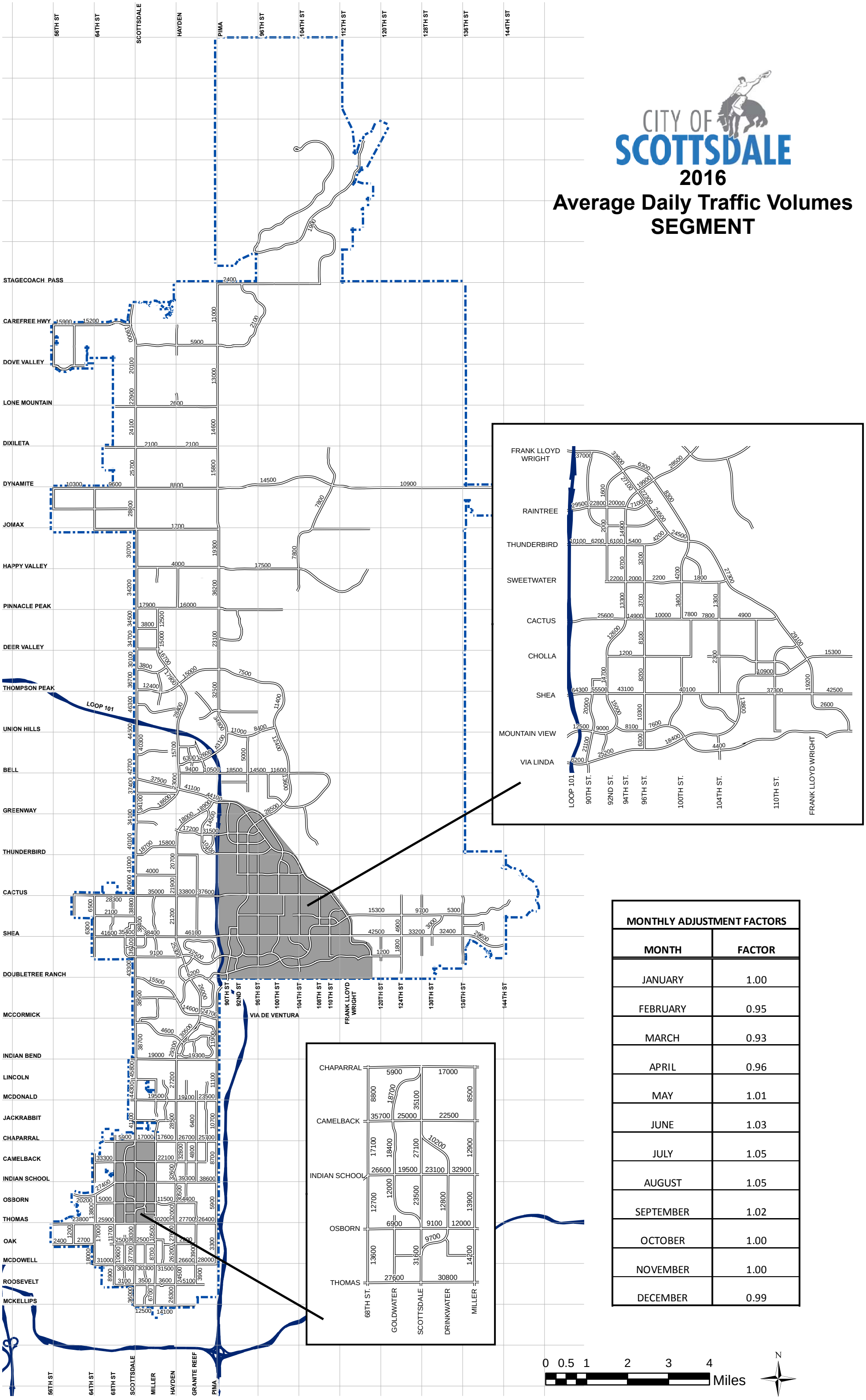

| MONTHLY ADJUSTMENT FACTORS | |
|---|---|
| **MONTH** | **FACTOR** |
| JANUARY | 1.00 |
| FEBRUARY | 0.96 |
| MARCH | 0.97 |
| APRIL | 0.97 |
| MAY | 0.98 |
| JUNE | 1.02 |
| JULY | 1.08 |
| AUGUST | 1.03 |
| SEPTEMBER | 1.00 |
| OCTOBER | 1.02 |
| NOVEMBER | 0.99 |
| DECEMBER | 1.02 |

0 0.5 1 2 3 4 Miles

N

CITY OF SCOTTSDALE

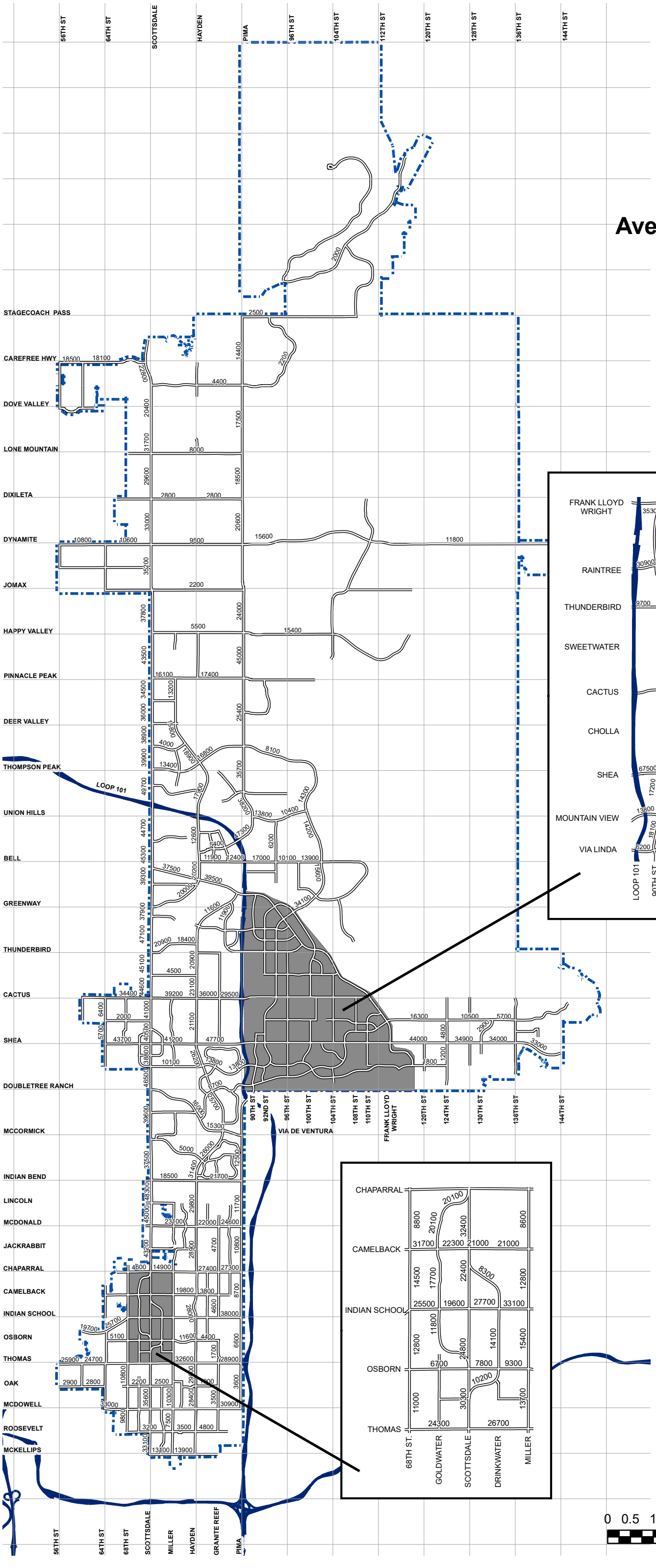
# 2016
# Average Daily Traffic Volumes
# SEGMENT

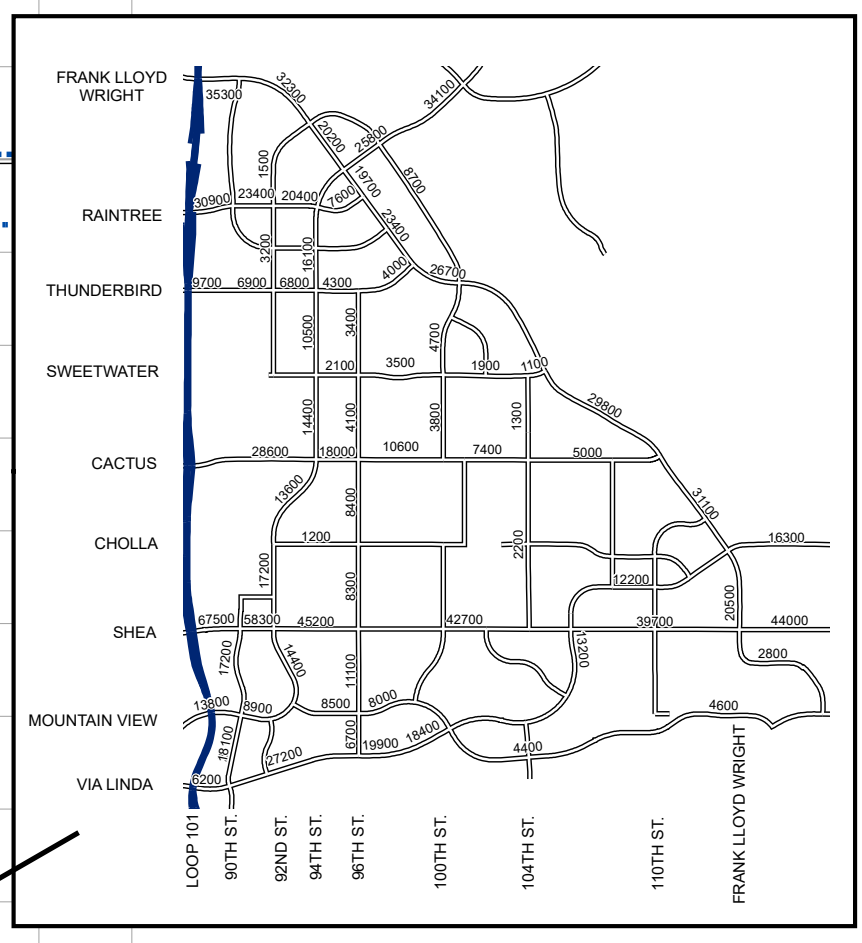



| MONTHLY ADJUSTMENT FACTORS | |
|---|---|
| MONTH | FACTOR |
| JANUARY | 1.00 |
| FEBRUARY | 0.95 |
| MARCH | 0.93 |
| APRIL | 0.96 |
| MAY | 1.01 |
| JUNE | 1.03 |
| JULY | 1.05 |
| AUGUST | 1.05 |
| SEPTEMBER | 1.02 |
| OCTOBER | 1.00 |
| NOVEMBER | 1.00 |
| DECEMBER | 0.99 |

CITY OF SCOTTSDALE

# 2018
# Average Daily Traffic Volumes
# SEGMENT





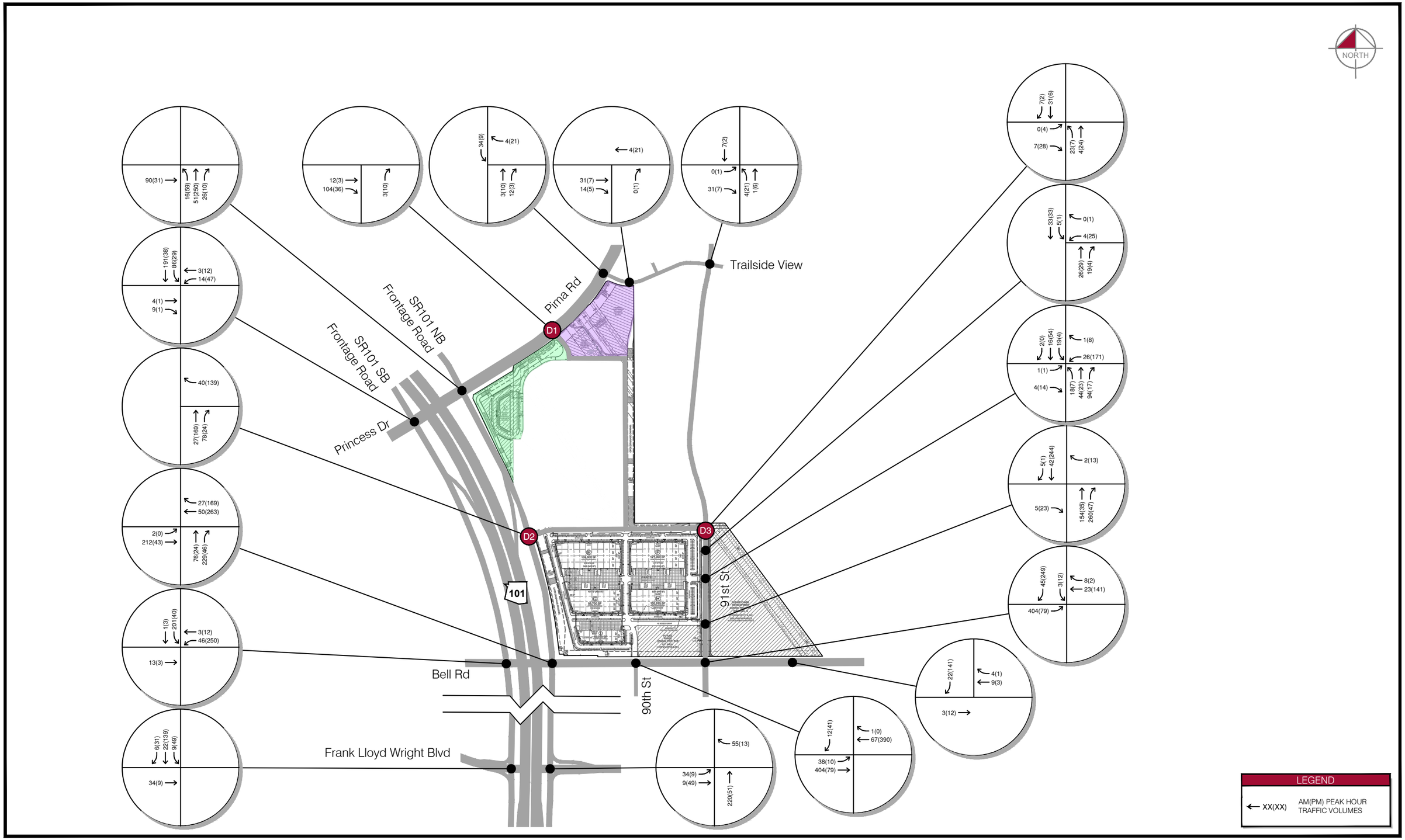


| CITYWIDE MONTHLY ADJUSTMENT FACTORS | |
|---|---|
| **MONTH** | **FACTOR** |
| JANUARY | 1.00 |
| FEBRUARY | 0.95 |
| MARCH | 0.93 |
| APRIL | 0.96 |
| MAY | 1.01 |
| JUNE | 1.03 |
| JULY | 1.05 |
| AUGUST | 1.05 |
| SEPTEMBER | 1.02 |
| OCTOBER | 1.00 |
| NOVEMBER | 1.00 |
| DECEMBER | 0.99 |

0 0.5 1 2 3 4 Miles

N

# Background Traffic Assignment


NORTH
Pima Rd
SR101 NB Frontage Road
SR101 SB Frontage Road
Princess Dr
Trailside View
Bell Rd
90th St
91st St
Frank Lloyd Wright Blvd
101
D1
D2
D3
90(31)
16(59)
51(250)
26(10)
12(3)
104(36)
3(10)
34(9)
4(21)
3(10)
12(3)
31(7)
14(5)
4(21)
0(1)
7(2)
0(1)
31(7)
4(21)
1(6)
191(38)
86(29)
3(12)
14(47)
4(1)
9(1)
40(139)
27(169)
78(24)
27(169)
50(263)
2(0)
212(43)
76(24)
229(46)
1(3)
201(40)
3(12)
46(250)
13(3)
8(31)
22(139)
9(49)
34(9)
7(2)
31(6)
0(4)
7(28)
23(7)
4(24)
33(33)
5(1)
0(1)
4(25)
26(29)
19(4)
2(0)
16(54)
19(4)
1(8)
26(171)
1(1)
4(14)
18(7)
44(23)
94(17)
5(1)
42(244)
2(13)
5(23)
154(35)
260(47)
45(249)
3(12)
8(2)
23(141)
404(79)
22(141)
4(1)
9(3)
3(12)
55(13)
34(9)
9(49)
220(51)
12(41)
1(0)
67(390)
38(10)
404(79)
LEGEND
XX(XX)
AM(PM) PEAK HOUR TRAFFIC VOLUMES

# 2025 Background AM
# Traffic Capacity Analysis

| Phase Number | 2 | 4 | 5 | 6 |
|---|---|---|---|---|
| Movement | SBTL | WBL | SBL | NBT |
| Lead/Lag | | | Lead | Lag |
| Lead-Lag Optimize | | | Yes | Yes |
| Recall Mode | C-Max | Max | None | C-Max |
| Maximum Split (s) | 90 | 30 | 12 | 78 |
| Maximum Split (%) | 75.0% | 25.0% | 10.0% | 65.0% |
| Minimum Split (s) | 22.5 | 22.5 | 9.5 | 22.5 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1 | 1 | 1 | 1 |
| Minimum Initial (s) | 5 | 5 | 5 | 5 |
| Vehicle Extension (s) | 3 | 3 | 3 | 3 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 |
| Walk Time (s) | 7 | 7 | | 7 |
| Flash Dont Walk (s) | 11 | 11 | | 11 |
| Dual Entry | Yes | Yes | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes |
| Start Time (s) | 108 | 78 | 108 | 0 |
| End Time (s) | 78 | 108 | 0 | 78 |
| Yield/Force Off (s) | 73.5 | 103.5 | 115.5 | 73.5 |
| Yield/Force Off 170(s) | 62.5 | 92.5 | 115.5 | 62.5 |
| Local Start Time (s) | 108 | 78 | 108 | 0 |
| Local Yield (s) | 73.5 | 103.5 | 115.5 | 73.5 |
| Local Yield 170(s) | 62.5 | 92.5 | 115.5 | 62.5 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 60 |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of Green | |

Splits and Phases: 4: Pima Rd & Trailside View

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 67 | 14 | 1744 | 157 | 5 | 1636 |
| Future Volume (veh/h) | 67 | 14 | 1744 | 157 | 5 | 1636 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 89 | 19 | 1896 | 171 | 5 | 1778 |
| Peak Hour Factor | 0.75 | 0.75 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 379 | 337 | 3414 | 1060 | 167 | 3638 |
| Arrive On Green | 0.21 | 0.21 | 0.67 | 0.67 | 0.01 | 0.71 |
| Sat Flow, veh/h | 1781 | 1585 | 5274 | 1585 | 1781 | 5274 |
| Grp Volume(v), veh/h | 89 | 19 | 1896 | 171 | 5 | 1778 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1585 | 1702 | 1585 | 1781 | 1702 |
| Q Serve(g_s), s | 5.0 | 1.1 | 23.5 | 4.8 | 0.1 | 18.4 |
| Cycle Q Clear(g_c), s | 5.0 | 1.1 | 23.5 | 4.8 | 0.1 | 18.4 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 379 | 337 | 3414 | 1060 | 167 | 3638 |
| V/C Ratio(X) | 0.24 | 0.06 | 0.56 | 0.16 | 0.03 | 0.49 |
| Avail Cap(c_a), veh/h | 379 | 337 | 3414 | 1060 | 267 | 3638 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 39.2 | 37.7 | 10.5 | 7.4 | 8.5 | 7.6 |
| Incr Delay (d2), s/veh | 1.5 | 0.3 | 0.7 | 0.3 | 0.1 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.2 | 2.1 | 12.3 | 2.7 | 0.1 | 9.5 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 40.6 | 38.0 | 11.1 | 7.7 | 8.6 | 8.1 |
| LnGrp LOS | D | D | B | A | A | A |
| Approach Vol, veh/h | 108 | | 2067 | | | 1783 |
| Approach Delay, s/veh | 40.2 | | 10.9 | | | 8.1 |
| Approach LOS | D | | B | | | A |

| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 90.0 | | 30.0 | 5.3 | 84.7 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | 85.5 | | 25.5 | 7.5 | 73.5 |
| Max Q Clear Time (g_c+I1), s | | 20.4 | | 7.0 | 2.1 | 25.5 |
| Green Ext Time (p_c), s | | 20.8 | | 0.2 | 0.0 | 22.7 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 10.4 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 9.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 8 | 72 | 80 | 1 | 47 | 1 | 52 | 1 | 1 | 1 | 1 | 5 |
| Future Vol, veh/h | 8 | 72 | 80 | 1 | 47 | 1 | 52 | 1 | 1 | 1 | 1 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 125 | - | - | - | 150 | - | - | 160 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 10 | 90 | 100 | 1 | 59 | 1 | 65 | 1 | 1 | 1 | 1 | 6 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 168 | 138 | 4 | 233 | 141 | 2 | 7 | 0 | 0 | 2 | 0 | 0 |
| Stage 1 | 6 | 6 | - | 132 | 132 | - | - | - | - | - | - | - |
| Stage 2 | 162 | 132 | - | 101 | 9 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 796 | 753 | 1080 | 722 | 750 | 1082 | 1614 | - | - | 1620 | - | - |
| Stage 1 | 1016 | 891 | - | 871 | 787 | - | - | - | - | - | - | - |
| Stage 2 | 840 | 787 | - | 905 | 888 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 723 | 722 | 1080 | 575 | 719 | 1082 | 1614 | - | - | 1620 | - | - |
| Mov Cap-2 Maneuver | 723 | 722 | - | 575 | 719 | - | - | - | - | - | - | - |
| Stage 1 | 975 | 890 | - | 836 | 756 | - | - | - | - | - | - | - |
| Stage 2 | 743 | 756 | - | 738 | 887 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 9.8 | 10.5 | 7.1 | 1 |
| HCM LOS | A | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1614 | - | - | 722 | 1080 | 720 | 1620 | - | - |
| HCM Lane V/C Ratio | 0.04 | - | - | 0.139 | 0.093 | 0.085 | 0.001 | - | - |
| HCM Control Delay (s) | 7.3 | - | - | 10.8 | 8.7 | 10.5 | 7.2 | - | - |
| HCM Lane LOS | A | - | - | B | A | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.5 | 0.3 | 0.3 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.7 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1122 | 57 | 24 | 957 | 11 | 13 |
| Future Vol, veh/h | 1122 | 57 | 24 | 957 | 11 | 13 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 150 | 60 | - | 100 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 89 | 89 | 83 | 83 | 79 | 79 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1261 | 64 | 29 | 1153 | 14 | 16 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1325 | 0 | 1896 | 631 |
| Stage 1 | - | - | - | - | 1261 | - |
| Stage 2 | - | - | - | - | 635 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 517 | - | 61 | 424 |
| Stage 1 | - | - | - | - | 230 | - |
| Stage 2 | - | - | - | - | 490 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 517 | - | 58 | 424 |
| Mov Cap-2 Maneuver | - | - | - | - | 58 | - |
| Stage 1 | - | - | - | - | 230 | - |
| Stage 2 | - | - | - | - | 463 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.3 | 46.8 |
| HCM LOS | | | E |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 58 | 424 | - | - | 517 | - |
| HCM Lane V/C Ratio | 0.24 | 0.039 | - | - | 0.056 | - |
| HCM Control Delay (s) | 85.7 | 13.8 | - | - | 12.4 | - |
| HCM Lane LOS | F | B | - | - | B | - |
| HCM 95th %tile Q(veh) | 0.8 | 0.1 | - | - | 0.2 | - |

| Phase Number | 4 | 6 | 7 | 8 |
|---|---|---|---|---|
| Movement | WBTL | NBL | WBL | EBT |
| Lead/Lag | | | Lag | Lead |
| Lead-Lag Optimize | | | | |
| Recall Mode | C-Max | None | None | C-Max |
| Maximum Split (s) | 99 | 21 | 11 | 88 |
| Maximum Split (%) | 82.5% | 17.5% | 9.2% | 73.3% |
| Minimum Split (s) | 22.5 | 11 | 11 | 38.7 |
| Yellow Time (s) | 4.7 | 4 | 4 | 4.7 |
| All-Red Time (s) | 1.2 | 2 | 2 | 1 |
| Minimum Initial (s) | 10 | 5 | 5 | 10 |
| Vehicle Extension (s) | 2 | 3 | 2 | 2 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 |
| Walk Time (s) | | | | 8 |
| Flash Dont Walk (s) | | | | 24 |
| Dual Entry | Yes | No | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes |
| Start Time (s) | 37.7 | 16.7 | 5.7 | 37.7 |
| End Time (s) | 16.7 | 37.7 | 16.7 | 5.7 |
| Yield/Force Off (s) | 10.8 | 31.7 | 10.7 | 0 |
| Yield/Force Off 170(s) | 10.8 | 31.7 | 10.7 | 96 |
| Local Start Time (s) | 37.7 | 16.7 | 5.7 | 37.7 |
| Local Yield (s) | 10.8 | 31.7 | 10.7 | 0 |
| Local Yield 170(s) | 10.8 | 31.7 | 10.7 | 96 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 65 |
| Offset: 0 (0%), Referenced to phase 4:WBTL and 8:EBT, Start of Yellow | |

Splits and Phases: 16: 91st Street & Bell Rd

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1012 | 123 | 30 | 920 | 62 | 14 |
| Future Volume (veh/h) | 1012 | 123 | 30 | 920 | 62 | 14 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1163 | 98 | 35 | 1082 | 95 | 16 |
| Peak Hour Factor | 0.87 | 0.87 | 0.85 | 0.85 | 0.65 | 0.65 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 2437 | 1087 | 505 | 3041 | 153 | 70 |
| Arrive On Green | 0.69 | 0.69 | 0.12 | 0.86 | 0.04 | 0.04 |
| Sat Flow, veh/h | 3647 | 1585 | 1781 | 3647 | 3456 | 1585 |
| Grp Volume(v), veh/h | 1163 | 98 | 35 | 1082 | 95 | 16 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1585 | 1781 | 1777 | 1728 | 1585 |
| Q Serve(g_s), s | 18.3 | 2.5 | 0.0 | 7.6 | 3.2 | 1.2 |
| Cycle Q Clear(g_c), s | 18.3 | 2.5 | 0.0 | 7.6 | 3.2 | 1.2 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 2437 | 1087 | 505 | 3041 | 153 | 70 |
| V/C Ratio(X) | 0.48 | 0.09 | 0.07 | 0.36 | 0.62 | 0.23 |
| Avail Cap(c_a), veh/h | 2437 | 1087 | 505 | 3041 | 432 | 198 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 8.8 | 6.3 | 8.5 | 1.8 | 56.4 | 55.4 |
| Incr Delay (d2), s/veh | 0.7 | 0.2 | 0.0 | 0.3 | 4.1 | 1.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 10.3 | 1.4 | 0.6 | 2.0 | 2.7 | 1.9 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 9.5 | 6.5 | 8.5 | 2.1 | 60.5 | 57.0 |
| LnGrp LOS | A | A | A | A | E | E |
| Approach Vol, veh/h | 1261 | | | 1117 | 111 | |
| Approach Delay, s/veh | 9.2 | | | 2.3 | 60.0 | |
| Approach LOS | A | | | A | E | |

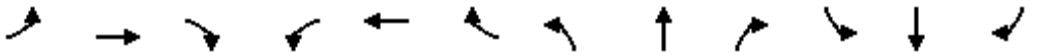
| Timer - Assigned Phs | 4 | 6 | 7 | 8 |
|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 108.7 | 11.3 | 20.7 | 88.0 |
| Change Period (Y+Rc), s | * 6 | 6.0 | 6.0 | 5.7 |
| Max Green Setting (Gmax), s | * 93 | 15.0 | 5.0 | 82.3 |
| Max Q Clear Time (g_c+I1), s | 9.6 | 5.2 | 2.0 | 20.3 |
| Green Ext Time (p_c), s | 5.3 | 0.2 | 0.0 | 6.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 8.4 |
| HCM 6th LOS | A |

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



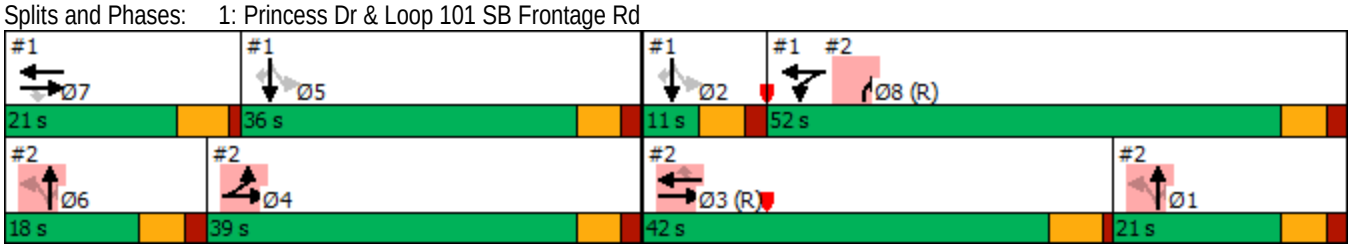
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 182 | 85 | 1291 | 458 | 0 | 0 | 0 | 0 | 586 | 656 | 254 |
| Future Volume (vph) | 0 | 182 | 85 | 1291 | 458 | 0 | 0 | 0 | 0 | 586 | 656 | 254 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 140 | | 245 | 240 | | 0 | 0 | | 0 | 355 | | 355 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 2 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 0.88 | 0.94 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.996 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.990 | |
| Satd. Flow (prot) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3159 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.990 | |
| Satd. Flow (perm) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3159 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 188 | | | | | | | | 2 | 254 |
| Link Speed (mph) | | 35 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 1345 | | | 409 | | | 1261 | | | 718 | |
| Travel Time (s) | | 26.2 | | | 6.2 | | | 28.7 | | | 10.9 | |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 202 | 94 | 1434 | 509 | 0 | 0 | 0 | 0 | 651 | 729 | 282 |
| Shared Lane Traffic (%) | | | | | | | | | | 30% | | 10% |
| Lane Group Flow (vph) | 0 | 202 | 94 | 1434 | 509 | 0 | 0 | 0 | 0 | 456 | 952 | 254 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Right | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 36 | | | 36 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 2 5 | |
| Permitted Phases | | | 7 | | | | | | | 2 5 | | 2 5 |

| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | | | | | | |
| Future Volume (vph) | | | | | | |
| Ideal Flow (vphpl) | | | | | | |
| Storage Length (ft) | | | | | | |
| Storage Lanes | | | | | | |
| Taper Length (ft) | | | | | | |
| Lane Util. Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | | | | | | |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | | | | | | |
| Right Turn on Red | | | | | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | | | | | |
| Link Distance (ft) | | | | | | |
| Travel Time (s) | | | | | | |
| Peak Hour Factor | | | | | | |
| Adj. Flow (vph) | | | | | | |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | | | | | | |
| Enter Blocked Intersection | | | | | | |
| Lane Alignment | | | | | | |
| Median Width(ft) | | | | | | |
| Link Offset(ft) | | | | | | |
| Crosswalk Width(ft) | | | | | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | | | | | | |
| Turning Speed (mph) | | | | | | |
| Number of Detectors | | | | | | |
| Detector Template | | | | | | |
| Leading Detector (ft) | | | | | | |
| Trailing Detector (ft) | | | | | | |
| Detector 1 Position(ft) | | | | | | |
| Detector 1 Size(ft) | | | | | | |
| Detector 1 Type | | | | | | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | | | | | | |
| Detector 1 Queue (s) | | | | | | |
| Detector 1 Delay (s) | | | | | | |
| Detector 2 Position(ft) | | | | | | |
| Detector 2 Size(ft) | | | | | | |
| Detector 2 Type | | | | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | | | | |
| Turn Type | | | | | | |
| Protected Phases | 1 | 2 | 3 | 4 | 5 | 6 |
| Permitted Phases | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 7 | 7 | 8 | 7 8 | | | | | 2 5 | 2 5 | 2 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 7.0 | 7.0 | 5.0 | | | | | | | | |
| Minimum Split (s) | | 26.7 | 26.7 | 11.0 | | | | | | | | |
| Total Split (s) | | 21.0 | 21.0 | 52.0 | | | | | | | | |
| Total Split (%) | | 17.5% | 17.5% | 43.3% | | | | | | | | |
| Maximum Green (s) | | 15.3 | 15.3 | 46.0 | | | | | | | | |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | | | | | | | | |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | | | | | | | | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | | | | | | | | |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | | | | | | | | |
| Lead/Lag | | Lead | Lead | Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | | | | | | | | |
| Recall Mode | | None | None | C-Min | | | | | | | | |
| Walk Time (s) | | 4.0 | 4.0 | | | | | | | | | |
| Flash Dont Walk (s) | | 17.0 | 17.0 | | | | | | | | | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | | | | | | | | |
| Act Effct Green (s) | | 10.5 | 10.5 | 46.6 | 63.1 | | | | | 45.2 | 45.2 | 45.2 |
| Actuated g/C Ratio | | 0.09 | 0.09 | 0.39 | 0.53 | | | | | 0.38 | 0.38 | 0.38 |
| v/c Ratio | | 0.45 | 0.23 | 0.74 | 0.27 | | | | | 0.75 | 0.80 | 0.36 |
| Control Delay | | 54.8 | 1.3 | 18.3 | 2.0 | | | | | 42.3 | 39.8 | 4.8 |
| Queue Delay | | 0.0 | 0.0 | 9.5 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 54.8 | 1.3 | 27.8 | 2.0 | | | | | 42.3 | 39.8 | 4.8 |
| LOS | | D | A | C | A | | | | | D | D | A |
| Approach Delay | | 37.8 | | | 21.0 | | | | | | 35.2 | |
| Approach LOS | | D | | | C | | | | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 47 (39%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.37 | | | |
| Intersection Signal Delay: 28.3 | | Intersection LOS: C | |
| Intersection Capacity Utilization 100.3% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Princess Dr & Loop 101 SB Frontage Rd



| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Detector Phase | | | | | | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 10.0 | 5.0 | 7.0 | 1.0 |
| Minimum Split (s) | 13.0 | 7.0 | 26.7 | 11.0 | 50.0 | 7.0 |
| Total Split (s) | 21.0 | 11.0 | 42.0 | 39.0 | 36.0 | 18.0 |
| Total Split (%) | 18% | 9% | 35% | 33% | 30% | 15% |
| Maximum Green (s) | 15.0 | 5.0 | 36.3 | 33.0 | 30.0 | 12.0 |
| Yellow Time (s) | 4.0 | 4.0 | 4.7 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | | | | | |
| Total Lost Time (s) | | | | | | |
| Lead/Lag | Lag | Lead | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 5.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | C-Min | None | None | None |
| Walk Time (s) | | | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | | 17.0 | | 40.0 | |
| Pedestrian Calls (#/hr) | | | 0 | | 0 | |
| Act Effct Green (s) | | | | | | |
| Actuated g/C Ratio | | | | | | |
| v/c Ratio | | | | | | |
| Control Delay | | | | | | |
| Queue Delay | | | | | | |
| Total Delay | | | | | | |
| LOS | | | | | | |
| Approach Delay | | | | | | |
| Approach LOS | | | | | | |

| Intersection Summary |
|---|

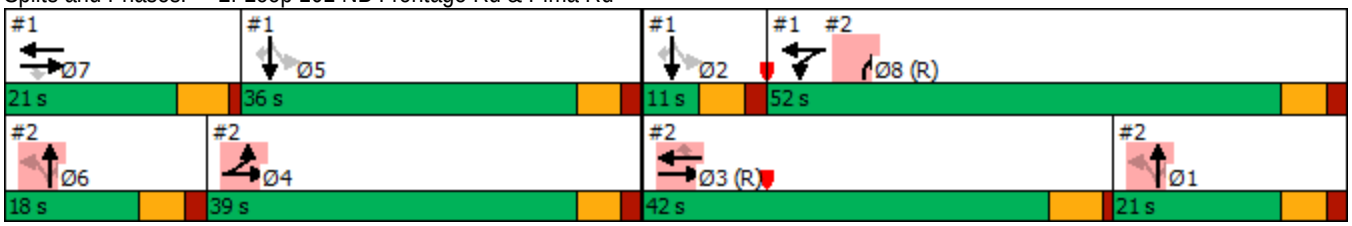
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 29 | 708 | 0 | 0 | 1417 | 358 | 380 | 432 | 1146 | 0 | 0 | 0 |
| Future Volume (vph) | 29 | 708 | 0 | 0 | 1417 | 358 | 380 | 432 | 1146 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 265 | | 0 | 350 | | 285 | 275 | | 275 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.81 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.989 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3353 | 1583 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.989 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3353 | 1583 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 398 | | | 211 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 409 | | | 1059 | | | 1024 | | | 527 | |
| Travel Time (s) | | 6.2 | | | 16.0 | | | 15.5 | | | 12.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 32 | 787 | 0 | 0 | 1574 | 398 | 422 | 480 | 1273 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 31% | | | | | |
| Lane Group Flow (vph) | 32 | 787 | 0 | 0 | 1574 | 398 | 291 | 611 | 1273 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | L NA | Right | Left | Left | Right | Left | Left | R NA | Left | Left | Right |
| Median Width(ft) | | 24 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | custom | | | |
| Protected Phases | 4 | 3 4! | | | 3 | | | 1 6 | 8! | | | |
| Permitted Phases | | | | | | 3 | 1 6 | | 1 6 | | | |

| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 |
|---|---|---|---|---|---|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | | | | | |
| Future Volume (vph) | | | | | |
| Ideal Flow (vphpl) | | | | | |
| Storage Length (ft) | | | | | |
| Storage Lanes | | | | | |
| Taper Length (ft) | | | | | |
| Lane Util. Factor | | | | | |
| Frt | | | | | |
| Flt Protected | | | | | |
| Satd. Flow (prot) | | | | | |
| Flt Permitted | | | | | |
| Satd. Flow (perm) | | | | | |
| Right Turn on Red | | | | | |
| Satd. Flow (RTOR) | | | | | |
| Link Speed (mph) | | | | | |
| Link Distance (ft) | | | | | |
| Travel Time (s) | | | | | |
| Peak Hour Factor | | | | | |
| Adj. Flow (vph) | | | | | |
| Shared Lane Traffic (%) | | | | | |
| Lane Group Flow (vph) | | | | | |
| Enter Blocked Intersection | | | | | |
| Lane Alignment | | | | | |
| Median Width(ft) | | | | | |
| Link Offset(ft) | | | | | |
| Crosswalk Width(ft) | | | | | |
| Two way Left Turn Lane | | | | | |
| Headway Factor | | | | | |
| Turning Speed (mph) | | | | | |
| Number of Detectors | | | | | |
| Detector Template | | | | | |
| Leading Detector (ft) | | | | | |
| Trailing Detector (ft) | | | | | |
| Detector 1 Position(ft) | | | | | |
| Detector 1 Size(ft) | | | | | |
| Detector 1 Type | | | | | |
| Detector 1 Channel | | | | | |
| Detector 1 Extend (s) | | | | | |
| Detector 1 Queue (s) | | | | | |
| Detector 1 Delay (s) | | | | | |
| Detector 2 Position(ft) | | | | | |
| Detector 2 Size(ft) | | | | | |
| Detector 2 Type | | | | | |
| Detector 2 Channel | | | | | |
| Detector 2 Extend (s) | | | | | |
| Turn Type | | | | | |
| Protected Phases | 1 | 2 | 5 | 6 | 7 |
| Permitted Phases | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 4 | 3 4 | | | 3 | 3 | 1 6 | 1 6 | 8 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 10.0 | 10.0 | | | 5.0 | | | |
| Minimum Split (s) | 11.0 | | | | 26.7 | 26.7 | | | 11.0 | | | |
| Total Split (s) | 39.0 | | | | 42.0 | 42.0 | | | 52.0 | | | |
| Total Split (%) | 32.5% | | | | 35.0% | 35.0% | | | 43.3% | | | |
| Maximum Green (s) | 33.0 | | | | 36.3 | 36.3 | | | 46.0 | | | |
| Yellow Time (s) | 4.0 | | | | 4.7 | 4.7 | | | 4.0 | | | |
| All-Red Time (s) | 2.0 | | | | 1.0 | 1.0 | | | 2.0 | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | 0.0 | | | 0.0 | | | |
| Total Lost Time (s) | 6.0 | | | | 5.7 | 5.7 | | | 6.0 | | | |
| Lead/Lag | Lag | | | | Lead | Lead | | | Lag | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 5.0 | 5.0 | | | 2.0 | | | |
| Recall Mode | None | | | | C-Min | C-Min | | | C-Min | | | |
| Walk Time (s) | | | | | 4.0 | 4.0 | | | | | | |
| Flash Dont Walk (s) | | | | | 17.0 | 17.0 | | | | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | 0 | | | | | | |
| Act Effct Green (s) | 33.4 | 77.2 | | | 37.8 | 37.8 | 31.1 | 31.1 | 62.7 | | | |
| Actuated g/C Ratio | 0.28 | 0.64 | | | 0.32 | 0.32 | 0.26 | 0.26 | 0.52 | | | |
| v/c Ratio | 0.07 | 0.35 | | | 0.66 | 0.52 | 0.70 | 0.70 | 1.37 | | | |
| Control Delay | 21.3 | 2.9 | | | 31.5 | 6.9 | 49.7 | 45.0 | 198.0 | | | |
| Queue Delay | 0.0 | 0.7 | | | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 21.3 | 3.6 | | | 32.2 | 6.9 | 49.7 | 45.0 | 198.0 | | | |
| LOS | C | A | | | C | A | D | D | F | | | |
| Approach Delay | | 4.3 | | | 27.1 | | | 135.2 | | | | |
| Approach LOS | | A | | | C | | | F | | | | |

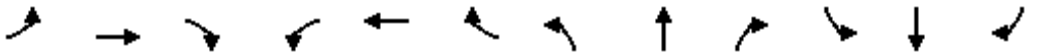
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 47 (39%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.37 | | | |
| Intersection Signal Delay: 70.7 | | Intersection LOS: E | |
| Intersection Capacity Utilization 100.3% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |
| ! Phase conflict between lane groups. | | | |

Splits and Phases: 2: Loop 101 NB Frontage Rd & Pima Rd



| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 |
|---|---|---|---|---|---|
| Detector Phase | | | | | |
| Switch Phase | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 7.0 | 1.0 | 7.0 |
| Minimum Split (s) | 13.0 | 7.0 | 50.0 | 7.0 | 26.7 |
| Total Split (s) | 21.0 | 11.0 | 36.0 | 18.0 | 21.0 |
| Total Split (%) | 18% | 9% | 30% | 15% | 18% |
| Maximum Green (s) | 15.0 | 5.0 | 30.0 | 12.0 | 15.3 |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.7 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 1.0 |
| Lost Time Adjust (s) | | | | | |
| Total Lost Time (s) | | | | | |
| Lead/Lag | Lag | Lead | Lag | Lead | Lead |
| Lead-Lag Optimize? | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | None | None | None |
| Walk Time (s) | | | 4.0 | | 4.0 |
| Flash Dont Walk (s) | | | 40.0 | | 17.0 |
| Pedestrian Calls (#/hr) | | | 0 | | 0 |
| Act Effct Green (s) | | | | | |
| Actuated g/C Ratio | | | | | |
| v/c Ratio | | | | | |
| Control Delay | | | | | |
| Queue Delay | | | | | |
| Total Delay | | | | | |
| LOS | | | | | |
| Approach Delay | | | | | |
| Approach LOS | | | | | |

| Intersection Summary |
|---|



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 330 | 123 | 502 | 522 | 0 | 0 | 0 | 0 | 600 | 160 | 42 |
| Future Volume (vph) | 0 | 330 | 123 | 502 | 522 | 0 | 0 | 0 | 0 | 600 | 160 | 42 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 240 | | 315 | 220 | | 0 | 0 | | 0 | 385 | | 385 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.999 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.969 | |
| Satd. Flow (prot) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3101 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.969 | |
| Satd. Flow (perm) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3101 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 145 | | | | | | | | | 92 |
| Link Speed (mph) | | 45 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 824 | | | 389 | | | 598 | | | 1243 | |
| Travel Time (s) | | 12.5 | | | 5.9 | | | 13.6 | | | 18.8 | |
| Peak Hour Factor | 0.25 | 0.85 | 0.85 | 0.89 | 0.89 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 388 | 145 | 564 | 587 | 0 | 0 | 0 | 0 | 667 | 178 | 47 |
| Shared Lane Traffic (%) | | | | | | | | | | 50% | | 10% |
| Lane Group Flow (vph) | 0 | 388 | 145 | 564 | 587 | 0 | 0 | 0 | 0 | 333 | 517 | 42 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | | | | | 2 | |
| Permitted Phases | | | 8 | | | | | | | 2 | | 2 |

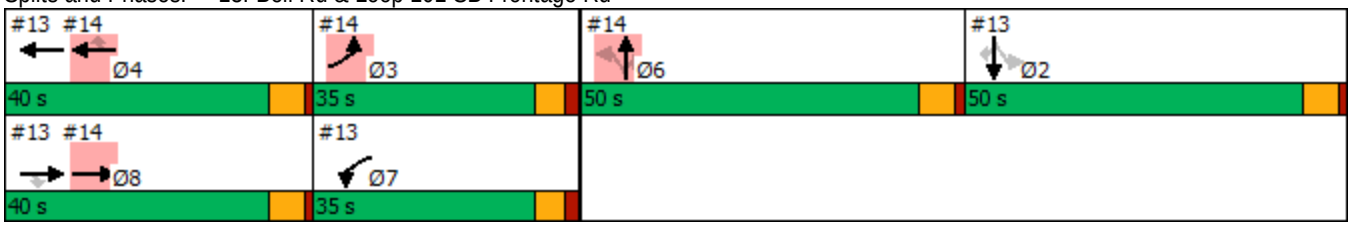
| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 3 | 6 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 8 | 8 | 7 | 4 | | | | | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 10.0 | 10.0 | 5.0 | 10.0 | | | | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | | 35.7 | 35.7 | 11.0 | 39.7 | | | | | 50.9 | 50.9 | 50.9 |
| Total Split (s) | | 40.0 | 40.0 | 35.0 | 40.0 | | | | | 50.0 | 50.0 | 50.0 |
| Total Split (%) | | 22.9% | 22.9% | 20.0% | 22.9% | | | | | 28.6% | 28.6% | 28.6% |
| Maximum Green (s) | | 34.3 | 34.3 | 29.0 | 34.3 | | | | | 44.1 | 44.1 | 44.1 |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | 4.7 | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | 1.0 | | | | | 1.2 | 1.2 | 1.2 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | 5.7 | | | | | 5.9 | 5.9 | 5.9 |
| Lead/Lag | | Lead | Lead | Lag | Lead | | | | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | 2.0 | 2.0 | 2.0 |
| Recall Mode | | Min | Min | None | None | | | | | None | None | None |
| Walk Time (s) | | 7.0 | 7.0 | | 8.0 | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 23.0 | 23.0 | | 26.0 | | | | | 38.0 | 38.0 | 38.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 34.7 | 34.7 | 28.9 | 31.3 | | | | | 36.2 | 36.2 | 36.2 |
| Actuated g/C Ratio | | 0.22 | 0.22 | 0.19 | 0.20 | | | | | 0.23 | 0.23 | 0.23 |
| v/c Ratio | | 0.34 | 0.31 | 0.88 | 0.82 | | | | | 0.89 | 0.89dl | 0.10 |
| Control Delay | | 54.0 | 9.8 | 80.3 | 41.1 | | | | | 83.5 | 61.3 | 0.5 |
| Queue Delay | | 0.5 | 0.0 | 13.5 | 0.2 | | | | | 22.6 | 1.2 | 0.0 |
| Total Delay | | 54.5 | 9.8 | 93.9 | 41.3 | | | | | 106.1 | 62.5 | 0.5 |
| LOS | | D | A | F | D | | | | | F | E | A |
| Approach Delay | | 42.3 | | | 67.1 | | | | | | 75.9 | |
| Approach LOS | | D | | | E | | | | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 155.3 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.29 | | | |
| Intersection Signal Delay: 65.0 | | Intersection LOS: E | |
| Intersection Capacity Utilization 68.1% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

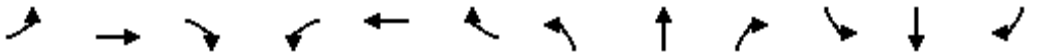
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 13: Bell Rd & Loop 101 SB Frontage Rd



| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 5.0 | 7.0 |
| Minimum Split (s) | 11.0 | 48.0 |
| Total Split (s) | 35.0 | 50.0 |
| Total Split (%) | 20% | 29% |
| Maximum Green (s) | 29.0 | 44.0 |
| Yellow Time (s) | 4.0 | 4.7 |
| All-Red Time (s) | 2.0 | 1.3 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lead |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | Min | None |
| Walk Time (s) | | 7.0 |
| Flash Dont Walk (s) | | 35.0 |
| Pedestrian Calls (#/hr) | | 0 |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|



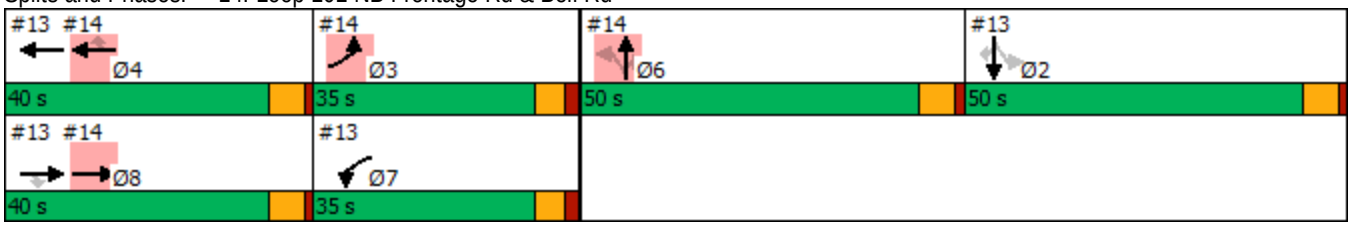
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 15 | 915 | 0 | 0 | 633 | 349 | 390 | 191 | 331 | 0 | 0 | 0 |
| Future Volume (vph) | 15 | 915 | 0 | 0 | 633 | 349 | 390 | 191 | 331 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 220 | | 0 | 235 | | 175 | 310 | | 310 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.86 | 1.00 | 0.91 | 0.86 | 0.91 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | 0.962 | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.984 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3033 | 1441 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.984 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3033 | 1441 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 384 | | 21 | 236 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 389 | | | 797 | | | 655 | | | 974 | |
| Travel Time (s) | | 5.9 | | | 12.1 | | | 9.9 | | | 22.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 17 | 1017 | 0 | 0 | 711 | 388 | 433 | 212 | 368 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 40% | | 36% | | | |
| Lane Group Flow (vph) | 17 | 1017 | 0 | 0 | 711 | 388 | 260 | 517 | 236 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | Perm | | | |
| Protected Phases | 3 | 8 | | | 4 | | | 6 | | | | |
| Permitted Phases | | | | | | 4 | 6 | | 6 | | | |

| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 2 | 7 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 3 | 8 | | | 4 | 4 | 6 | 6 | 6 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | | | 10.0 | 10.0 | 7.0 | 7.0 | 7.0 | | | |
| Minimum Split (s) | 11.0 | 35.7 | | | 39.7 | 39.7 | 48.0 | 48.0 | 48.0 | | | |
| Total Split (s) | 35.0 | 40.0 | | | 40.0 | 40.0 | 50.0 | 50.0 | 50.0 | | | |
| Total Split (%) | 20.0% | 22.9% | | | 22.9% | 22.9% | 28.6% | 28.6% | 28.6% | | | |
| Maximum Green (s) | 29.0 | 34.3 | | | 34.3 | 34.3 | 44.0 | 44.0 | 44.0 | | | |
| Yellow Time (s) | 4.0 | 4.7 | | | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 2.0 | 1.0 | | | 1.0 | 1.0 | 1.3 | 1.3 | 1.3 | | | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 6.0 | 5.7 | | | 5.7 | 5.7 | 6.0 | 6.0 | 6.0 | | | |
| Lead/Lag | Lag | Lead | | | Lead | Lead | Lead | Lead | Lead | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Recall Mode | Min | Min | | | None | None | None | None | None | | | |
| Walk Time (s) | | 7.0 | | | 8.0 | 8.0 | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | 23.0 | | | 26.0 | 26.0 | 35.0 | 35.0 | 35.0 | | | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 32.3 | 34.7 | | | 31.3 | 31.3 | 31.6 | 31.6 | 31.6 | | | |
| Actuated g/C Ratio | 0.21 | 0.22 | | | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | | | |
| v/c Ratio | 0.05 | 1.29 | | | 0.55 | 0.62 | 0.80 | 0.82 | 0.49 | | | |
| Control Delay | 52.4 | 164.7 | | | 58.4 | 10.1 | 77.5 | 68.0 | 9.3 | | | |
| Queue Delay | 0.0 | 0.0 | | | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 52.4 | 164.8 | | | 58.6 | 10.1 | 77.5 | 68.0 | 9.3 | | | |
| LOS | D | F | | | E | B | E | E | A | | | |
| Approach Delay | | 162.9 | | | 41.5 | | | 56.8 | | | | |
| Approach LOS | | F | | | D | | | E | | | | |

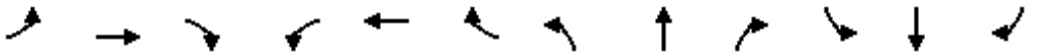
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 155.3 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.29 | | | |
| Intersection Signal Delay: 86.3 | | Intersection LOS: F | |
| Intersection Capacity Utilization 68.1% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Loop 101 NB Frontage Rd & Bell Rd



| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 7.0 | 5.0 |
| Minimum Split (s) | 50.9 | 11.0 |
| Total Split (s) | 50.0 | 35.0 |
| Total Split (%) | 29% | 20% |
| Maximum Green (s) | 44.1 | 29.0 |
| Yellow Time (s) | 4.7 | 4.0 |
| All-Red Time (s) | 1.2 | 2.0 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lag |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | None | None |
| Walk Time (s) | 7.0 | |
| Flash Dont Walk (s) | 38.0 | |
| Pedestrian Calls (#/hr) | 0 | |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1090 | 512 | 244 | 1248 | 0 | 0 | 0 | 0 | 831 | 625 | 540 |
| Future Volume (vph) | 0 | 1090 | 512 | 244 | 1248 | 0 | 0 | 0 | 0 | 831 | 625 | 540 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 185 | | 0 | 0 | | 0 | 0 | | 0 | 250 | | 250 |
| Storage Lanes | 2 | | 1 | 2 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.81 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 | 0.95 | 1.00 |
| Ped Bike Factor | | | 0.99 | 1.00 | | | | | | | | 0.99 |
| Frt | | | 0.850 | | | | | | | | | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 7192 | 1482 | 3019 | 4940 | 0 | 0 | 0 | 0 | 3183 | 3610 | 1538 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 7192 | 1463 | 3017 | 4940 | 0 | 0 | 0 | 0 | 3183 | 3610 | 1517 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 420 | | | | | | | | | 172 |
| Link Speed (mph) | | 45 | | | 45 | | | 30 | | | 30 | |
| Link Distance (ft) | | 675 | | | 322 | | | 835 | | | 832 | |
| Travel Time (s) | | 10.2 | | | 4.9 | | | 19.0 | | | 18.9 | |
| Confl. Peds. (#/hr) | 1 | | 1 | 1 | | | | | | | | 1 |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.85 | 0.85 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 0% | 7% | 9% | 16% | 5% | 0% | 0% | 0% | 0% | 10% | 0% | 5% |
| Adj. Flow (vph) | 0 | 1211 | 569 | 287 | 1468 | 0 | 0 | 0 | 0 | 923 | 694 | 600 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 1211 | 569 | 287 | 1468 | 0 | 0 | 0 | 0 | 923 | 694 | 600 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 60 | | 60 | 60 | | 60 | 60 | | 60 | 60 | | 60 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |

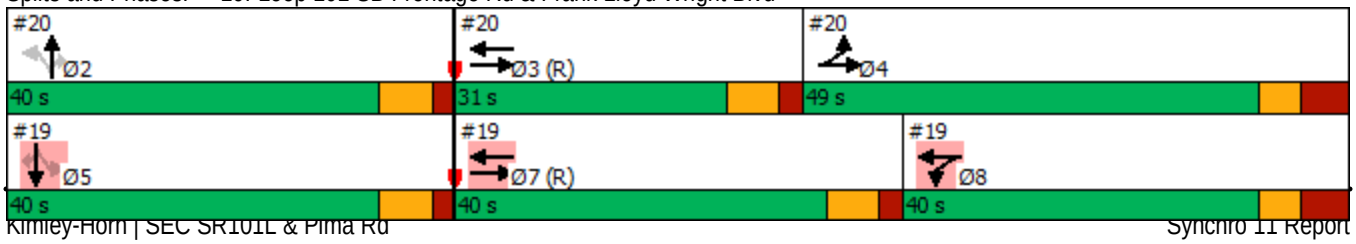
| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | | NA | Free | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 5 | |
| Permitted Phases | | | Free | | | | | | | 5 | | 5 |
| Detector Phase | | 7 | | 8 | 7 8 | | | | | 5 | 5 | 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 5.0 | | 6.0 | | | | | | 6.0 | 6.0 | 6.0 |
| Minimum Split (s) | | 24.8 | | 31.9 | | | | | | 29.7 | 29.7 | 29.7 |
| Total Split (s) | | 40.0 | | 40.0 | | | | | | 40.0 | 40.0 | 40.0 |
| Total Split (%) | | 33.3% | | 33.3% | | | | | | 33.3% | 33.3% | 33.3% |
| Maximum Green (s) | | 33.2 | | 31.7 | | | | | | 33.3 | 33.3 | 33.3 |
| Yellow Time (s) | | 4.7 | | 3.9 | | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 2.1 | | 4.4 | | | | | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.8 | | 8.3 | | | | | | 6.7 | 6.7 | 6.7 |
| Lead/Lag | | Lead | | Lag | | | | | | | | |
| Lead-Lag Optimize? | | Yes | | Yes | | | | | | | | |
| Vehicle Extension (s) | | 0.2 | | 0.2 | | | | | | 0.2 | 0.2 | 0.2 |
| Recall Mode | | C-Max | | None | | | | | | None | None | None |
| Walk Time (s) | | 7.0 | | | | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 11.0 | | | | | | | | 16.0 | 16.0 | 16.0 |
| Pedestrian Calls (#/hr) | | 0 | | | | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 33.2 | 120.0 | 19.2 | 60.7 | | | | | 45.8 | 45.8 | 45.8 |
| Actuated g/C Ratio | | 0.28 | 1.00 | 0.16 | 0.51 | | | | | 0.38 | 0.38 | 0.38 |
| v/c Ratio | | 0.61 | 0.39 | 0.59 | 0.59 | | | | | 0.76 | 0.50 | 0.88 |
| Control Delay | | 39.3 | 0.8 | 56.5 | 25.4 | | | | | 38.3 | 30.9 | 40.7 |
| Queue Delay | | 1.0 | 0.0 | 0.0 | 2.6 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 40.3 | 0.8 | 56.5 | 28.0 | | | | | 38.3 | 30.9 | 40.7 |
| LOS | | D | A | E | C | | | | | D | C | D |
| Approach Delay | | 27.6 | | | 32.7 | | | | | | 36.6 | |
| Approach LOS | | C | | | C | | | | | | D | |

**Intersection Summary**

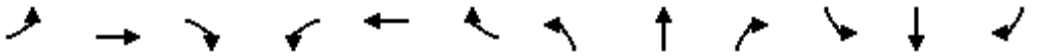
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 32.6 Intersection LOS: C
Intersection Capacity Utilization 91.8% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 19: Loop 101 SB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 2 | 3 | 4 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.7 | 24.8 | 13.3 |
| Total Split (s) | 40.0 | 31.0 | 49.0 |
| Total Split (%) | 33% | 26% | 41% |
| Maximum Green (s) | 33.3 | 24.2 | 40.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | Yes | Yes |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|



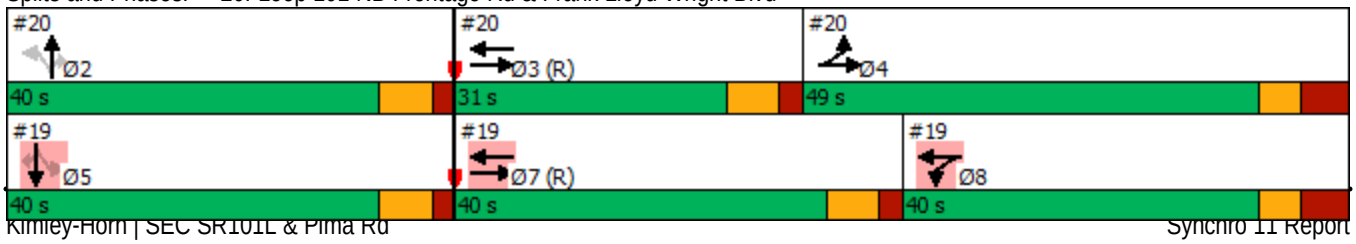
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 567 | 1354 | 0 | 0 | 806 | 1035 | 686 | 631 | 93 | 0 | 0 | 0 |
| Future Volume (vph) | 567 | 1354 | 0 | 0 | 806 | 1035 | 686 | 631 | 93 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 245 | | 150 | 250 | | 250 | 0 | | 0 |
| Storage Lanes | 2 | | 0 | 2 | | 2 | 2 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.81 | 0.88 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (prot) | 3183 | 4893 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (perm) | 3183 | 4893 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 592 | | | 172 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 45 | |
| Link Distance (ft) | | 322 | | | 1160 | | | 836 | | | 801 | |
| Travel Time (s) | | 4.9 | | | 17.6 | | | 12.7 | | | 12.1 | |
| Confl. Peds. (#/hr) | | | 1 | | | | | | | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.85 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Heavy Vehicles (%) | 10% | 6% | 0% | 0% | 6% | 14% | 2% | 0% | 2% | 0% | 0% | 0% |
| Adj. Flow (vph) | 630 | 1504 | 0 | 0 | 948 | 1150 | 762 | 701 | 103 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 630 | 1504 | 0 | 0 | 948 | 1150 | 762 | 701 | 103 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 60 | | 60 | 60 | | 60 | 60 | | 60 | 60 | | 60 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |

| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Prot | NA | | | NA | Free | Perm | NA | Perm | | | |
| Protected Phases | 4 | 3 4 | | | 3 | | | 2 | | | | |
| Permitted Phases | | | | | | Free | 2 | | 2 | | | |
| Detector Phase | 4 | 3 4 | | | 3 | | 2 | 2 | 2 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 5.0 | | 5.0 | 5.0 | 5.0 | | | |
| Minimum Split (s) | 13.3 | | | | 24.8 | | 24.7 | 24.7 | 24.7 | | | |
| Total Split (s) | 49.0 | | | | 31.0 | | 40.0 | 40.0 | 40.0 | | | |
| Total Split (%) | 40.8% | | | | 25.8% | | 33.3% | 33.3% | 33.3% | | | |
| Maximum Green (s) | 40.7 | | | | 24.2 | | 33.3 | 33.3 | 33.3 | | | |
| Yellow Time (s) | 3.9 | | | | 4.7 | | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 4.4 | | | | 2.1 | | 2.0 | 2.0 | 2.0 | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 8.3 | | | | 6.8 | | 6.7 | 6.7 | 6.7 | | | |
| Lead/Lag | Lag | | | | Lead | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 0.2 | | | | 0.2 | | 0.2 | 0.2 | 0.2 | | | |
| Recall Mode | None | | | | C-Max | | None | None | None | | | |
| Walk Time (s) | | | | | 7.0 | | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | | | | 11.0 | | 11.0 | 11.0 | 11.0 | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 28.2 | 60.7 | | | 24.2 | 120.0 | 45.8 | 45.8 | 45.8 | | | |
| Actuated g/C Ratio | 0.24 | 0.51 | | | 0.20 | 1.00 | 0.38 | 0.38 | 0.38 | | | |
| v/c Ratio | 0.84 | 0.61 | | | 0.65 | 0.46 | 0.58 | 0.35 | 0.15 | | | |
| Control Delay | 54.9 | 22.9 | | | 46.4 | 0.6 | 32.7 | 28.0 | 0.5 | | | |
| Queue Delay | 1.5 | 0.7 | | | 5.8 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 56.4 | 23.6 | | | 52.2 | 0.6 | 32.7 | 28.0 | 0.5 | | | |
| LOS | E | C | | | D | A | C | C | A | | | |
| Approach Delay | | 33.3 | | | 23.9 | | | 28.5 | | | | |
| Approach LOS | | C | | | C | | | C | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.88 | | | |
| Intersection Signal Delay: 28.6 | | Intersection LOS: C | |
| Intersection Capacity Utilization 91.8% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 20: Loop 101 NB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 5 | 7 | 8 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 6.0 | 5.0 | 6.0 |
| Minimum Split (s) | 29.7 | 24.8 | 31.9 |
| Total Split (s) | 40.0 | 40.0 | 40.0 |
| Total Split (%) | 33% | 33% | 33% |
| Maximum Green (s) | 33.3 | 33.2 | 31.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | Yes | Yes |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 16.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|

# 2025 Background PM
# Traffic Capacity Analysis

| Phase Number | 2 | 4 | 5 | 6 |
|---|---|---|---|---|
| Movement | SBTL | WBL | SBL | NBT |
| Lead/Lag | | | Lead | Lag |
| Lead-Lag Optimize | | | Yes | Yes |
| Recall Mode | C-Max | Max | None | C-Max |
| Maximum Split (s) | 90 | 30 | 12 | 78 |
| Maximum Split (%) | 75.0% | 25.0% | 10.0% | 65.0% |
| Minimum Split (s) | 22.5 | 22.5 | 9.5 | 22.5 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1 | 1 | 1 | 1 |
| Minimum Initial (s) | 5 | 5 | 5 | 5 |
| Vehicle Extension (s) | 3 | 3 | 3 | 3 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 |
| Walk Time (s) | 7 | 7 | | 7 |
| Flash Dont Walk (s) | 11 | 11 | | 11 |
| Dual Entry | Yes | Yes | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes |
| Start Time (s) | 108 | 78 | 108 | 0 |
| End Time (s) | 78 | 108 | 0 | 78 |
| Yield/Force Off (s) | 73.5 | 103.5 | 115.5 | 73.5 |
| Yield/Force Off 170(s) | 62.5 | 92.5 | 115.5 | 62.5 |
| Local Start Time (s) | 108 | 78 | 108 | 0 |
| Local Yield (s) | 73.5 | 103.5 | 115.5 | 73.5 |
| Local Yield 170(s) | 62.5 | 92.5 | 115.5 | 62.5 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 60 |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of Green | |

Splits and Phases: 4: Pima Rd & Trailside View

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 100 | 36 | 1580 | 116 | 9 | 1602 |
| Future Volume (veh/h) | 100 | 36 | 1580 | 116 | 9 | 1602 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 128 | 46 | 1717 | 126 | 11 | 1885 |
| Peak Hour Factor | 0.78 | 0.78 | 0.92 | 0.92 | 0.85 | 0.85 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 379 | 337 | 3381 | 1050 | 206 | 3638 |
| Arrive On Green | 0.21 | 0.21 | 0.66 | 0.66 | 0.01 | 0.71 |
| Sat Flow, veh/h | 1781 | 1585 | 5274 | 1585 | 1781 | 5274 |
| Grp Volume(v), veh/h | 128 | 46 | 1717 | 126 | 11 | 1885 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1585 | 1702 | 1585 | 1781 | 1702 |
| Q Serve(g_s), s | 7.3 | 2.8 | 20.5 | 3.5 | 0.2 | 20.2 |
| Cycle Q Clear(g_c), s | 7.3 | 2.8 | 20.5 | 3.5 | 0.2 | 20.2 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 379 | 337 | 3381 | 1050 | 206 | 3638 |
| V/C Ratio(X) | 0.34 | 0.14 | 0.51 | 0.12 | 0.05 | 0.52 |
| Avail Cap(c_a), veh/h | 379 | 337 | 3381 | 1050 | 295 | 3638 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 40.1 | 38.3 | 10.3 | 7.4 | 8.0 | 7.9 |
| Incr Delay (d2), s/veh | 2.4 | 0.8 | 0.5 | 0.2 | 0.1 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 6.3 | 5.1 | 11.1 | 2.0 | 0.1 | 10.2 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 42.5 | 39.2 | 10.9 | 7.7 | 8.1 | 8.4 |
| LnGrp LOS | D | D | B | A | A | A |
| Approach Vol, veh/h | 174 | | 1843 | | | 1896 |
| Approach Delay, s/veh | 41.6 | | 10.6 | | | 8.4 |
| Approach LOS | D | | B | | | A |

| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 90.0 | | 30.0 | 6.0 | 84.0 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | 85.5 | | 25.5 | 7.5 | 73.5 |
| Max Q Clear Time (g_c+I1), s | | 22.2 | | 9.3 | 2.2 | 22.5 |
| Green Ext Time (p_c), s | | 23.1 | | 0.4 | 0.0 | 19.3 |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 9.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 8 | 69 | 77 | 1 | 59 | 1 | 64 | 1 | 1 | 1 | 1 | 6 |
| Future Vol, veh/h | 8 | 69 | 77 | 1 | 59 | 1 | 64 | 1 | 1 | 1 | 1 | 6 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 125 | - | - | - | 150 | - | - | 160 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 10 | 86 | 96 | 1 | 74 | 1 | 80 | 1 | 1 | 1 | 1 | 8 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 206 | 169 | 5 | 260 | 173 | 2 | 9 | 0 | 0 | 2 | 0 | 0 |
| Stage 1 | 7 | 7 | - | 162 | 162 | - | - | - | - | - | - | - |
| Stage 2 | 199 | 162 | - | 98 | 11 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 752 | 724 | 1078 | 693 | 720 | 1082 | 1611 | - | - | 1620 | - | - |
| Stage 1 | 1015 | 890 | - | 840 | 764 | - | - | - | - | - | - | - |
| Stage 2 | 803 | 764 | - | 908 | 886 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 663 | 687 | 1078 | 549 | 683 | 1082 | 1611 | - | - | 1620 | - | - |
| Mov Cap-2 Maneuver | 663 | 687 | - | 549 | 683 | - | - | - | - | - | - | - |
| Stage 1 | 964 | 889 | - | 798 | 726 | - | - | - | - | - | - | - |
| Stage 2 | 685 | 726 | - | 746 | 885 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 9.9 | 10.9 | 7.1 | 0.9 |
| HCM LOS | A | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1611 | - | - | 684 | 1078 | 684 | 1620 | - | - |
| HCM Lane V/C Ratio | 0.05 | - | - | 0.141 | 0.089 | 0.111 | 0.001 | - | - |
| HCM Control Delay (s) | 7.4 | - | - | 11.1 | 8.7 | 10.9 | 7.2 | - | - |
| HCM Lane LOS | A | - | - | B | A | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0.5 | 0.3 | 0.4 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.3 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1170 | 15 | 5 | 836 | 33 | 18 |
| Future Vol, veh/h | 1170 | 15 | 5 | 836 | 33 | 18 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 150 | 60 | - | 100 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 81 | 81 | 79 | 79 | 52 | 52 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1444 | 19 | 6 | 1058 | 63 | 35 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1463 | 0 | 1985 | 722 |
| Stage 1 | - | - | - | - | 1444 | - |
| Stage 2 | - | - | - | - | 541 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 458 | - | *74 | 369 |
| Stage 1 | - | - | - | - | *183 | - |
| Stage 2 | - | - | - | - | *704 | - |
| Platoon blocked, % | - | - | | - | 1 | |
| Mov Cap-1 Maneuver | - | - | 458 | - | *73 | 369 |
| Mov Cap-2 Maneuver | - | - | - | - | *73 | - |
| Stage 1 | - | - | - | - | *183 | - |
| Stage 2 | - | - | - | - | *695 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 113.6 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 73 | 369 | - | - | 458 | - |
| HCM Lane V/C Ratio | 0.869 | 0.094 | - | - | 0.014 | - |
| HCM Control Delay (s) | 166.9 | 15.8 | - | - | 13 | - |
| HCM Lane LOS | F | C | - | - | B | - |
| HCM 95th %tile Q(veh) | 4.3 | 0.3 | - | - | 0 | - |

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

| Phase Number | 4 | 6 | 7 | 8 |
|---|---|---|---|---|
| Movement | WBTL | NBL | WBL | EBT |
| Lead/Lag | | | Lag | Lead |
| Lead-Lag Optimize | | | | |
| Recall Mode | C-Max | None | None | C-Max |
| Maximum Split (s) | 90 | 30 | 18 | 72 |
| Maximum Split (%) | 75.0% | 25.0% | 15.0% | 60.0% |
| Minimum Split (s) | 22.5 | 11 | 11 | 38.7 |
| Yellow Time (s) | 4.7 | 4 | 4 | 4.7 |
| All-Red Time (s) | 1.2 | 2 | 2 | 1 |
| Minimum Initial (s) | 10 | 5 | 5 | 10 |
| Vehicle Extension (s) | 2 | 3 | 2 | 2 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 |
| Walk Time (s) | | | | 8 |
| Flash Dont Walk (s) | | | | 24 |
| Dual Entry | Yes | No | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes |
| Start Time (s) | 40.7 | 10.7 | 112.7 | 40.7 |
| End Time (s) | 10.7 | 40.7 | 10.7 | 112.7 |
| Yield/Force Off (s) | 4.8 | 34.7 | 4.7 | 107 |
| Yield/Force Off 170(s) | 4.8 | 34.7 | 4.7 | 83 |
| Local Start Time (s) | 53.7 | 23.7 | 5.7 | 53.7 |
| Local Yield (s) | 17.8 | 47.7 | 17.7 | 0 |
| Local Yield 170(s) | 17.8 | 47.7 | 17.7 | 96 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 65 |
| Offset: 107 (89%), Referenced to phase 4:WBTL and 8:EBT, Start of Yellow | |

Splits and Phases: 16: 91st Street & Bell Rd

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 1133 | 55 | 38 | 684 | 158 | 63 |
| Future Volume (veh/h) | 1133 | 55 | 38 | 684 | 158 | 63 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | | No | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 1399 | 47 | 45 | 805 | 268 | 75 |
| Peak Hour Factor | 0.81 | 0.81 | 0.85 | 0.85 | 0.59 | 0.59 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 1963 | 876 | 506 | 2842 | 347 | 159 |
| Arrive On Green | 0.55 | 0.55 | 0.20 | 0.80 | 0.10 | 0.10 |
| Sat Flow, veh/h | 3647 | 1585 | 1781 | 3647 | 3456 | 1585 |
| Grp Volume(v), veh/h | 1399 | 47 | 45 | 805 | 268 | 75 |
| Grp Sat Flow(s),veh/h/ln | 1777 | 1585 | 1781 | 1777 | 1728 | 1585 |
| Q Serve(g_s), s | 34.9 | 1.6 | 0.0 | 7.0 | 9.1 | 5.4 |
| Cycle Q Clear(g_c), s | 34.9 | 1.6 | 0.0 | 7.0 | 9.1 | 5.4 |
| Prop In Lane | | 1.00 | 1.00 | | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h | 1963 | 876 | 506 | 2842 | 347 | 159 |
| V/C Ratio(X) | 0.71 | 0.05 | 0.09 | 0.28 | 0.77 | 0.47 |
| Avail Cap(c_a), veh/h | 1963 | 876 | 506 | 2842 | 691 | 317 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.8 | 12.4 | 21.1 | 3.1 | 52.6 | 51.0 |
| Incr Delay (d2), s/veh | 2.2 | 0.1 | 0.0 | 0.3 | 3.7 | 2.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 19.8 | 1.0 | 1.4 | 3.1 | 7.4 | 8.5 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 22.1 | 12.5 | 21.1 | 3.4 | 56.3 | 53.1 |
| LnGrp LOS | C | B | C | A | E | D |
| Approach Vol, veh/h | 1446 | | | 850 | 343 | |
| Approach Delay, s/veh | 21.7 | | | 4.3 | 55.6 | |
| Approach LOS | C | | | A | E | |

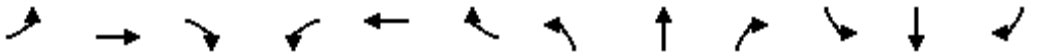
| Timer - Assigned Phs | 4 | 6 | 7 | 8 |
|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 102.0 | 18.0 | 30.0 | 72.0 |
| Change Period (Y+Rc), s | * 6 | 6.0 | 6.0 | 5.7 |
| Max Green Setting (Gmax), s | * 84 | 24.0 | 12.0 | 66.3 |
| Max Q Clear Time (g_c+I1), s | 9.0 | 11.1 | 2.0 | 36.9 |
| Green Ext Time (p_c), s | 3.6 | 1.0 | 0.0 | 7.5 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 20.5 |
| HCM 6th LOS | C |

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



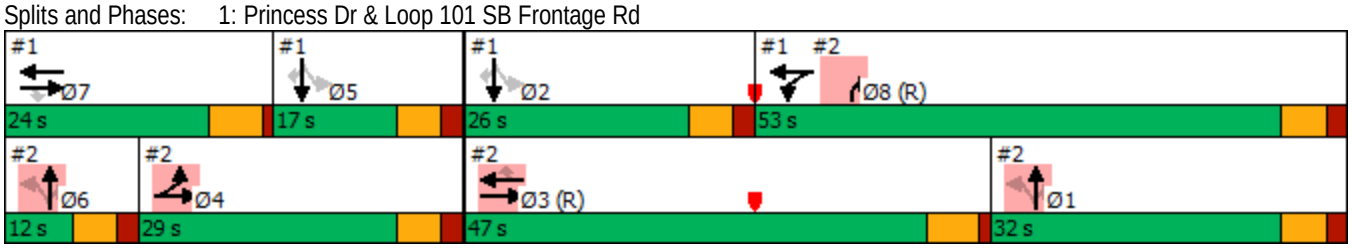
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 403 | 367 | 1098 | 305 | 0 | 0 | 0 | 0 | 391 | 387 | 67 |
| Future Volume (vph) | 0 | 403 | 367 | 1098 | 305 | 0 | 0 | 0 | 0 | 391 | 387 | 67 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 140 | | 245 | 240 | | 0 | 0 | | 0 | 355 | | 355 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 2 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 0.88 | 0.94 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.998 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.987 | |
| Satd. Flow (prot) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3156 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.987 | |
| Satd. Flow (perm) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3156 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 188 | | | | | | | | 1 | 185 |
| Link Speed (mph) | | 35 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 1345 | | | 409 | | | 1261 | | | 718 | |
| Travel Time (s) | | 26.2 | | | 6.2 | | | 28.7 | | | 10.9 | |
| Peak Hour Factor | 0.25 | 0.85 | 0.85 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 474 | 432 | 1220 | 339 | 0 | 0 | 0 | 0 | 434 | 430 | 74 |
| Shared Lane Traffic (%) | | | | | | | | | | 35% | | 10% |
| Lane Group Flow (vph) | 0 | 474 | 432 | 1220 | 339 | 0 | 0 | 0 | 0 | 282 | 589 | 67 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Right | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 36 | | | 36 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 2 5 | |
| Permitted Phases | | | 7 | | | | | | | 2 5 | | 2 5 |

| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | | | | | | |
| Future Volume (vph) | | | | | | |
| Ideal Flow (vphpl) | | | | | | |
| Storage Length (ft) | | | | | | |
| Storage Lanes | | | | | | |
| Taper Length (ft) | | | | | | |
| Lane Util. Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | | | | | | |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | | | | | | |
| Right Turn on Red | | | | | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | | | | | |
| Link Distance (ft) | | | | | | |
| Travel Time (s) | | | | | | |
| Peak Hour Factor | | | | | | |
| Adj. Flow (vph) | | | | | | |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | | | | | | |
| Enter Blocked Intersection | | | | | | |
| Lane Alignment | | | | | | |
| Median Width(ft) | | | | | | |
| Link Offset(ft) | | | | | | |
| Crosswalk Width(ft) | | | | | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | | | | | | |
| Turning Speed (mph) | | | | | | |
| Number of Detectors | | | | | | |
| Detector Template | | | | | | |
| Leading Detector (ft) | | | | | | |
| Trailing Detector (ft) | | | | | | |
| Detector 1 Position(ft) | | | | | | |
| Detector 1 Size(ft) | | | | | | |
| Detector 1 Type | | | | | | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | | | | | | |
| Detector 1 Queue (s) | | | | | | |
| Detector 1 Delay (s) | | | | | | |
| Detector 2 Position(ft) | | | | | | |
| Detector 2 Size(ft) | | | | | | |
| Detector 2 Type | | | | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | | | | |
| Turn Type | | | | | | |
| Protected Phases | 1 | 2 | 3 | 4 | 5 | 6 |
| Permitted Phases | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 7 | 7 | 8 | 7 8 | | | | | 2 5 | 2 5 | 2 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 7.0 | 7.0 | 5.0 | | | | | | | | |
| Minimum Split (s) | | 26.7 | 26.7 | 11.0 | | | | | | | | |
| Total Split (s) | | 24.0 | 24.0 | 53.0 | | | | | | | | |
| Total Split (%) | | 20.0% | 20.0% | 44.2% | | | | | | | | |
| Maximum Green (s) | | 18.3 | 18.3 | 47.0 | | | | | | | | |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | | | | | | | | |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | | | | | | | | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | | | | | | | | |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | | | | | | | | |
| Lead/Lag | | Lead | Lead | Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | | | | | | | | |
| Recall Mode | | None | None | C-Min | | | | | | | | |
| Walk Time (s) | | 4.0 | 4.0 | | | | | | | | | |
| Flash Dont Walk (s) | | 17.0 | 17.0 | | | | | | | | | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | | | | | | | | |
| Act Effct Green (s) | | 16.7 | 16.7 | 52.5 | 75.2 | | | | | 33.1 | 33.1 | 33.1 |
| Actuated g/C Ratio | | 0.14 | 0.14 | 0.44 | 0.63 | | | | | 0.28 | 0.28 | 0.28 |
| v/c Ratio | | 0.67 | 0.79 | 0.56 | 0.15 | | | | | 0.64 | 0.68 | 0.13 |
| Control Delay | | 53.8 | 38.5 | 13.6 | 6.8 | | | | | 44.8 | 42.6 | 0.5 |
| Queue Delay | | 0.0 | 0.0 | 1.9 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 53.8 | 38.5 | 15.5 | 6.8 | | | | | 44.8 | 42.6 | 0.5 |
| LOS | | D | D | B | A | | | | | D | D | A |
| Approach Delay | | 46.5 | | | 13.6 | | | | | | 40.2 | |
| Approach LOS | | D | | | B | | | | | | D | |

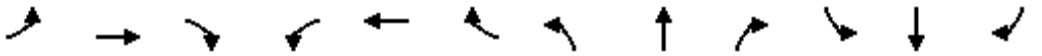
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 23 (19%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.28 | | | |
| Intersection Signal Delay: 29.7 | | Intersection LOS: C | |
| Intersection Capacity Utilization 94.7% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Princess Dr & Loop 101 SB Frontage Rd



| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Detector Phase | | | | | | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 10.0 | 5.0 | 7.0 | 1.0 |
| Minimum Split (s) | 13.0 | 7.0 | 26.7 | 11.0 | 50.0 | 7.0 |
| Total Split (s) | 32.0 | 26.0 | 47.0 | 29.0 | 17.0 | 12.0 |
| Total Split (%) | 27% | 22% | 39% | 24% | 14% | 10% |
| Maximum Green (s) | 26.0 | 20.0 | 41.3 | 23.0 | 11.0 | 6.0 |
| Yellow Time (s) | 4.0 | 4.0 | 4.7 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | | | | | |
| Total Lost Time (s) | | | | | | |
| Lead/Lag | Lag | Lead | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 5.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | C-Min | None | None | None |
| Walk Time (s) | | | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | | 17.0 | | 40.0 | |
| Pedestrian Calls (#/hr) | | | 0 | | 0 | |
| Act Effct Green (s) | | | | | | |
| Actuated g/C Ratio | | | | | | |
| v/c Ratio | | | | | | |
| Control Delay | | | | | | |
| Queue Delay | | | | | | |
| Total Delay | | | | | | |
| LOS | | | | | | |
| Approach Delay | | | | | | |
| Approach LOS | | | | | | |

| Intersection Summary |
|---|



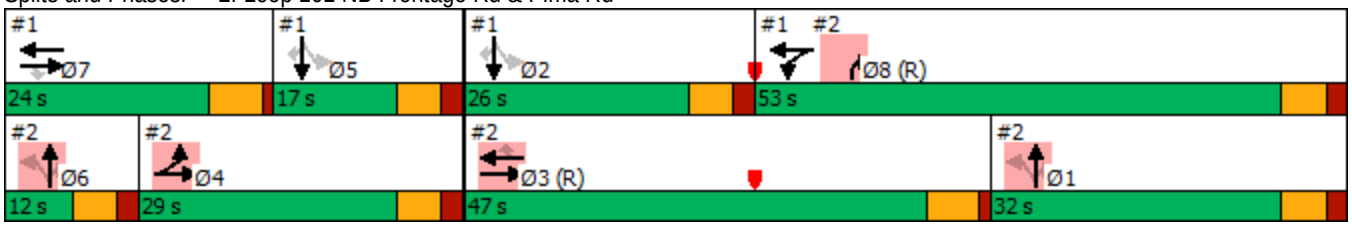
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 236 | 565 | 0 | 0 | 1251 | 464 | 153 | 530 | 1119 | 0 | 0 | 0 |
| Future Volume (vph) | 236 | 565 | 0 | 0 | 1251 | 464 | 153 | 530 | 1119 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 265 | | 0 | 350 | | 285 | 275 | | 275 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.81 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.999 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3387 | 1583 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.999 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3387 | 1583 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 188 | | | 270 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 409 | | | 1059 | | | 1024 | | | 527 | |
| Travel Time (s) | | 6.2 | | | 16.0 | | | 15.5 | | | 12.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 262 | 628 | 0 | 0 | 1390 | 516 | 170 | 589 | 1243 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 10% | | | | | |
| Lane Group Flow (vph) | 262 | 628 | 0 | 0 | 1390 | 516 | 153 | 606 | 1243 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | L NA | Right | Left | Left | Right | Left | Left | R NA | Left | Left | Right |
| Median Width(ft) | | 24 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | custom | | | |
| Protected Phases | 4 | 3 4! | | | 3 | | | 1 6 | 8! | | | |
| Permitted Phases | | | | | | 3 | 1 6 | | 1 6 | | | |

| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 |
|---|---|---|---|---|---|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | | | | | |
| Future Volume (vph) | | | | | |
| Ideal Flow (vphpl) | | | | | |
| Storage Length (ft) | | | | | |
| Storage Lanes | | | | | |
| Taper Length (ft) | | | | | |
| Lane Util. Factor | | | | | |
| Frt | | | | | |
| Flt Protected | | | | | |
| Satd. Flow (prot) | | | | | |
| Flt Permitted | | | | | |
| Satd. Flow (perm) | | | | | |
| Right Turn on Red | | | | | |
| Satd. Flow (RTOR) | | | | | |
| Link Speed (mph) | | | | | |
| Link Distance (ft) | | | | | |
| Travel Time (s) | | | | | |
| Peak Hour Factor | | | | | |
| Adj. Flow (vph) | | | | | |
| Shared Lane Traffic (%) | | | | | |
| Lane Group Flow (vph) | | | | | |
| Enter Blocked Intersection | | | | | |
| Lane Alignment | | | | | |
| Median Width(ft) | | | | | |
| Link Offset(ft) | | | | | |
| Crosswalk Width(ft) | | | | | |
| Two way Left Turn Lane | | | | | |
| Headway Factor | | | | | |
| Turning Speed (mph) | | | | | |
| Number of Detectors | | | | | |
| Detector Template | | | | | |
| Leading Detector (ft) | | | | | |
| Trailing Detector (ft) | | | | | |
| Detector 1 Position(ft) | | | | | |
| Detector 1 Size(ft) | | | | | |
| Detector 1 Type | | | | | |
| Detector 1 Channel | | | | | |
| Detector 1 Extend (s) | | | | | |
| Detector 1 Queue (s) | | | | | |
| Detector 1 Delay (s) | | | | | |
| Detector 2 Position(ft) | | | | | |
| Detector 2 Size(ft) | | | | | |
| Detector 2 Type | | | | | |
| Detector 2 Channel | | | | | |
| Detector 2 Extend (s) | | | | | |
| Turn Type | | | | | |
| Protected Phases | 1 | 2 | 5 | 6 | 7 |
| Permitted Phases | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 4 | 3 4 | | | 3 | 3 | 1 6 | 1 6 | 8 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 10.0 | 10.0 | | | 5.0 | | | |
| Minimum Split (s) | 11.0 | | | | 26.7 | 26.7 | | | 11.0 | | | |
| Total Split (s) | 29.0 | | | | 47.0 | 47.0 | | | 53.0 | | | |
| Total Split (%) | 24.2% | | | | 39.2% | 39.2% | | | 44.2% | | | |
| Maximum Green (s) | 23.0 | | | | 41.3 | 41.3 | | | 47.0 | | | |
| Yellow Time (s) | 4.0 | | | | 4.7 | 4.7 | | | 4.0 | | | |
| All-Red Time (s) | 2.0 | | | | 1.0 | 1.0 | | | 2.0 | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | 0.0 | | | 0.0 | | | |
| Total Lost Time (s) | 6.0 | | | | 5.7 | 5.7 | | | 6.0 | | | |
| Lead/Lag | Lag | | | | Lead | Lead | | | Lag | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 5.0 | 5.0 | | | 2.0 | | | |
| Recall Mode | None | | | | C-Min | C-Min | | | C-Min | | | |
| Walk Time (s) | | | | | 4.0 | 4.0 | | | | | | |
| Flash Dont Walk (s) | | | | | 17.0 | 17.0 | | | | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | 0 | | | | | | |
| Act Effct Green (s) | 23.2 | 70.5 | | | 41.3 | 41.3 | 37.8 | 37.8 | 64.3 | | | |
| Actuated g/C Ratio | 0.19 | 0.59 | | | 0.34 | 0.34 | 0.32 | 0.32 | 0.54 | | | |
| v/c Ratio | 0.77 | 0.30 | | | 0.54 | 0.77 | 0.30 | 0.57 | 1.28 | | | |
| Control Delay | 49.5 | 3.1 | | | 28.0 | 24.4 | 33.1 | 36.8 | 155.7 | | | |
| Queue Delay | 0.0 | 0.5 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 49.5 | 3.6 | | | 28.0 | 24.4 | 33.1 | 36.8 | 155.7 | | | |
| LOS | D | A | | | C | C | C | D | F | | | |
| Approach Delay | | 17.1 | | | 27.1 | | | 110.3 | | | | |
| Approach LOS | | B | | | C | | | F | | | | |

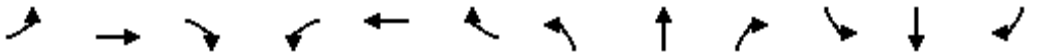
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 23 (19%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.28 | | | |
| Intersection Signal Delay: 60.0 | | Intersection LOS: E | |
| Intersection Capacity Utilization 94.7% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |
| ! Phase conflict between lane groups. | | | |

Splits and Phases: 2: Loop 101 NB Frontage Rd & Pima Rd



| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 |
|---|---|---|---|---|---|
| Detector Phase | | | | | |
| Switch Phase | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 7.0 | 1.0 | 7.0 |
| Minimum Split (s) | 13.0 | 7.0 | 50.0 | 7.0 | 26.7 |
| Total Split (s) | 32.0 | 26.0 | 17.0 | 12.0 | 24.0 |
| Total Split (%) | 27% | 22% | 14% | 10% | 20% |
| Maximum Green (s) | 26.0 | 20.0 | 11.0 | 6.0 | 18.3 |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.7 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 1.0 |
| Lost Time Adjust (s) | | | | | |
| Total Lost Time (s) | | | | | |
| Lead/Lag | Lag | Lead | Lag | Lead | Lead |
| Lead-Lag Optimize? | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | None | None | None |
| Walk Time (s) | | | 4.0 | | 4.0 |
| Flash Dont Walk (s) | | | 40.0 | | 17.0 |
| Pedestrian Calls (#/hr) | | | 0 | | 0 |
| Act Effct Green (s) | | | | | |
| Actuated g/C Ratio | | | | | |
| v/c Ratio | | | | | |
| Control Delay | | | | | |
| Queue Delay | | | | | |
| Total Delay | | | | | |
| LOS | | | | | |
| Approach Delay | | | | | |
| Approach LOS | | | | | |

| Intersection Summary |
|---|



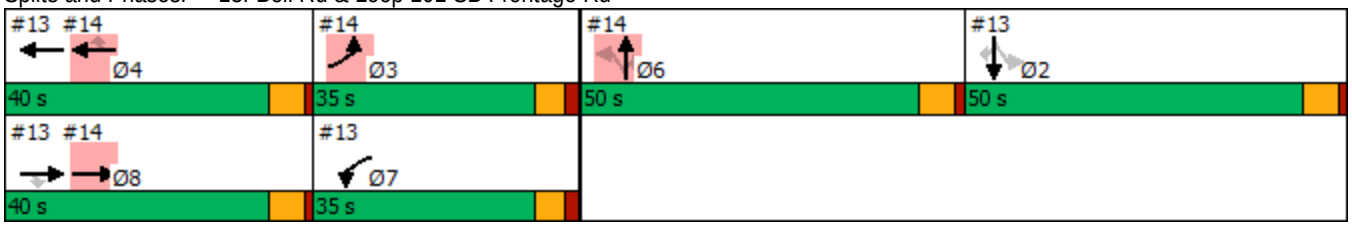
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 366 | 219 | 595 | 365 | 0 | 0 | 0 | 0 | 398 | 161 | 12 |
| Future Volume (vph) | 0 | 366 | 219 | 595 | 365 | 0 | 0 | 0 | 0 | 398 | 161 | 12 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 240 | | 315 | 220 | | 0 | 0 | | 0 | 385 | | 385 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.999 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.973 | |
| Satd. Flow (prot) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3114 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.973 | |
| Satd. Flow (perm) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3114 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 243 | | | | | | | | | 92 |
| Link Speed (mph) | | 45 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 824 | | | 389 | | | 598 | | | 1243 | |
| Travel Time (s) | | 12.5 | | | 5.9 | | | 13.6 | | | 18.8 | |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.90 | 0.85 | 0.25 | 0.25 | 0.25 | 0.25 | 0.85 | 0.85 | 0.80 |
| Adj. Flow (vph) | 0 | 407 | 243 | 661 | 429 | 0 | 0 | 0 | 0 | 468 | 189 | 15 |
| Shared Lane Traffic (%) | | | | | | | | | | 50% | | 10% |
| Lane Group Flow (vph) | 0 | 407 | 243 | 661 | 429 | 0 | 0 | 0 | 0 | 234 | 425 | 13 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | | | | | 2 | |
| Permitted Phases | | | 8 | | | | | | | 2 | | 2 |

| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 3 | 6 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 8 | 8 | 7 | 4 | | | | | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 10.0 | 10.0 | 5.0 | 10.0 | | | | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | | 35.7 | 35.7 | 11.0 | 39.7 | | | | | 50.9 | 50.9 | 50.9 |
| Total Split (s) | | 40.0 | 40.0 | 35.0 | 40.0 | | | | | 50.0 | 50.0 | 50.0 |
| Total Split (%) | | 22.9% | 22.9% | 20.0% | 22.9% | | | | | 28.6% | 28.6% | 28.6% |
| Maximum Green (s) | | 34.3 | 34.3 | 29.0 | 34.3 | | | | | 44.1 | 44.1 | 44.1 |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | 4.7 | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | 1.0 | | | | | 1.2 | 1.2 | 1.2 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | 5.7 | | | | | 5.9 | 5.9 | 5.9 |
| Lead/Lag | | Lead | Lead | Lag | Lead | | | | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | 2.0 | 2.0 | 2.0 |
| Recall Mode | | Min | Min | None | None | | | | | None | None | None |
| Walk Time (s) | | 7.0 | 7.0 | | 8.0 | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 23.0 | 23.0 | | 26.0 | | | | | 38.0 | 38.0 | 38.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 34.6 | 34.6 | 29.3 | 26.0 | | | | | 27.0 | 27.0 | 27.0 |
| Actuated g/C Ratio | | 0.23 | 0.23 | 0.19 | 0.17 | | | | | 0.18 | 0.18 | 0.18 |
| v/c Ratio | | 0.35 | 0.44 | 0.99 | 0.71 | | | | | 0.82 | 0.76 | 0.04 |
| Control Delay | | 51.8 | 8.7 | 97.0 | 34.3 | | | | | 82.1 | 68.8 | 0.2 |
| Queue Delay | | 0.4 | 0.0 | 35.8 | 0.1 | | | | | 0.5 | 0.2 | 0.0 |
| Total Delay | | 52.2 | 8.7 | 132.8 | 34.3 | | | | | 82.7 | 69.0 | 0.2 |
| LOS | | D | A | F | C | | | | | F | E | A |
| Approach Delay | | 35.9 | | | 94.1 | | | | | | 72.4 | |
| Approach LOS | | D | | | F | | | | | | E | |

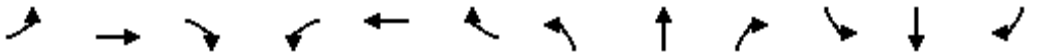
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 151.1 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.99 | | | |
| Intersection Signal Delay: 72.4 | | Intersection LOS: E | |
| Intersection Capacity Utilization 56.0% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 13: Bell Rd & Loop 101 SB Frontage Rd



| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 5.0 | 7.0 |
| Minimum Split (s) | 11.0 | 48.0 |
| Total Split (s) | 35.0 | 50.0 |
| Total Split (%) | 20% | 29% |
| Maximum Green (s) | 29.0 | 44.0 |
| Yellow Time (s) | 4.0 | 4.7 |
| All-Red Time (s) | 2.0 | 1.3 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lead |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | Min | None |
| Walk Time (s) | | 7.0 |
| Flash Dont Walk (s) | | 35.0 |
| Pedestrian Calls (#/hr) | | 0 |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|



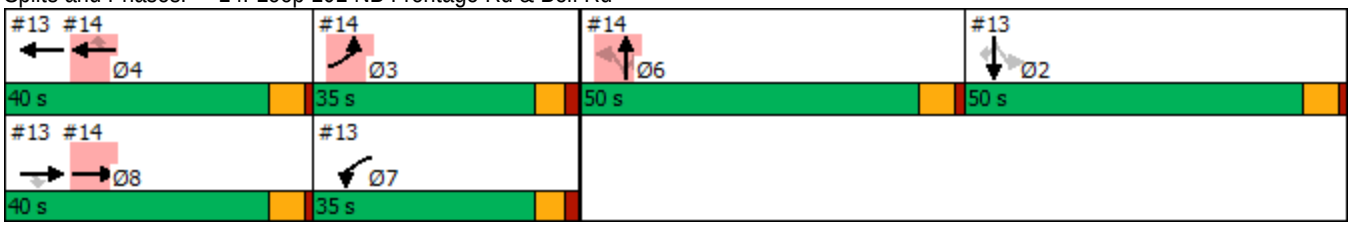
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 45 | 718 | 0 | 0 | 554 | 327 | 406 | 283 | 448 | 0 | 0 | 0 |
| Future Volume (vph) | 45 | 718 | 0 | 0 | 554 | 327 | 406 | 283 | 448 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 220 | | 0 | 235 | | 175 | 310 | | 310 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.86 | 1.00 | 0.91 | 0.86 | 0.91 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | 0.952 | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.990 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3020 | 1441 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.990 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3020 | 1441 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 363 | | 33 | 294 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 389 | | | 797 | | | 655 | | | 974 | |
| Travel Time (s) | | 5.9 | | | 12.1 | | | 9.9 | | | 22.1 | |
| Peak Hour Factor | 0.80 | 0.90 | 0.25 | 0.25 | 0.85 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 56 | 798 | 0 | 0 | 652 | 363 | 451 | 314 | 498 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 28% | | 41% | | | |
| Lane Group Flow (vph) | 56 | 798 | 0 | 0 | 652 | 363 | 325 | 644 | 294 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | Perm | | | |
| Protected Phases | 3 | 8 | | | 4 | | | 6 | | | | |
| Permitted Phases | | | | | | 4 | 6 | | 6 | | | |

| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 2 | 7 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 3 | 8 | | | 4 | 4 | 6 | 6 | 6 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | | | 10.0 | 10.0 | 7.0 | 7.0 | 7.0 | | | |
| Minimum Split (s) | 11.0 | 35.7 | | | 39.7 | 39.7 | 48.0 | 48.0 | 48.0 | | | |
| Total Split (s) | 35.0 | 40.0 | | | 40.0 | 40.0 | 50.0 | 50.0 | 50.0 | | | |
| Total Split (%) | 20.0% | 22.9% | | | 22.9% | 22.9% | 28.6% | 28.6% | 28.6% | | | |
| Maximum Green (s) | 29.0 | 34.3 | | | 34.3 | 34.3 | 44.0 | 44.0 | 44.0 | | | |
| Yellow Time (s) | 4.0 | 4.7 | | | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 2.0 | 1.0 | | | 1.0 | 1.0 | 1.3 | 1.3 | 1.3 | | | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 6.0 | 5.7 | | | 5.7 | 5.7 | 6.0 | 6.0 | 6.0 | | | |
| Lead/Lag | Lag | Lead | | | Lead | Lead | Lead | Lead | Lead | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Recall Mode | Min | Min | | | None | None | None | None | None | | | |
| Walk Time (s) | | 7.0 | | | 8.0 | 8.0 | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | 23.0 | | | 26.0 | 26.0 | 35.0 | 35.0 | 35.0 | | | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 37.9 | 34.6 | | | 26.0 | 26.0 | 36.3 | 36.3 | 36.3 | | | |
| Actuated g/C Ratio | 0.25 | 0.23 | | | 0.17 | 0.17 | 0.24 | 0.24 | 0.24 | | | |
| v/c Ratio | 0.13 | 0.98 | | | 0.59 | 0.63 | 0.84 | 0.86 | 0.52 | | | |
| Control Delay | 43.0 | 51.5 | | | 60.4 | 10.5 | 74.8 | 64.7 | 8.2 | | | |
| Queue Delay | 0.0 | 3.5 | | | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 43.0 | 55.0 | | | 61.1 | 10.5 | 74.8 | 64.7 | 8.2 | | | |
| LOS | D | D | | | E | B | E | E | A | | | |
| Approach Delay | | 54.2 | | | 43.0 | | | 54.1 | | | | |
| Approach LOS | | D | | | D | | | D | | | | |

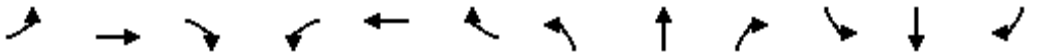
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 151.1 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.99 | | | |
| Intersection Signal Delay: 50.5 | | Intersection LOS: D | |
| Intersection Capacity Utilization 56.0% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Loop 101 NB Frontage Rd & Bell Rd



| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 7.0 | 5.0 |
| Minimum Split (s) | 50.9 | 11.0 |
| Total Split (s) | 50.0 | 35.0 |
| Total Split (%) | 29% | 20% |
| Maximum Green (s) | 44.1 | 29.0 |
| Yellow Time (s) | 4.7 | 4.0 |
| All-Red Time (s) | 1.2 | 2.0 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lag |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | None | None |
| Walk Time (s) | 7.0 | |
| Flash Dont Walk (s) | 38.0 | |
| Pedestrian Calls (#/hr) | 0 | |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|



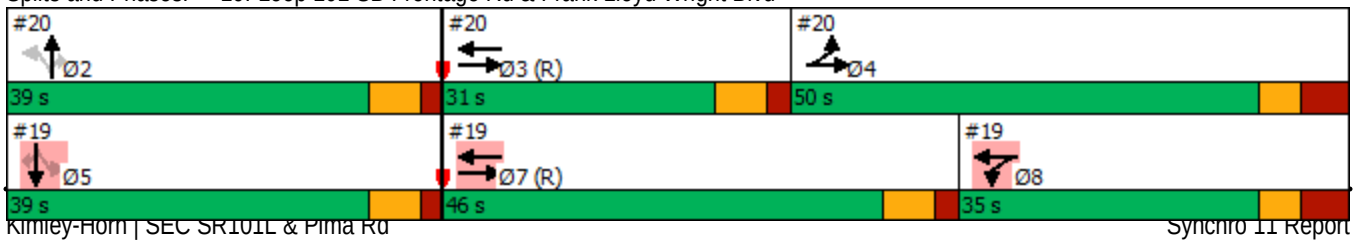
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1591 | 847 | 352 | 1183 | 0 | 0 | 0 | 0 | 761 | 722 | 333 |
| Future Volume (vph) | 0 | 1591 | 847 | 352 | 1183 | 0 | 0 | 0 | 0 | 761 | 722 | 333 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 185 | | 0 | 0 | | 0 | 0 | | 0 | 250 | | 250 |
| Storage Lanes | 2 | | 1 | 2 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.81 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 | 0.95 | 1.00 |
| Ped Bike Factor | | | 0.99 | 1.00 | | | | | | | | 0.99 |
| Frt | | | 0.850 | | | | | | | | | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 7192 | 1482 | 3019 | 4940 | 0 | 0 | 0 | 0 | 3183 | 3610 | 1538 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 7192 | 1463 | 3018 | 4940 | 0 | 0 | 0 | 0 | 3183 | 3610 | 1517 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 423 | | | | | | | | | 172 |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 45 | |
| Link Distance (ft) | | 675 | | | 322 | | | 835 | | | 832 | |
| Travel Time (s) | | 10.2 | | | 4.9 | | | 12.7 | | | 12.6 | |
| Confl. Peds. (#/hr) | 1 | | 1 | 1 | | | | | | | | 1 |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.88 | 0.88 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 0% | 7% | 9% | 16% | 5% | 0% | 0% | 0% | 0% | 10% | 0% | 5% |
| Adj. Flow (vph) | 0 | 1768 | 941 | 400 | 1344 | 0 | 0 | 0 | 0 | 846 | 802 | 370 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 1768 | 941 | 400 | 1344 | 0 | 0 | 0 | 0 | 846 | 802 | 370 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |

| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | | NA | Free | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 5 | |
| Permitted Phases | | | Free | | | | | | | 5 | | 5 |
| Detector Phase | | 7 | | 8 | 7 8 | | | | | 5 | 5 | 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 5.0 | | 6.0 | | | | | | 6.0 | 6.0 | 6.0 |
| Minimum Split (s) | | 24.8 | | 31.9 | | | | | | 29.7 | 29.7 | 29.7 |
| Total Split (s) | | 46.0 | | 35.0 | | | | | | 39.0 | 39.0 | 39.0 |
| Total Split (%) | | 38.3% | | 29.2% | | | | | | 32.5% | 32.5% | 32.5% |
| Maximum Green (s) | | 39.2 | | 26.7 | | | | | | 32.3 | 32.3 | 32.3 |
| Yellow Time (s) | | 4.7 | | 3.9 | | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 2.1 | | 4.4 | | | | | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.8 | | 8.3 | | | | | | 6.7 | 6.7 | 6.7 |
| Lead/Lag | | Lead | | Lag | | | | | | | | |
| Lead-Lag Optimize? | | Yes | | Yes | | | | | | | | |
| Vehicle Extension (s) | | 0.2 | | 0.2 | | | | | | 0.2 | 0.2 | 0.2 |
| Recall Mode | | C-Max | | None | | | | | | None | None | None |
| Walk Time (s) | | 7.0 | | | | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 11.0 | | | | | | | | 16.0 | 16.0 | 16.0 |
| Pedestrian Calls (#/hr) | | 0 | | | | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 43.0 | 120.0 | 19.4 | 70.7 | | | | | 35.8 | 35.8 | 35.8 |
| Actuated g/C Ratio | | 0.36 | 1.00 | 0.16 | 0.59 | | | | | 0.30 | 0.30 | 0.30 |
| v/c Ratio | | 0.69 | 0.64 | 0.82 | 0.46 | | | | | 0.89 | 0.74 | 0.65 |
| Control Delay | | 35.1 | 2.2 | 72.3 | 21.1 | | | | | 52.9 | 43.0 | 24.8 |
| Queue Delay | | 1.2 | 0.0 | 0.2 | 1.8 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 36.3 | 2.2 | 72.5 | 22.9 | | | | | 52.9 | 43.0 | 24.8 |
| LOS | | D | A | E | C | | | | | D | D | C |
| Approach Delay | | 24.5 | | | 34.2 | | | | | | 43.8 | |
| Approach LOS | | C | | | C | | | | | | D | |

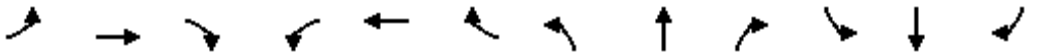
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.89 | | | |
| Intersection Signal Delay: 33.1 | | Intersection LOS: C | |
| Intersection Capacity Utilization 85.0% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 19: Loop 101 SB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 2 | 3 | 4 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.7 | 24.8 | 13.3 |
| Total Split (s) | 39.0 | 31.0 | 50.0 |
| Total Split (%) | 33% | 26% | 42% |
| Maximum Green (s) | 32.3 | 24.2 | 41.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | Yes | Yes |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 633 | 1719 | 0 | 0 | 787 | 943 | 749 | 593 | 146 | 0 | 0 | 0 |
| Future Volume (vph) | 633 | 1719 | 0 | 0 | 787 | 943 | 749 | 593 | 146 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 245 | | 150 | 250 | | 250 | 0 | | 0 |
| Storage Lanes | 2 | | 0 | 2 | | 2 | 2 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.81 | 0.88 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (prot) | 3183 | 4893 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (perm) | 3183 | 4893 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 583 | | | 172 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 45 | |
| Link Distance (ft) | | 322 | | | 1160 | | | 836 | | | 801 | |
| Travel Time (s) | | 4.9 | | | 17.6 | | | 12.7 | | | 12.1 | |
| Confl. Peds. (#/hr) | | | 1 | | | | | | | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.88 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Heavy Vehicles (%) | 10% | 6% | 0% | 0% | 6% | 14% | 2% | 0% | 2% | 0% | 0% | 0% |
| Adj. Flow (vph) | 703 | 1910 | 0 | 0 | 894 | 1048 | 832 | 659 | 162 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 703 | 1910 | 0 | 0 | 894 | 1048 | 832 | 659 | 162 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |

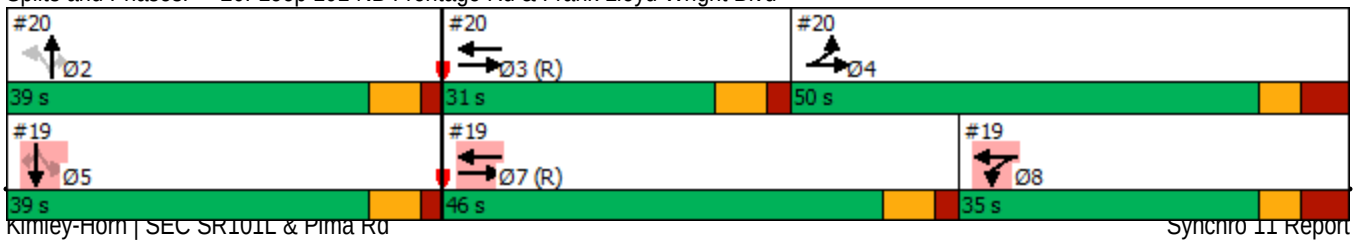
| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Prot | NA | | | NA | Free | Perm | NA | Perm | | | |
| Protected Phases | 4 | 3 4 | | | 3 | | | 2 | | | | |
| Permitted Phases | | | | | | Free | 2 | | 2 | | | |
| Detector Phase | 4 | 3 4 | | | 3 | | 2 | 2 | 2 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 5.0 | | 5.0 | 5.0 | 5.0 | | | |
| Minimum Split (s) | 13.3 | | | | 24.8 | | 24.7 | 24.7 | 24.7 | | | |
| Total Split (s) | 50.0 | | | | 31.0 | | 39.0 | 39.0 | 39.0 | | | |
| Total Split (%) | 41.7% | | | | 25.8% | | 32.5% | 32.5% | 32.5% | | | |
| Maximum Green (s) | 41.7 | | | | 24.2 | | 32.3 | 32.3 | 32.3 | | | |
| Yellow Time (s) | 3.9 | | | | 4.7 | | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 4.4 | | | | 2.1 | | 2.0 | 2.0 | 2.0 | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 8.3 | | | | 6.8 | | 6.7 | 6.7 | 6.7 | | | |
| Lead/Lag | Lag | | | | Lead | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 0.2 | | | | 0.2 | | 0.2 | 0.2 | 0.2 | | | |
| Recall Mode | None | | | | C-Max | | None | None | None | | | |
| Walk Time (s) | | | | | 7.0 | | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | | | | 11.0 | | 11.0 | 11.0 | 11.0 | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 34.4 | 70.7 | | | 28.0 | 120.0 | 35.8 | 35.8 | 35.8 | | | |
| Actuated g/C Ratio | 0.29 | 0.59 | | | 0.23 | 1.00 | 0.30 | 0.30 | 0.30 | | | |
| v/c Ratio | 0.77 | 0.66 | | | 0.53 | 0.42 | 0.81 | 0.43 | 0.27 | | | |
| Control Delay | 44.7 | 17.6 | | | 42.3 | 0.5 | 46.4 | 34.8 | 5.3 | | | |
| Queue Delay | 26.0 | 1.5 | | | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 70.7 | 19.1 | | | 43.0 | 0.5 | 46.4 | 34.8 | 5.3 | | | |
| LOS | E | B | | | D | A | D | C | A | | | |
| Approach Delay | | 33.0 | | | 20.1 | | | 37.7 | | | | |
| Approach LOS | | C | | | C | | | D | | | | |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 30.2 Intersection LOS: C
Intersection Capacity Utilization 85.0% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 20: Loop 101 NB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 5 | 7 | 8 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 6.0 | 5.0 | 6.0 |
| Minimum Split (s) | 29.7 | 24.8 | 31.9 |
| Total Split (s) | 39.0 | 46.0 | 35.0 |
| Total Split (%) | 33% | 38% | 29% |
| Maximum Green (s) | 32.3 | 39.2 | 26.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | Yes | Yes |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 16.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|

# 2028 Background AM
# Traffic Capacity Analysis

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | ↑↑↑ | ↱ | | ↑↑↑ | | ↱ |
| Traffic Vol, veh/h | 1971 | 104 | 0 | 1830 | 0 | 3 |
| Future Vol, veh/h | 1971 | 104 | 0 | 1830 | 0 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 100 | - | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2142 | 113 | 0 | 1989 | 0 | 3 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | - | - | - | 1071 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.92 |
| Pot Cap-1 Maneuver | - | - | 0 | - | 0 | 186 |
| Stage 1 | - | - | 0 | - | 0 | - |
| Stage 2 | - | - | 0 | - | 0 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 186 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

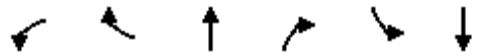
| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 24.7 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBT |
|---|---|---|---|---|
| Capacity (veh/h) | 186 | - | - | - |
| HCM Lane V/C Ratio | 0.018 | - | - | - |
| HCM Control Delay (s) | 24.7 | - | - | - |
| HCM Lane LOS | C | - | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - |

| Phase Number | 2 | 4 | 5 | 6 |
|---|---|---|---|---|
| Movement | SBTL | WBL | SBL | NBT |
| Lead/Lag | | | Lead | Lag |
| Lead-Lag Optimize | | | Yes | Yes |
| Recall Mode | C-Max | Max | None | C-Max |
| Maximum Split (s) | 90 | 30 | 12 | 78 |
| Maximum Split (%) | 75.0% | 25.0% | 10.0% | 65.0% |
| Minimum Split (s) | 22.5 | 22.5 | 9.5 | 22.5 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1 | 1 | 1 | 1 |
| Minimum Initial (s) | 5 | 5 | 5 | 5 |
| Vehicle Extension (s) | 3 | 3 | 3 | 3 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 |
| Walk Time (s) | 7 | 7 | | 7 |
| Flash Dont Walk (s) | 11 | 11 | | 11 |
| Dual Entry | Yes | Yes | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes |
| Start Time (s) | 108 | 78 | 108 | 0 |
| End Time (s) | 78 | 108 | 0 | 78 |
| Yield/Force Off (s) | 73.5 | 103.5 | 115.5 | 73.5 |
| Yield/Force Off 170(s) | 62.5 | 92.5 | 115.5 | 62.5 |
| Local Start Time (s) | 108 | 78 | 108 | 0 |
| Local Yield (s) | 73.5 | 103.5 | 115.5 | 73.5 |
| Local Yield 170(s) | 62.5 | 92.5 | 115.5 | 62.5 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 60 |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of Green | |

Splits and Phases: 4: Pima Rd & Trailside View



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 69 | 19 | 1801 | 173 | 39 | 1686 |
| Future Volume (veh/h) | 69 | 19 | 1801 | 173 | 39 | 1686 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 92 | 25 | 1958 | 188 | 42 | 1833 |
| Peak Hour Factor | 0.75 | 0.75 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 379 | 337 | 3286 | 1020 | 195 | 3638 |
| Arrive On Green | 0.21 | 0.21 | 0.64 | 0.64 | 0.03 | 0.71 |
| Sat Flow, veh/h | 1781 | 1585 | 5274 | 1585 | 1781 | 5274 |
| Grp Volume(v), veh/h | 92 | 25 | 1958 | 188 | 42 | 1833 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1585 | 1702 | 1585 | 1781 | 1702 |
| Q Serve(g_s), s | 5.1 | 1.5 | 26.6 | 5.8 | 0.9 | 19.3 |
| Cycle Q Clear(g_c), s | 5.1 | 1.5 | 26.6 | 5.8 | 0.9 | 19.3 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 379 | 337 | 3286 | 1020 | 195 | 3638 |
| V/C Ratio(X) | 0.24 | 0.07 | 0.60 | 0.18 | 0.22 | 0.50 |
| Avail Cap(c_a), veh/h | 379 | 337 | 3286 | 1020 | 250 | 3638 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 39.2 | 37.8 | 12.4 | 8.6 | 10.2 | 7.7 |
| Incr Delay (d2), s/veh | 1.5 | 0.4 | 0.8 | 0.4 | 0.5 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.4 | 2.8 | 14.0 | 3.4 | 0.6 | 9.9 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 40.8 | 38.2 | 13.2 | 9.0 | 10.8 | 8.2 |
| LnGrp LOS | D | D | B | A | B | A |
| Approach Vol, veh/h | 117 | | 2146 | | | 1875 |
| Approach Delay, s/veh | 40.2 | | 12.8 | | | 8.3 |
| Approach LOS | D | | B | | | A |

| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 90.0 | | 30.0 | 8.3 | 81.7 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | 85.5 | | 25.5 | 7.5 | 73.5 |
| Max Q Clear Time (g_c+I1), s | | 21.3 | | 7.1 | 2.9 | 28.6 |
| Green Ext Time (p_c), s | | 22.0 | | 0.3 | 0.0 | 23.3 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.5 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 9.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 8 | 74 | 114 | 1 | 49 | 1 | 57 | 1 | 1 | 1 | 7 | 5 |
| Future Vol, veh/h | 8 | 74 | 114 | 1 | 49 | 1 | 57 | 1 | 1 | 1 | 7 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 125 | - | - | - | 150 | - | - | 160 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 10 | 93 | 143 | 1 | 61 | 1 | 71 | 1 | 1 | 1 | 9 | 6 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 189 | 158 | 12 | 276 | 161 | 2 | 15 | 0 | 0 | 2 | 0 | 0 |
| Stage 1 | 14 | 14 | - | 144 | 144 | - | - | - | - | - | - | - |
| Stage 2 | 175 | 144 | - | 132 | 17 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 771 | 734 | 1069 | 676 | 731 | 1082 | 1603 | - | - | 1620 | - | - |
| Stage 1 | 1006 | 884 | - | 859 | 778 | - | - | - | - | - | - | - |
| Stage 2 | 827 | 778 | - | 871 | 881 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 694 | 701 | 1069 | 509 | 698 | 1082 | 1603 | - | - | 1620 | - | - |
| Mov Cap-2 Maneuver | 694 | 701 | - | 509 | 698 | - | - | - | - | - | - | - |
| Stage 1 | 962 | 883 | - | 821 | 744 | - | - | - | - | - | - | - |
| Stage 2 | 724 | 744 | - | 675 | 880 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 9.8 | 10.7 | 7.1 | 0.6 |
| HCM LOS | A | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1603 | - | - | 700 | 1069 | 698 | 1620 | - | - |
| HCM Lane V/C Ratio | 0.044 | - | - | 0.146 | 0.133 | 0.091 | 0.001 | - | - |
| HCM Control Delay (s) | 7.3 | - | - | 11 | 8.9 | 10.7 | 7.2 | - | - |
| HCM Lane LOS | A | - | - | B | A | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.5 | 0.5 | 0.3 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 40 | 599 | 78 | 0 | 0 |
| Future Vol, veh/h | 0 | 40 | 599 | 78 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | 100 | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 25 | 25 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 43 | 651 | 85 | 0 | 0 |

| Major/Minor | Minor1 | | Major1 | |
|---|---|---|---|---|
| Conflicting Flow All | - | 651 | 0 | 0 |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |
| Critical Hdwy | - | 6.22 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - |
| Follow-up Hdwy | - | 3.318 | - | - |
| Pot Cap-1 Maneuver | 0 | 469 | - | - |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 0 | - | - | - |
| Platoon blocked, % | | | - | - |
| Mov Cap-1 Maneuver | - | 469 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |

| Approach | WB | NB |
|---|---|---|
| HCM Control Delay, s | 13.5 | 0 |
| HCM LOS | B | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 |
|---|---|---|---|
| Capacity (veh/h) | - | - | 469 |
| HCM Lane V/C Ratio | - | - | 0.093 |
| HCM Control Delay (s) | - | - | 13.5 |
| HCM Lane LOS | - | - | B |
| HCM 95th %tile Q(veh) | - | - | 0.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.4 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 7 | 23 | 12 | 47 | 7 |
| Future Vol, veh/h | 0 | 7 | 23 | 12 | 47 | 7 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 150 | 0 | 50 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 8 | 25 | 13 | 51 | 8 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 118 | 55 | 59 | 0 | - | 0 |
| Stage 1 | 55 | - | - | - | - | - |
| Stage 2 | 63 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 878 | 1012 | 1545 | - | - | - |
| Stage 1 | 968 | - | - | - | - | - |
| Stage 2 | 960 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 864 | 1012 | 1545 | - | - | - |
| Mov Cap-2 Maneuver | 831 | - | - | - | - | - |
| Stage 1 | 953 | - | - | - | - | - |
| Stage 2 | 960 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.6 | 4.8 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1545 | - | - | 1012 | - | - |
| HCM Lane V/C Ratio | 0.016 | - | - | 0.008 | - | - |
| HCM Control Delay (s) | 7.4 | - | 0 | 8.6 | - | - |
| HCM Lane LOS | A | - | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 41 | 1558 | 58 | 24 | 1054 | 1 | 0 | 0 | 14 | 0 | 0 | 12 |
| Future Vol, veh/h | 41 | 1558 | 58 | 24 | 1054 | 1 | 0 | 0 | 14 | 0 | 0 | 12 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 150 | - | 150 | 60 | - | - | - | - | 0 | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 89 | 89 | 89 | 83 | 83 | 83 | 79 | 79 | 79 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 46 | 1751 | 65 | 29 | 1270 | 1 | 0 | 0 | 18 | 0 | 0 | 13 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1271 | 0 | 0 | 1816 | 0 | 0 | - | - | 876 | - | - | 636 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | - | - | 6.94 | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | - | - | 3.32 | - | - | 3.32 |
| Pot Cap-1 Maneuver | 542 | - | - | 334 | - | - | 0 | 0 | 292 | 0 | 0 | 421 |
| Stage 1 | - | - | - | - | - | - | 0 | 0 | - | 0 | 0 | - |
| Stage 2 | - | - | - | - | - | - | 0 | 0 | - | 0 | 0 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 542 | - | - | 334 | - | - | - | - | 292 | - | - | 421 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

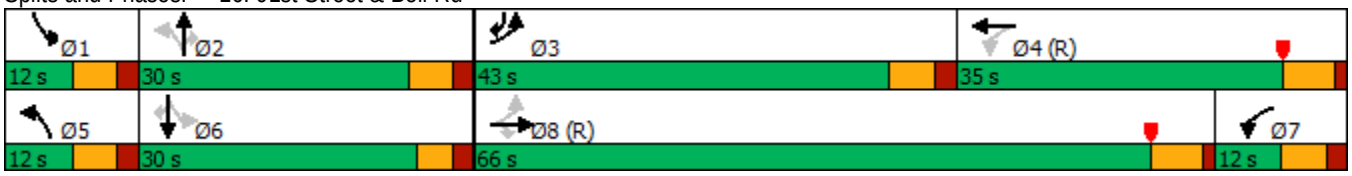
| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.3 | 0.4 | 18.1 | 13.8 |
| HCM LOS | | | C | B |

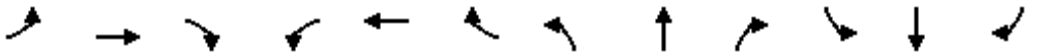
| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 292 | 542 | - | - | 334 | - | - | 421 |
| HCM Lane V/C Ratio | 0.061 | 0.085 | - | - | 0.087 | - | - | 0.031 |
| HCM Control Delay (s) | 18.1 | 12.3 | - | - | 16.8 | - | - | 13.8 |
| HCM Lane LOS | C | B | - | - | C | - | - | B |
| HCM 95th %tile Q(veh) | 0.2 | 0.3 | - | - | 0.3 | - | - | 0.1 |

| Phase Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Movement | SBL | NBTL | EBL | WBTL | NBL | SBTL | WBL | EBTL |
| Lead/Lag | Lead | Lag | Lead | Lag | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize | Yes | Yes | Yes | Yes | Yes | Yes | | |
| Recall Mode | None | None | None | C-Max | None | None | None | C-Max |
| Maximum Split (s) | 12 | 30 | 43 | 35 | 12 | 30 | 12 | 66 |
| Maximum Split (%) | 10.0% | 25.0% | 35.8% | 29.2% | 10.0% | 25.0% | 10.0% | 55.0% |
| Minimum Split (s) | 11 | 24 | 11 | 22.5 | 11 | 37.3 | 11 | 38.7 |
| Yellow Time (s) | 4 | 4 | 4 | 4.7 | 4 | 3.3 | 4 | 4.7 |
| All-Red Time (s) | 2 | 2 | 2 | 1.2 | 2 | 2 | 2 | 1 |
| Minimum Initial (s) | 5 | 5 | 5 | 10 | 5 | 7 | 5 | 10 |
| Vehicle Extension (s) | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 2 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Walk Time (s) | | 7 | | | | 8 | | 8 |
| Flash Dont Walk (s) | | 11 | | | | 24 | | 24 |
| Dual Entry | No | Yes | No | Yes | No | Yes | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Start Time (s) | 1.7 | 13.7 | 43.7 | 86.7 | 1.7 | 13.7 | 109.7 | 43.7 |
| End Time (s) | 13.7 | 43.7 | 86.7 | 1.7 | 13.7 | 43.7 | 1.7 | 109.7 |
| Yield/Force Off (s) | 7.7 | 37.7 | 80.7 | 115.8 | 7.7 | 38.4 | 115.7 | 104 |
| Yield/Force Off 170(s) | 7.7 | 26.7 | 80.7 | 115.8 | 7.7 | 14.4 | 115.7 | 80 |
| Local Start Time (s) | 17.7 | 29.7 | 59.7 | 102.7 | 17.7 | 29.7 | 5.7 | 59.7 |
| Local Yield (s) | 23.7 | 53.7 | 96.7 | 11.8 | 23.7 | 54.4 | 11.7 | 0 |
| Local Yield 170(s) | 23.7 | 42.7 | 96.7 | 11.8 | 23.7 | 30.4 | 11.7 | 96 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 130 |
| Offset: 104 (87%), Referenced to phase 4:WBTL and 8:EBTL, Start of Yellow | |

Splits and Phases: 16: 91st Street & Bell Rd





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 401 | 1044 | 114 | 28 | 971 | 8 | 57 | 8 | 13 | 3 | 16 | 45 |
| Future Volume (veh/h) | 401 | 1044 | 114 | 28 | 971 | 8 | 57 | 8 | 13 | 3 | 16 | 45 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 461 | 1200 | 92 | 33 | 1142 | 9 | 88 | 12 | 17 | 3 | 17 | 24 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.85 | 0.85 | 0.85 | 0.65 | 0.65 | 0.65 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 494 | 1786 | 796 | 493 | 1637 | 13 | 210 | 186 | 157 | 141 | 100 | 471 |
| Arrive On Green | 0.24 | 0.50 | 0.50 | 0.20 | 0.45 | 0.45 | 0.05 | 0.10 | 0.10 | 0.00 | 0.05 | 0.05 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3614 | 28 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 461 | 1200 | 92 | 33 | 562 | 589 | 88 | 12 | 17 | 3 | 17 | 24 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 1865 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 26.2 | 30.4 | 2.6 | 0.0 | 30.3 | 30.3 | 5.5 | 0.7 | 0.8 | 0.2 | 1.0 | 1.3 |
| Cycle Q Clear(g_c), s | 26.2 | 30.4 | 2.6 | 0.0 | 30.3 | 30.3 | 5.5 | 0.7 | 0.8 | 0.2 | 1.0 | 1.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.02 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 494 | 1786 | 796 | 493 | 805 | 845 | 210 | 186 | 157 | 141 | 100 | 471 |
| V/C Ratio(X) | 0.93 | 0.67 | 0.12 | 0.07 | 0.70 | 0.70 | 0.42 | 0.06 | 0.11 | 0.02 | 0.17 | 0.05 |
| Avail Cap(c_a), veh/h | 609 | 1786 | 796 | 493 | 805 | 845 | 210 | 374 | 317 | 223 | 385 | 712 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 34.2 | 22.4 | 7.8 | 24.3 | 26.2 | 26.2 | 49.4 | 49.0 | 22.1 | 53.4 | 54.3 | 30.1 |
| Incr Delay (d2), s/veh | 19.2 | 2.0 | 0.3 | 0.0 | 5.0 | 4.7 | 1.3 | 0.1 | 0.3 | 0.1 | 0.3 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 19.4 | 18.0 | 2.4 | 1.1 | 19.1 | 19.8 | 4.6 | 0.6 | 0.8 | 0.2 | 0.9 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 53.5 | 24.5 | 8.1 | 24.3 | 31.2 | 31.0 | 50.7 | 49.1 | 22.4 | 53.5 | 54.6 | 30.1 |
| LnGrp LOS | D | C | A | C | C | C | D | D | C | D | D | C |
| Approach Vol, veh/h | | 1753 | | | 1184 | | | 117 | | | 44 | |
| Approach Delay, s/veh | | 31.2 | | | 30.9 | | | 46.4 | | | 41.2 | |
| Approach LOS | | C | | | C | | | D | | | D | |

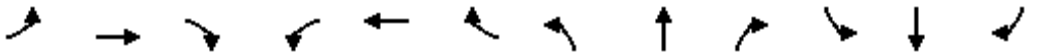
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.5 | 17.9 | 35.2 | 60.4 | 12.0 | 12.4 | 29.6 | 66.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 6.0 | * 6 | 6.0 | * 6 | 6.0 | 5.7 |
| Max Green Setting (Gmax), s | 6.0 | 24.0 | 37.0 | * 29 | 6.0 | * 25 | 6.0 | 60.3 |
| Max Q Clear Time (g_c+I1), s | 2.2 | 2.8 | 28.2 | 32.3 | 7.5 | 3.3 | 2.0 | 32.4 |
| Green Ext Time (p_c), s | 0.0 | 0.1 | 1.0 | 0.0 | 0.0 | 0.1 | 0.0 | 6.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 31.8 |
| HCM 6th LOS | C |

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



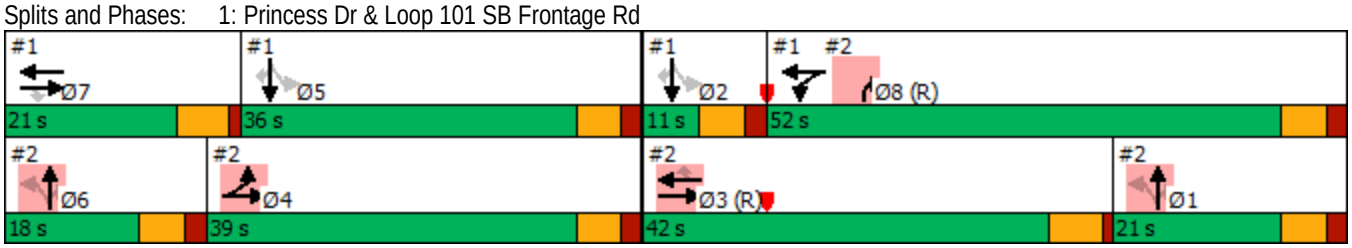
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 192 | 97 | 1345 | 476 | 0 | 0 | 0 | 0 | 690 | 867 | 262 |
| Future Volume (vph) | 0 | 192 | 97 | 1345 | 476 | 0 | 0 | 0 | 0 | 690 | 867 | 262 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 140 | | 245 | 240 | | 0 | 0 | | 0 | 355 | | 355 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 2 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 0.88 | 0.94 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.996 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.992 | |
| Satd. Flow (prot) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3166 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.992 | |
| Satd. Flow (perm) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3166 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 188 | | | | | | | | 2 | 262 |
| Link Speed (mph) | | 35 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 1345 | | | 409 | | | 1261 | | | 718 | |
| Travel Time (s) | | 26.2 | | | 6.2 | | | 28.7 | | | 10.9 | |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 213 | 108 | 1494 | 529 | 0 | 0 | 0 | 0 | 767 | 963 | 291 |
| Shared Lane Traffic (%) | | | | | | | | | | 25% | | 10% |
| Lane Group Flow (vph) | 0 | 213 | 108 | 1494 | 529 | 0 | 0 | 0 | 0 | 575 | 1184 | 262 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Right | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 36 | | | 36 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 2 5 | |
| Permitted Phases | | | 7 | | | | | | | 2 5 | | 2 5 |

| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | | | | | | |
| Future Volume (vph) | | | | | | |
| Ideal Flow (vphpl) | | | | | | |
| Storage Length (ft) | | | | | | |
| Storage Lanes | | | | | | |
| Taper Length (ft) | | | | | | |
| Lane Util. Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | | | | | | |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | | | | | | |
| Right Turn on Red | | | | | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | | | | | |
| Link Distance (ft) | | | | | | |
| Travel Time (s) | | | | | | |
| Peak Hour Factor | | | | | | |
| Adj. Flow (vph) | | | | | | |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | | | | | | |
| Enter Blocked Intersection | | | | | | |
| Lane Alignment | | | | | | |
| Median Width(ft) | | | | | | |
| Link Offset(ft) | | | | | | |
| Crosswalk Width(ft) | | | | | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | | | | | | |
| Turning Speed (mph) | | | | | | |
| Number of Detectors | | | | | | |
| Detector Template | | | | | | |
| Leading Detector (ft) | | | | | | |
| Trailing Detector (ft) | | | | | | |
| Detector 1 Position(ft) | | | | | | |
| Detector 1 Size(ft) | | | | | | |
| Detector 1 Type | | | | | | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | | | | | | |
| Detector 1 Queue (s) | | | | | | |
| Detector 1 Delay (s) | | | | | | |
| Detector 2 Position(ft) | | | | | | |
| Detector 2 Size(ft) | | | | | | |
| Detector 2 Type | | | | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | | | | |
| Turn Type | | | | | | |
| Protected Phases | 1 | 2 | 3 | 4 | 5 | 6 |
| Permitted Phases | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 7 | 7 | 8 | 7 8 | | | | | 2 5 | 2 5 | 2 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 7.0 | 7.0 | 5.0 | | | | | | | | |
| Minimum Split (s) | | 26.7 | 26.7 | 11.0 | | | | | | | | |
| Total Split (s) | | 21.0 | 21.0 | 52.0 | | | | | | | | |
| Total Split (%) | | 17.5% | 17.5% | 43.3% | | | | | | | | |
| Maximum Green (s) | | 15.3 | 15.3 | 46.0 | | | | | | | | |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | | | | | | | | |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | | | | | | | | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | | | | | | | | |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | | | | | | | | |
| Lead/Lag | | Lead | Lead | Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | | | | | | | | |
| Recall Mode | | None | None | C-Min | | | | | | | | |
| Walk Time (s) | | 4.0 | 4.0 | | | | | | | | | |
| Flash Dont Walk (s) | | 17.0 | 17.0 | | | | | | | | | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | | | | | | | | |
| Act Effct Green (s) | | 10.7 | 10.7 | 46.0 | 62.7 | | | | | 45.6 | 45.6 | 45.6 |
| Actuated g/C Ratio | | 0.09 | 0.09 | 0.38 | 0.52 | | | | | 0.38 | 0.38 | 0.38 |
| v/c Ratio | | 0.47 | 0.26 | 0.78 | 0.29 | | | | | 0.94 | 0.98 | 0.37 |
| Control Delay | | 54.8 | 1.5 | 19.8 | 1.9 | | | | | 61.7 | 59.9 | 4.8 |
| Queue Delay | | 0.0 | 0.0 | 28.3 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 54.8 | 1.5 | 48.0 | 1.9 | | | | | 61.7 | 59.9 | 4.8 |
| LOS | | D | A | D | A | | | | | E | E | A |
| Approach Delay | | 36.8 | | | 36.0 | | | | | | 53.2 | |
| Approach LOS | | D | | | D | | | | | | D | |

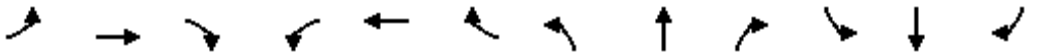
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 47 (39%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.48 | | | |
| Intersection Signal Delay: 44.0 | | Intersection LOS: D | |
| Intersection Capacity Utilization 143.9% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Princess Dr & Loop 101 SB Frontage Rd



| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Detector Phase | | | | | | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 10.0 | 5.0 | 7.0 | 1.0 |
| Minimum Split (s) | 13.0 | 7.0 | 26.7 | 11.0 | 50.0 | 7.0 |
| Total Split (s) | 21.0 | 11.0 | 42.0 | 39.0 | 36.0 | 18.0 |
| Total Split (%) | 18% | 9% | 35% | 33% | 30% | 15% |
| Maximum Green (s) | 15.0 | 5.0 | 36.3 | 33.0 | 30.0 | 12.0 |
| Yellow Time (s) | 4.0 | 4.0 | 4.7 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | | | | | |
| Total Lost Time (s) | | | | | | |
| Lead/Lag | Lag | Lead | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 5.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | C-Min | None | None | None |
| Walk Time (s) | | | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | | 17.0 | | 40.0 | |
| Pedestrian Calls (#/hr) | | | 0 | | 0 | |
| Act Effct Green (s) | | | | | | |
| Actuated g/C Ratio | | | | | | |
| v/c Ratio | | | | | | |
| Control Delay | | | | | | |
| Queue Delay | | | | | | |
| Total Delay | | | | | | |
| LOS | | | | | | |
| Approach Delay | | | | | | |
| Approach LOS | | | | | | |

| Intersection Summary |
|---|



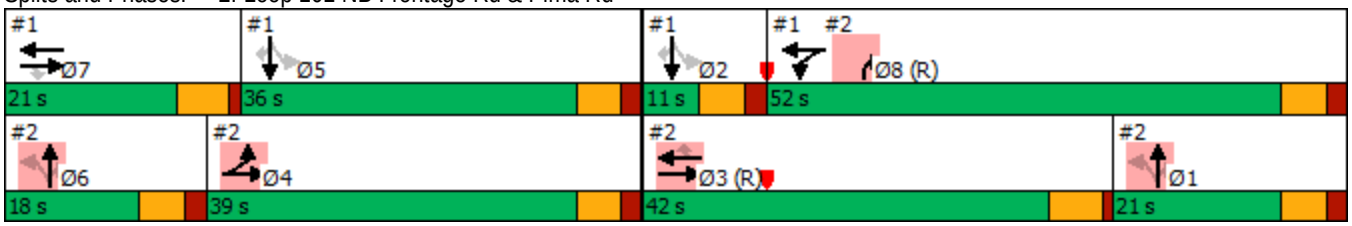
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 30 | 820 | 0 | 0 | 1461 | 370 | 408 | 508 | 1208 | 0 | 0 | 0 |
| Future Volume (vph) | 30 | 820 | 0 | 0 | 1461 | 370 | 408 | 508 | 1208 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 265 | | 0 | 350 | | 285 | 275 | | 275 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.81 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.991 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3360 | 1583 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.991 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3360 | 1583 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 411 | | | 162 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 409 | | | 1059 | | | 1024 | | | 527 | |
| Travel Time (s) | | 6.2 | | | 16.0 | | | 15.5 | | | 12.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 33 | 911 | 0 | 0 | 1623 | 411 | 453 | 564 | 1342 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 27% | | | | | |
| Lane Group Flow (vph) | 33 | 911 | 0 | 0 | 1623 | 411 | 331 | 686 | 1342 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | L NA | Right | Left | Left | Right | Left | Left | R NA | Left | Left | Right |
| Median Width(ft) | | 24 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | custom | | | |
| Protected Phases | 4 | 3 4! | | | 3 | | | 1 6 | 8! | | | |
| Permitted Phases | | | | | | 3 | 1 6 | | 1 6 | | | |

| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 |
|---|---|---|---|---|---|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | | | | | |
| Future Volume (vph) | | | | | |
| Ideal Flow (vphpl) | | | | | |
| Storage Length (ft) | | | | | |
| Storage Lanes | | | | | |
| Taper Length (ft) | | | | | |
| Lane Util. Factor | | | | | |
| Frt | | | | | |
| Flt Protected | | | | | |
| Satd. Flow (prot) | | | | | |
| Flt Permitted | | | | | |
| Satd. Flow (perm) | | | | | |
| Right Turn on Red | | | | | |
| Satd. Flow (RTOR) | | | | | |
| Link Speed (mph) | | | | | |
| Link Distance (ft) | | | | | |
| Travel Time (s) | | | | | |
| Peak Hour Factor | | | | | |
| Adj. Flow (vph) | | | | | |
| Shared Lane Traffic (%) | | | | | |
| Lane Group Flow (vph) | | | | | |
| Enter Blocked Intersection | | | | | |
| Lane Alignment | | | | | |
| Median Width(ft) | | | | | |
| Link Offset(ft) | | | | | |
| Crosswalk Width(ft) | | | | | |
| Two way Left Turn Lane | | | | | |
| Headway Factor | | | | | |
| Turning Speed (mph) | | | | | |
| Number of Detectors | | | | | |
| Detector Template | | | | | |
| Leading Detector (ft) | | | | | |
| Trailing Detector (ft) | | | | | |
| Detector 1 Position(ft) | | | | | |
| Detector 1 Size(ft) | | | | | |
| Detector 1 Type | | | | | |
| Detector 1 Channel | | | | | |
| Detector 1 Extend (s) | | | | | |
| Detector 1 Queue (s) | | | | | |
| Detector 1 Delay (s) | | | | | |
| Detector 2 Position(ft) | | | | | |
| Detector 2 Size(ft) | | | | | |
| Detector 2 Type | | | | | |
| Detector 2 Channel | | | | | |
| Detector 2 Extend (s) | | | | | |
| Turn Type | | | | | |
| Protected Phases | 1 | 2 | 5 | 6 | 7 |
| Permitted Phases | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 4 | 3 4 | | | 3 | 3 | 1 6 | 1 6 | 8 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 10.0 | 10.0 | | | 5.0 | | | |
| Minimum Split (s) | 11.0 | | | | 26.7 | 26.7 | | | 11.0 | | | |
| Total Split (s) | 39.0 | | | | 42.0 | 42.0 | | | 52.0 | | | |
| Total Split (%) | 32.5% | | | | 35.0% | 35.0% | | | 43.3% | | | |
| Maximum Green (s) | 33.0 | | | | 36.3 | 36.3 | | | 46.0 | | | |
| Yellow Time (s) | 4.0 | | | | 4.7 | 4.7 | | | 4.0 | | | |
| All-Red Time (s) | 2.0 | | | | 1.0 | 1.0 | | | 2.0 | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | 0.0 | | | 0.0 | | | |
| Total Lost Time (s) | 6.0 | | | | 5.7 | 5.7 | | | 6.0 | | | |
| Lead/Lag | Lag | | | | Lead | Lead | | | Lag | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 5.0 | 5.0 | | | 2.0 | | | |
| Recall Mode | None | | | | C-Min | C-Min | | | C-Min | | | |
| Walk Time (s) | | | | | 4.0 | 4.0 | | | | | | |
| Flash Dont Walk (s) | | | | | 17.0 | 17.0 | | | | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | 0 | | | | | | |
| Act Effct Green (s) | 34.0 | 76.3 | | | 36.3 | 36.3 | 32.0 | 32.0 | 63.0 | | | |
| Actuated g/C Ratio | 0.28 | 0.64 | | | 0.30 | 0.30 | 0.27 | 0.27 | 0.52 | | | |
| v/c Ratio | 0.07 | 0.40 | | | 0.71 | 0.54 | 0.77 | 0.77 | 1.48 | | | |
| Control Delay | 25.8 | 2.9 | | | 33.1 | 7.2 | 53.8 | 46.9 | 245.5 | | | |
| Queue Delay | 0.0 | 1.3 | | | 1.8 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 25.8 | 4.2 | | | 34.8 | 7.2 | 53.8 | 46.9 | 245.5 | | | |
| LOS | C | A | | | C | A | D | D | F | | | |
| Approach Delay | | 4.9 | | | 29.2 | | | 160.8 | | | | |
| Approach LOS | | A | | | C | | | F | | | | |

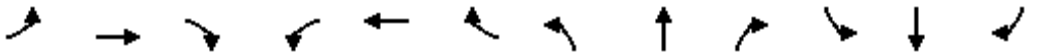
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 47 (39%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.48 | | | |
| Intersection Signal Delay: 83.1 | | Intersection LOS: F | |
| Intersection Capacity Utilization 143.9% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |
| ! Phase conflict between lane groups. | | | |

Splits and Phases: 2: Loop 101 NB Frontage Rd & Pima Rd



| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 |
|---|---|---|---|---|---|
| Detector Phase | | | | | |
| Switch Phase | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 7.0 | 1.0 | 7.0 |
| Minimum Split (s) | 13.0 | 7.0 | 50.0 | 7.0 | 26.7 |
| Total Split (s) | 21.0 | 11.0 | 36.0 | 18.0 | 21.0 |
| Total Split (%) | 18% | 9% | 30% | 15% | 18% |
| Maximum Green (s) | 15.0 | 5.0 | 30.0 | 12.0 | 15.3 |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.7 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 1.0 |
| Lost Time Adjust (s) | | | | | |
| Total Lost Time (s) | | | | | |
| Lead/Lag | Lag | Lead | Lag | Lead | Lead |
| Lead-Lag Optimize? | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | None | None | None |
| Walk Time (s) | | | 4.0 | | 4.0 |
| Flash Dont Walk (s) | | | 40.0 | | 17.0 |
| Pedestrian Calls (#/hr) | | | 0 | | 0 |
| Act Effct Green (s) | | | | | |
| Actuated g/C Ratio | | | | | |
| v/c Ratio | | | | | |
| Control Delay | | | | | |
| Queue Delay | | | | | |
| Total Delay | | | | | |
| LOS | | | | | |
| Approach Delay | | | | | |
| Approach LOS | | | | | |

| Intersection Summary |
|---|



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 353 | 126 | 563 | 541 | 0 | 0 | 0 | 0 | 820 | 166 | 44 |
| Future Volume (vph) | 0 | 353 | 126 | 563 | 541 | 0 | 0 | 0 | 0 | 820 | 166 | 44 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 240 | | 315 | 220 | | 0 | 0 | | 0 | 385 | | 385 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.999 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.966 | |
| Satd. Flow (prot) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3092 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.966 | |
| Satd. Flow (perm) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3092 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 148 | | | | | | | | | 92 |
| Link Speed (mph) | | 45 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 824 | | | 389 | | | 598 | | | 1243 | |
| Travel Time (s) | | 12.5 | | | 5.9 | | | 13.6 | | | 18.8 | |
| Peak Hour Factor | 0.25 | 0.85 | 0.85 | 0.89 | 0.89 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 415 | 148 | 633 | 608 | 0 | 0 | 0 | 0 | 911 | 184 | 49 |
| Shared Lane Traffic (%) | | | | | | | | | | 50% | | 10% |
| Lane Group Flow (vph) | 0 | 415 | 148 | 633 | 608 | 0 | 0 | 0 | 0 | 455 | 645 | 44 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | | | | | 2 | |
| Permitted Phases | | | 8 | | | | | | | 2 | | 2 |

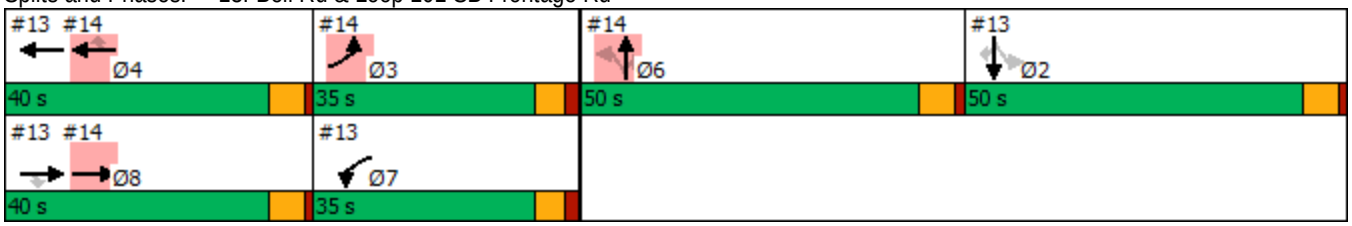
| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 3 | 6 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 8 | 8 | 7 | 4 | | | | | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 10.0 | 10.0 | 5.0 | 10.0 | | | | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | | 35.7 | 35.7 | 11.0 | 39.7 | | | | | 50.9 | 50.9 | 50.9 |
| Total Split (s) | | 40.0 | 40.0 | 35.0 | 40.0 | | | | | 50.0 | 50.0 | 50.0 |
| Total Split (%) | | 22.9% | 22.9% | 20.0% | 22.9% | | | | | 28.6% | 28.6% | 28.6% |
| Maximum Green (s) | | 34.3 | 34.3 | 29.0 | 34.3 | | | | | 44.1 | 44.1 | 44.1 |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | 4.7 | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | 1.0 | | | | | 1.2 | 1.2 | 1.2 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | 5.7 | | | | | 5.9 | 5.9 | 5.9 |
| Lead/Lag | | Lead | Lead | Lag | Lead | | | | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | 2.0 | 2.0 | 2.0 |
| Recall Mode | | Min | Min | None | None | | | | | None | None | None |
| Walk Time (s) | | 7.0 | 7.0 | | 8.0 | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 23.0 | 23.0 | | 26.0 | | | | | 38.0 | 38.0 | 38.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 34.3 | 34.3 | 29.0 | 33.2 | | | | | 44.1 | 44.1 | 44.1 |
| Actuated g/C Ratio | | 0.20 | 0.20 | 0.17 | 0.19 | | | | | 0.26 | 0.26 | 0.26 |
| v/c Ratio | | 0.41 | 0.34 | 1.10 | 0.89 | | | | | 1.11 | 1.11dl | 0.10 |
| Control Delay | | 62.3 | 10.1 | 124.1 | 46.9 | | | | | 134.4 | 70.5 | 0.5 |
| Queue Delay | | 1.1 | 0.0 | 1.1 | 1.2 | | | | | 4.6 | 48.6 | 0.0 |
| Total Delay | | 63.3 | 10.1 | 125.2 | 48.1 | | | | | 139.0 | 119.1 | 0.5 |
| LOS | | E | B | F | D | | | | | F | F | A |
| Approach Delay | | 49.4 | | | 87.4 | | | | | | 122.4 | |
| Approach LOS | | D | | | F | | | | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 172.9 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.83 | | | |
| Intersection Signal Delay: 93.7 | | Intersection LOS: F | |
| Intersection Capacity Utilization 84.7% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 13: Bell Rd & Loop 101 SB Frontage Rd



| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 5.0 | 7.0 |
| Minimum Split (s) | 11.0 | 48.0 |
| Total Split (s) | 35.0 | 50.0 |
| Total Split (%) | 20% | 29% |
| Maximum Green (s) | 29.0 | 44.0 |
| Yellow Time (s) | 4.0 | 4.7 |
| All-Red Time (s) | 2.0 | 1.3 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lead |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | Min | None |
| Walk Time (s) | | 7.0 |
| Flash Dont Walk (s) | | 35.0 |
| Pedestrian Calls (#/hr) | | 0 |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|

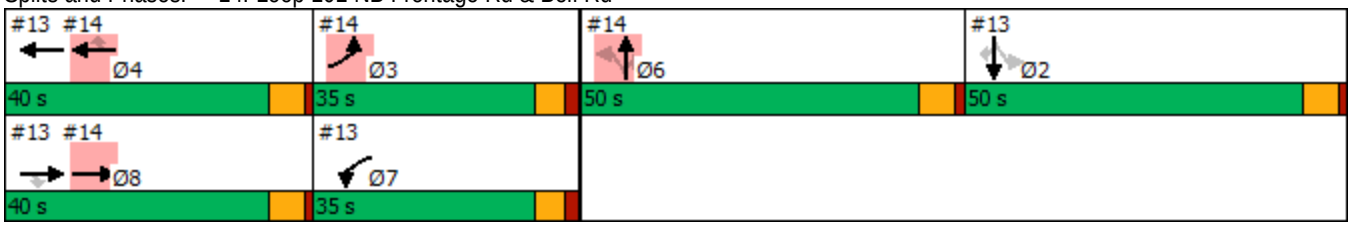
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 18 | 1155 | 0 | 0 | 703 | 387 | 402 | 284 | 570 | 0 | 0 | 0 |
| Future Volume (vph) | 18 | 1155 | 0 | 0 | 703 | 387 | 402 | 284 | 570 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 220 | | 0 | 235 | | 175 | 310 | | 310 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.86 | 1.00 | 0.91 | 0.86 | 0.91 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | 0.935 | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.994 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 2978 | 1441 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.994 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 2978 | 1441 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 383 | | 83 | 323 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 389 | | | 797 | | | 655 | | | 974 | |
| Travel Time (s) | | 5.9 | | | 12.1 | | | 9.9 | | | 22.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 20 | 1283 | 0 | 0 | 790 | 430 | 447 | 316 | 633 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 19% | | 49% | | | |
| Lane Group Flow (vph) | 20 | 1283 | 0 | 0 | 790 | 430 | 362 | 711 | 323 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | Perm | | | |
| Protected Phases | 3 | 8 | | | 4 | | | 6 | | | | |
| Permitted Phases | | | | | | 4 | 6 | | 6 | | | |

| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 2 | 7 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 3 | 8 | | | 4 | 4 | 6 | 6 | 6 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | | | 10.0 | 10.0 | 7.0 | 7.0 | 7.0 | | | |
| Minimum Split (s) | 11.0 | 35.7 | | | 39.7 | 39.7 | 48.0 | 48.0 | 48.0 | | | |
| Total Split (s) | 35.0 | 40.0 | | | 40.0 | 40.0 | 50.0 | 50.0 | 50.0 | | | |
| Total Split (%) | 20.0% | 22.9% | | | 22.9% | 22.9% | 28.6% | 28.6% | 28.6% | | | |
| Maximum Green (s) | 29.0 | 34.3 | | | 34.3 | 34.3 | 44.0 | 44.0 | 44.0 | | | |
| Yellow Time (s) | 4.0 | 4.7 | | | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 2.0 | 1.0 | | | 1.0 | 1.0 | 1.3 | 1.3 | 1.3 | | | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 6.0 | 5.7 | | | 5.7 | 5.7 | 6.0 | 6.0 | 6.0 | | | |
| Lead/Lag | Lag | Lead | | | Lead | Lead | Lead | Lead | Lead | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Recall Mode | Min | Min | | | None | None | None | None | None | | | |
| Walk Time (s) | | 7.0 | | | 8.0 | 8.0 | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | 23.0 | | | 26.0 | 26.0 | 35.0 | 35.0 | 35.0 | | | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 30.1 | 34.3 | | | 33.2 | 33.2 | 41.8 | 41.8 | 41.8 | | | |
| Actuated g/C Ratio | 0.17 | 0.20 | | | 0.19 | 0.19 | 0.24 | 0.24 | 0.24 | | | |
| v/c Ratio | 0.06 | 1.83 | | | 0.64 | 0.70 | 0.93 | 0.91 | 0.54 | | | |
| Control Delay | 53.9 | 400.2 | | | 67.1 | 15.7 | 94.6 | 72.1 | 8.4 | | | |
| Queue Delay | 0.0 | 0.0 | | | 3.9 | 0.0 | 0.0 | 0.4 | 0.0 | | | |
| Total Delay | 53.9 | 400.2 | | | 71.1 | 15.7 | 94.6 | 72.5 | 8.4 | | | |
| LOS | D | F | | | E | B | F | E | A | | | |
| Approach Delay | | 394.9 | | | 51.6 | | | 63.4 | | | | |
| Approach LOS | | F | | | D | | | E | | | | |

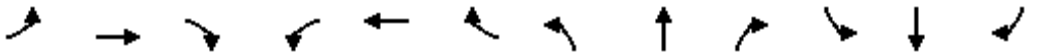
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 172.9 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.83 | | | |
| Intersection Signal Delay: 169.9 | | Intersection LOS: F | |
| Intersection Capacity Utilization 84.7% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Loop 101 NB Frontage Rd & Bell Rd



| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 7.0 | 5.0 |
| Minimum Split (s) | 50.9 | 11.0 |
| Total Split (s) | 50.0 | 35.0 |
| Total Split (%) | 29% | 20% |
| Maximum Green (s) | 44.1 | 29.0 |
| Yellow Time (s) | 4.7 | 4.0 |
| All-Red Time (s) | 1.2 | 2.0 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lag |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | None | None |
| Walk Time (s) | 7.0 | |
| Flash Dont Walk (s) | 38.0 | |
| Pedestrian Calls (#/hr) | 0 | |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1158 | 528 | 252 | 1287 | 0 | 0 | 0 | 0 | 866 | 667 | 562 |
| Future Volume (vph) | 0 | 1158 | 528 | 252 | 1287 | 0 | 0 | 0 | 0 | 866 | 667 | 562 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 185 | | 0 | 0 | | 0 | 0 | | 0 | 250 | | 250 |
| Storage Lanes | 2 | | 1 | 2 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.81 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 | 0.95 | 1.00 |
| Ped Bike Factor | | | 0.99 | 1.00 | | | | | | | | 0.99 |
| Frt | | | 0.850 | | | | | | | | | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 7192 | 1482 | 3019 | 4940 | 0 | 0 | 0 | 0 | 3183 | 3610 | 1538 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 7192 | 1463 | 3017 | 4940 | 0 | 0 | 0 | 0 | 3183 | 3610 | 1517 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 413 | | | | | | | | | 172 |
| Link Speed (mph) | | 45 | | | 45 | | | 30 | | | 30 | |
| Link Distance (ft) | | 675 | | | 322 | | | 835 | | | 832 | |
| Travel Time (s) | | 10.2 | | | 4.9 | | | 19.0 | | | 18.9 | |
| Confl. Peds. (#/hr) | 1 | | 1 | 1 | | | | | | | | 1 |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.85 | 0.85 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 0% | 7% | 9% | 16% | 5% | 0% | 0% | 0% | 0% | 10% | 0% | 5% |
| Adj. Flow (vph) | 0 | 1287 | 587 | 296 | 1514 | 0 | 0 | 0 | 0 | 962 | 741 | 624 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 1287 | 587 | 296 | 1514 | 0 | 0 | 0 | 0 | 962 | 741 | 624 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 60 | | 60 | 60 | | 60 | 60 | | 60 | 60 | | 60 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |

| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

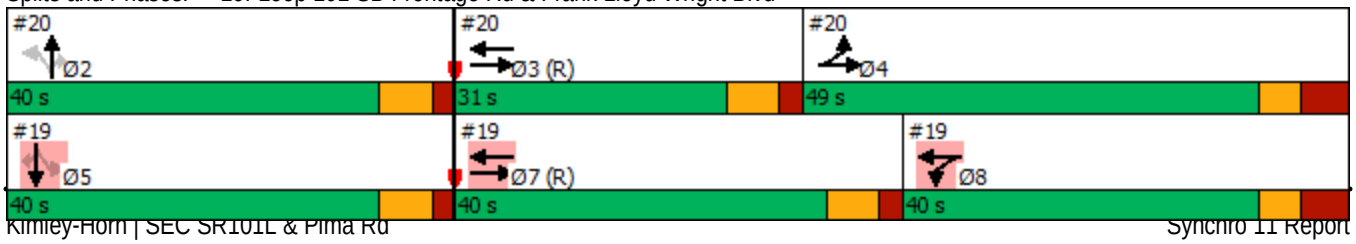
## 19: Loop 101 SB Frontage Rd & Frank Lloyd Wright Blvd

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | | NA | Free | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 5 | |
| Permitted Phases | | | Free | | | | | | | 5 | | 5 |
| Detector Phase | | 7 | | 8 | 7 8 | | | | | 5 | 5 | 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 5.0 | | 6.0 | | | | | | 6.0 | 6.0 | 6.0 |
| Minimum Split (s) | | 24.8 | | 31.9 | | | | | | 29.7 | 29.7 | 29.7 |
| Total Split (s) | | 40.0 | | 40.0 | | | | | | 40.0 | 40.0 | 40.0 |
| Total Split (%) | | 33.3% | | 33.3% | | | | | | 33.3% | 33.3% | 33.3% |
| Maximum Green (s) | | 33.2 | | 31.7 | | | | | | 33.3 | 33.3 | 33.3 |
| Yellow Time (s) | | 4.7 | | 3.9 | | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 2.1 | | 4.4 | | | | | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.8 | | 8.3 | | | | | | 6.7 | 6.7 | 6.7 |
| Lead/Lag | | Lead | | Lag | | | | | | | | |
| Lead-Lag Optimize? | | Yes | | Yes | | | | | | | | |
| Vehicle Extension (s) | | 0.2 | | 0.2 | | | | | | 0.2 | 0.2 | 0.2 |
| Recall Mode | | C-Max | | None | | | | | | None | None | None |
| Walk Time (s) | | 7.0 | | | | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 11.0 | | | | | | | | 16.0 | 16.0 | 16.0 |
| Pedestrian Calls (#/hr) | | 0 | | | | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 33.2 | 120.0 | 21.5 | 63.0 | | | | | 43.5 | 43.5 | 43.5 |
| Actuated g/C Ratio | | 0.28 | 1.00 | 0.18 | 0.52 | | | | | 0.36 | 0.36 | 0.36 |
| v/c Ratio | | 0.65 | 0.40 | 0.55 | 0.58 | | | | | 0.83 | 0.57 | 0.95 |
| Control Delay | | 40.0 | 0.8 | 54.4 | 24.8 | | | | | 43.4 | 33.7 | 52.2 |
| Queue Delay | | 1.9 | 0.0 | 0.0 | 11.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 41.9 | 0.8 | 54.4 | 35.8 | | | | | 43.4 | 33.7 | 52.2 |
| LOS | | D | A | D | D | | | | | D | C | D |
| Approach Delay | | 29.0 | | | 38.8 | | | | | | 42.7 | |
| Approach LOS | | C | | | D | | | | | | D | |

### Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 37.3 Intersection LOS: D
Intersection Capacity Utilization 94.1% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 19: Loop 101 SB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 2 | 3 | 4 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.7 | 24.8 | 13.3 |
| Total Split (s) | 40.0 | 31.0 | 49.0 |
| Total Split (%) | 33% | 26% | 41% |
| Maximum Green (s) | 33.3 | 24.2 | 40.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | Yes | Yes |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 618 | 1406 | 0 | 0 | 832 | 1122 | 707 | 871 | 96 | 0 | 0 | 0 |
| Future Volume (vph) | 618 | 1406 | 0 | 0 | 832 | 1122 | 707 | 871 | 96 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 245 | | 150 | 250 | | 250 | 0 | | 0 |
| Storage Lanes | 2 | | 0 | 2 | | 2 | 2 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.81 | 0.88 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (prot) | 3183 | 4893 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (perm) | 3183 | 4893 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 562 | | | 172 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 45 | |
| Link Distance (ft) | | 322 | | | 1160 | | | 836 | | | 801 | |
| Travel Time (s) | | 4.9 | | | 17.6 | | | 12.7 | | | 12.1 | |
| Confl. Peds. (#/hr) | | | 1 | | | | | | | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.85 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Heavy Vehicles (%) | 10% | 6% | 0% | 0% | 6% | 14% | 2% | 0% | 2% | 0% | 0% | 0% |
| Adj. Flow (vph) | 687 | 1562 | 0 | 0 | 979 | 1247 | 786 | 968 | 107 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 687 | 1562 | 0 | 0 | 979 | 1247 | 786 | 968 | 107 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 60 | | 60 | 60 | | 60 | 60 | | 60 | 60 | | 60 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |

| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

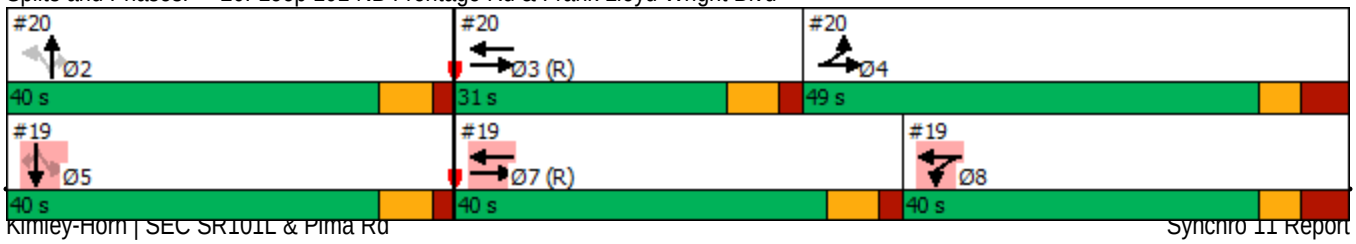
## 20: Loop 101 NB Frontage Rd & Frank Lloyd Wright Blvd

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Prot | NA | | | NA | Free | Perm | NA | Perm | | | |
| Protected Phases | 4 | 3 4 | | | 3 | | | 2 | | | | |
| Permitted Phases | | | | | | Free | 2 | | 2 | | | |
| Detector Phase | 4 | 3 4 | | | 3 | | 2 | 2 | 2 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 5.0 | | 5.0 | 5.0 | 5.0 | | | |
| Minimum Split (s) | 13.3 | | | | 24.8 | | 24.7 | 24.7 | 24.7 | | | |
| Total Split (s) | 49.0 | | | | 31.0 | | 40.0 | 40.0 | 40.0 | | | |
| Total Split (%) | 40.8% | | | | 25.8% | | 33.3% | 33.3% | 33.3% | | | |
| Maximum Green (s) | 40.7 | | | | 24.2 | | 33.3 | 33.3 | 33.3 | | | |
| Yellow Time (s) | 3.9 | | | | 4.7 | | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 4.4 | | | | 2.1 | | 2.0 | 2.0 | 2.0 | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 8.3 | | | | 6.8 | | 6.7 | 6.7 | 6.7 | | | |
| Lead/Lag | Lag | | | | Lead | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 0.2 | | | | 0.2 | | 0.2 | 0.2 | 0.2 | | | |
| Recall Mode | None | | | | C-Max | | None | None | None | | | |
| Walk Time (s) | | | | | 7.0 | | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | | | | 11.0 | | 11.0 | 11.0 | 11.0 | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 30.5 | 63.0 | | | 24.2 | 120.0 | 43.5 | 43.5 | 43.5 | | | |
| Actuated g/C Ratio | 0.25 | 0.52 | | | 0.20 | 1.00 | 0.36 | 0.36 | 0.36 | | | |
| v/c Ratio | 0.85 | 0.61 | | | 0.67 | 0.50 | 0.63 | 0.51 | 0.16 | | | |
| Control Delay | 53.7 | 22.1 | | | 46.8 | 0.7 | 35.4 | 32.0 | 0.9 | | | |
| Queue Delay | 6.4 | 1.3 | | | 11.2 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 60.1 | 23.4 | | | 58.0 | 0.7 | 35.4 | 32.0 | 0.9 | | | |
| LOS | E | C | | | E | A | D | C | A | | | |
| Approach Delay | | 34.6 | | | 25.9 | | | 31.7 | | | | |
| Approach LOS | | C | | | C | | | C | | | | |

### Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 30.7 Intersection LOS: C
Intersection Capacity Utilization 94.1% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 20: Loop 101 NB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 5 | 7 | 8 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 6.0 | 5.0 | 6.0 |
| Minimum Split (s) | 29.7 | 24.8 | 31.9 |
| Total Split (s) | 40.0 | 40.0 | 40.0 |
| Total Split (%) | 33% | 33% | 33% |
| Maximum Green (s) | 33.3 | 33.2 | 31.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | Yes | Yes |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 16.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|

# 2028 Background PM
# Traffic Capacity Analysis

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1752 | 36 | 0 | 1768 | 0 | 10 |
| Future Vol, veh/h | 1752 | 36 | 0 | 1768 | 0 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 100 | - | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1904 | 39 | 0 | 1922 | 0 | 11 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | - | - | - | 952 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.92 |
| Pot Cap-1 Maneuver | - | - | 0 | - | 0 | 223 |
| Stage 1 | - | - | 0 | - | 0 | - |
| Stage 2 | - | - | 0 | - | 0 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 223 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 22 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBT |
|---|---|---|---|---|
| Capacity (veh/h) | 223 | - | - | - |
| HCM Lane V/C Ratio | 0.049 | - | - | - |
| HCM Control Delay (s) | 22 | - | - | - |
| HCM Lane LOS | C | - | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - |

| Phase Number | 2 | 4 | 5 | 6 |
|---|---|---|---|---|
| Movement | SBTL | WBL | SBL | NBT |
| Lead/Lag | | | Lead | Lag |
| Lead-Lag Optimize | | | Yes | Yes |
| Recall Mode | C-Max | Max | None | C-Max |
| Maximum Split (s) | 90 | 30 | 12 | 78 |
| Maximum Split (%) | 75.0% | 25.0% | 10.0% | 65.0% |
| Minimum Split (s) | 22.5 | 22.5 | 9.5 | 22.5 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1 | 1 | 1 | 1 |
| Minimum Initial (s) | 5 | 5 | 5 | 5 |
| Vehicle Extension (s) | 3 | 3 | 3 | 3 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 |
| Walk Time (s) | 7 | 7 | | 7 |
| Flash Dont Walk (s) | 11 | 11 | | 11 |
| Dual Entry | Yes | Yes | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes |
| Start Time (s) | 108 | 78 | 108 | 0 |
| End Time (s) | 78 | 108 | 0 | 78 |
| Yield/Force Off (s) | 73.5 | 103.5 | 115.5 | 73.5 |
| Yield/Force Off 170(s) | 62.5 | 92.5 | 115.5 | 62.5 |
| Local Start Time (s) | 108 | 78 | 108 | 0 |
| Local Yield (s) | 73.5 | 103.5 | 115.5 | 73.5 |
| Local Yield 170(s) | 62.5 | 92.5 | 115.5 | 62.5 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 60 |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of Green | |

Splits and Phases: 4: Pima Rd & Trailside View

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 103 | 58 | 1639 | 123 | 19 | 1651 |
| Future Volume (veh/h) | 103 | 58 | 1639 | 123 | 19 | 1651 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 132 | 74 | 1782 | 134 | 22 | 1942 |
| Peak Hour Factor | 0.78 | 0.78 | 0.92 | 0.92 | 0.85 | 0.85 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 379 | 337 | 3336 | 1036 | 208 | 3638 |
| Arrive On Green | 0.21 | 0.21 | 0.65 | 0.65 | 0.02 | 0.71 |
| Sat Flow, veh/h | 1781 | 1585 | 5274 | 1585 | 1781 | 5274 |
| Grp Volume(v), veh/h | 132 | 74 | 1782 | 134 | 22 | 1942 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1585 | 1702 | 1585 | 1781 | 1702 |
| Q Serve(g_s), s | 7.6 | 4.6 | 22.3 | 3.8 | 0.5 | 21.2 |
| Cycle Q Clear(g_c), s | 7.6 | 4.6 | 22.3 | 3.8 | 0.5 | 21.2 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 379 | 337 | 3336 | 1036 | 208 | 3638 |
| V/C Ratio(X) | 0.35 | 0.22 | 0.53 | 0.13 | 0.11 | 0.53 |
| Avail Cap(c_a), veh/h | 379 | 337 | 3336 | 1036 | 281 | 3638 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 40.2 | 39.0 | 11.1 | 7.9 | 8.5 | 8.0 |
| Incr Delay (d2), s/veh | 2.5 | 1.5 | 0.6 | 0.3 | 0.2 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 6.5 | 8.0 | 12.0 | 2.2 | 0.3 | 10.6 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 42.7 | 40.5 | 11.7 | 8.1 | 8.7 | 8.6 |
| LnGrp LOS | D | D | B | A | A | A |
| Approach Vol, veh/h | 206 | | 1916 | | | 1964 |
| Approach Delay, s/veh | 41.9 | | 11.4 | | | 8.6 |
| Approach LOS | D | | B | | | A |

| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 90.0 | | 30.0 | 7.1 | 82.9 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | 85.5 | | 25.5 | 7.5 | 73.5 |
| Max Q Clear Time (g_c+I1), s | | 23.2 | | 9.6 | 2.5 | 24.3 |
| Green Ext Time (p_c), s | | 24.3 | | 0.5 | 0.0 | 20.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.6 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 9.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 9 | 71 | 87 | 1 | 61 | 1 | 87 | 6 | 1 | 1 | 2 | 6 |
| Future Vol, veh/h | 9 | 71 | 87 | 1 | 61 | 1 | 87 | 6 | 1 | 1 | 2 | 6 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 125 | - | - | - | 150 | - | - | 160 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 89 | 109 | 1 | 76 | 1 | 109 | 8 | 1 | 1 | 3 | 8 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 274 | 236 | 7 | 335 | 240 | 9 | 11 | 0 | 0 | 9 | 0 | 0 |
| Stage 1 | 9 | 9 | - | 227 | 227 | - | - | - | - | - | - | - |
| Stage 2 | 265 | 227 | - | 108 | 13 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 678 | 665 | 1075 | 619 | 661 | 1073 | 1608 | - | - | 1611 | - | - |
| Stage 1 | 1012 | 888 | - | 776 | 716 | - | - | - | - | - | - | - |
| Stage 2 | 740 | 716 | - | 897 | 885 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 582 | 619 | 1075 | 470 | 615 | 1073 | 1608 | - | - | 1611 | - | - |
| Mov Cap-2 Maneuver | 582 | 619 | - | 470 | 615 | - | - | - | - | - | - | - |
| Stage 1 | 943 | 887 | - | 723 | 667 | - | - | - | - | - | - | - |
| Stage 2 | 610 | 667 | - | 725 | 884 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 10.3 | 11.7 | 6.8 | 0.8 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1608 | - | - | 615 | 1075 | 616 | 1611 | - | - |
| HCM Lane V/C Ratio | 0.068 | - | - | 0.163 | 0.101 | 0.128 | 0.001 | - | - |
| HCM Control Delay (s) | 7.4 | - | - | 12 | 8.7 | 11.7 | 7.2 | - | - |
| HCM Lane LOS | A | - | - | B | A | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0.6 | 0.3 | 0.4 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.4 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 139 | 844 | 24 | 0 | 0 |
| Future Vol, veh/h | 0 | 139 | 844 | 24 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | 100 | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 25 | 25 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 151 | 917 | 26 | 0 | 0 |

| Major/Minor | Minor1 | | Major1 | |
|---|---|---|---|---|
| Conflicting Flow All | - | 917 | 0 | 0 |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |
| Critical Hdwy | - | 6.22 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - |
| Follow-up Hdwy | - | 3.318 | - | - |
| Pot Cap-1 Maneuver | 0 | 330 | - | - |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 0 | - | - | - |
| Platoon blocked, % | | | - | - |
| Mov Cap-1 Maneuver | - | 330 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |

| Approach | WB | NB |
|---|---|---|
| HCM Control Delay, s | 24.8 | 0 |
| HCM LOS | C | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 |
|---|---|---|---|
| Capacity (veh/h) | - | - | 330 |
| HCM Lane V/C Ratio | - | - | 0.458 |
| HCM Control Delay (s) | - | - | 24.8 |
| HCM Lane LOS | - | - | C |
| HCM 95th %tile Q(veh) | - | - | 2.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 5 | 28 | 7 | 47 | 16 | 2 |
| Future Vol, veh/h | 5 | 28 | 7 | 47 | 16 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 150 | 0 | 50 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 30 | 8 | 51 | 17 | 2 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 85 | 18 | 19 | 0 | - | 0 |
| Stage 1 | 18 | - | - | - | - | - |
| Stage 2 | 67 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 916 | 1061 | 1597 | - | - | - |
| Stage 1 | 1005 | - | - | - | - | - |
| Stage 2 | 956 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 911 | 1061 | 1597 | - | - | - |
| Mov Cap-2 Maneuver | 859 | - | - | - | - | - |
| Stage 1 | 1000 | - | - | - | - | - |
| Stage 2 | 956 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.6 | 0.9 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1597 | - | 859 | 1061 | - | - |
| HCM Lane V/C Ratio | 0.005 | - | 0.006 | 0.029 | - | - |
| HCM Control Delay (s) | 7.3 | - | 9.2 | 8.5 | - | - |
| HCM Lane LOS | A | - | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 4 | 1283 | 16 | 5 | 1252 | 0 | 0 | 0 | 18 | 0 | 0 | 41 |
| Future Vol, veh/h | 4 | 1283 | 16 | 5 | 1252 | 0 | 0 | 0 | 18 | 0 | 0 | 41 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 150 | - | 150 | 60 | - | - | - | - | 0 | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 81 | 81 | 81 | 79 | 79 | 79 | 52 | 52 | 52 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 1584 | 20 | 6 | 1585 | 0 | 0 | 0 | 35 | 0 | 0 | 45 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1585 | 0 | 0 | 1604 | 0 | 0 | - | - | 792 | - | - | 793 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | - | - | 6.94 | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | - | - | 3.32 | - | - | 3.32 |
| Pot Cap-1 Maneuver | 660 | - | - | 404 | - | - | 0 | 0 | 332 | 0 | 0 | *567 |
| Stage 1 | - | - | - | - | - | - | 0 | 0 | - | 0 | 0 | - |
| Stage 2 | - | - | - | - | - | - | 0 | 0 | - | 0 | 0 | - |
| Platoon blocked, % | 1 | - | - | | - | - | | | | | | 1 |
| Mov Cap-1 Maneuver | 660 | - | - | 404 | - | - | - | - | 332 | - | - | *567 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 17.1 | 11.9 |
| HCM LOS | | | C | B |

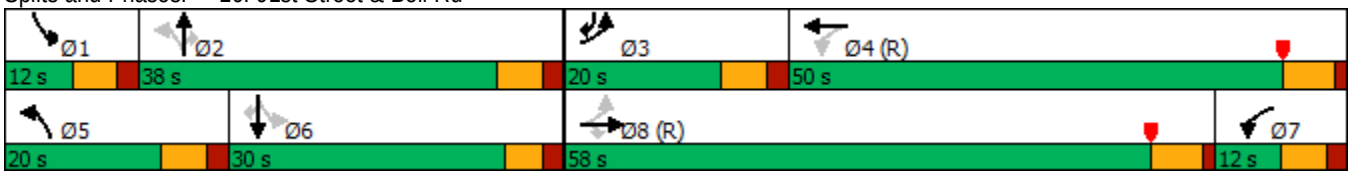
| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 332 | 660 | - | - | 404 | - | - | 567 |
| HCM Lane V/C Ratio | 0.104 | 0.007 | - | - | 0.016 | - | - | 0.079 |
| HCM Control Delay (s) | 17.1 | 10.5 | - | - | 14.1 | - | - | 11.9 |
| HCM Lane LOS | C | B | - | - | B | - | - | B |
| HCM 95th %tile Q(veh) | 0.3 | 0 | - | - | 0 | - | - | 0.3 |

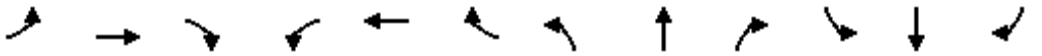
| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

| Phase Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Movement | SBL | NBTL | EBL | WBTL | NBL | SBTL | WBL | EBTL |
| Lead/Lag | Lead | Lag | Lead | Lag | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize | Yes | Yes | Yes | Yes | Yes | Yes | | |
| Recall Mode | None | None | None | C-Max | None | None | None | C-Max |
| Maximum Split (s) | 12 | 38 | 20 | 50 | 20 | 30 | 12 | 58 |
| Maximum Split (%) | 10.0% | 31.7% | 16.7% | 41.7% | 16.7% | 25.0% | 10.0% | 48.3% |
| Minimum Split (s) | 11 | 24 | 11 | 22.5 | 11 | 37.3 | 11 | 38.7 |
| Yellow Time (s) | 4 | 4 | 4 | 4.7 | 4 | 3.3 | 4 | 4.7 |
| All-Red Time (s) | 2 | 2 | 2 | 1.2 | 2 | 2 | 2 | 1 |
| Minimum Initial (s) | 5 | 5 | 5 | 10 | 5 | 7 | 5 | 10 |
| Vehicle Extension (s) | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 2 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Walk Time (s) | | 7 | | | | 8 | | 8 |
| Flash Dont Walk (s) | | 11 | | | | 24 | | 24 |
| Dual Entry | No | Yes | No | Yes | No | Yes | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Start Time (s) | 4.7 | 16.7 | 54.7 | 74.7 | 4.7 | 24.7 | 112.7 | 54.7 |
| End Time (s) | 16.7 | 54.7 | 74.7 | 4.7 | 24.7 | 54.7 | 4.7 | 112.7 |
| Yield/Force Off (s) | 10.7 | 48.7 | 68.7 | 118.8 | 18.7 | 49.4 | 118.7 | 107 |
| Yield/Force Off 170(s) | 10.7 | 37.7 | 68.7 | 118.8 | 18.7 | 25.4 | 118.7 | 83 |
| Local Start Time (s) | 17.7 | 29.7 | 67.7 | 87.7 | 17.7 | 37.7 | 5.7 | 67.7 |
| Local Yield (s) | 23.7 | 61.7 | 81.7 | 11.8 | 31.7 | 62.4 | 11.7 | 0 |
| Local Yield 170(s) | 23.7 | 50.7 | 81.7 | 11.8 | 31.7 | 38.4 | 11.7 | 96 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 110 |
| Offset: 107 (89%), Referenced to phase 4:WBTL and 8:EBTL, Start of Yellow | |

Splits and Phases: 16: 91st Street & Bell Rd





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 77 | 1168 | 51 | 35 | 846 | 2 | 146 | 23 | 58 | 12 | 10 | 249 |
| Future Volume (veh/h) | 77 | 1168 | 51 | 35 | 846 | 2 | 146 | 23 | 58 | 12 | 10 | 249 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 95 | 1442 | 44 | 41 | 995 | 2 | 247 | 39 | 69 | 13 | 11 | 135 |
| Peak Hour Factor | 0.81 | 0.81 | 0.81 | 0.85 | 0.85 | 0.85 | 0.59 | 0.59 | 0.59 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 239 | 1549 | 691 | 343 | 1952 | 4 | 383 | 374 | 317 | 220 | 183 | 233 |
| Arrive On Green | 0.05 | 0.44 | 0.44 | 0.15 | 0.54 | 0.54 | 0.12 | 0.20 | 0.20 | 0.01 | 0.10 | 0.10 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3639 | 7 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 95 | 1442 | 44 | 41 | 486 | 511 | 247 | 39 | 69 | 13 | 11 | 135 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 1869 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 4.0 | 46.2 | 1.2 | 0.0 | 20.9 | 20.9 | 14.0 | 2.0 | 3.0 | 0.8 | 0.6 | 9.5 |
| Cycle Q Clear(g_c), s | 4.0 | 46.2 | 1.2 | 0.0 | 20.9 | 20.9 | 14.0 | 2.0 | 3.0 | 0.8 | 0.6 | 9.5 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 239 | 1549 | 691 | 343 | 953 | 1003 | 383 | 374 | 317 | 220 | 183 | 233 |
| V/C Ratio(X) | 0.40 | 0.93 | 0.06 | 0.12 | 0.51 | 0.51 | 0.65 | 0.10 | 0.22 | 0.06 | 0.06 | 0.58 |
| Avail Cap(c_a), veh/h | 360 | 1549 | 691 | 343 | 953 | 1003 | 383 | 499 | 423 | 283 | 385 | 404 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 25.3 | 32.1 | 7.6 | 42.5 | 17.7 | 17.7 | 41.4 | 39.2 | 18.8 | 47.6 | 49.1 | 47.7 |
| Incr Delay (d2), s/veh | 1.1 | 11.5 | 0.2 | 0.1 | 1.9 | 1.8 | 3.7 | 0.1 | 0.3 | 0.1 | 0.1 | 0.9 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.1 | 28.4 | 1.3 | 1.8 | 13.3 | 13.8 | 11.2 | 1.7 | 3.0 | 0.6 | 0.5 | 6.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 26.3 | 43.6 | 7.7 | 42.6 | 19.7 | 19.6 | 45.1 | 39.4 | 19.2 | 47.7 | 49.2 | 48.6 |
| LnGrp LOS | C | D | A | D | B | B | D | D | B | D | D | D |
| Approach Vol, veh/h | | 1581 | | | 1038 | | | 355 | | | 159 | |
| Approach Delay, s/veh | | 41.6 | | | 20.5 | | | 39.4 | | | 48.6 | |
| Approach LOS | | D | | | C | | | D | | | D | |

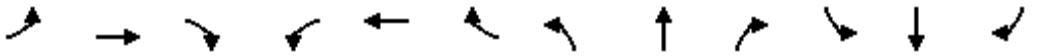
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.8 | 30.0 | 11.9 | 70.4 | 20.0 | 17.7 | 24.3 | 58.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 6.0 | * 6 | 6.0 | * 6 | 6.0 | 5.7 |
| Max Green Setting (Gmax), s | 6.0 | 32.0 | 14.0 | * 44 | 14.0 | * 25 | 6.0 | 52.3 |
| Max Q Clear Time (g_c+I1), s | 2.8 | 5.0 | 6.0 | 22.9 | 16.0 | 11.5 | 2.0 | 48.2 |
| Green Ext Time (p_c), s | 0.0 | 0.4 | 0.1 | 3.6 | 0.0 | 0.2 | 0.0 | 2.5 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 34.7 |
| HCM 6th LOS | C |

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



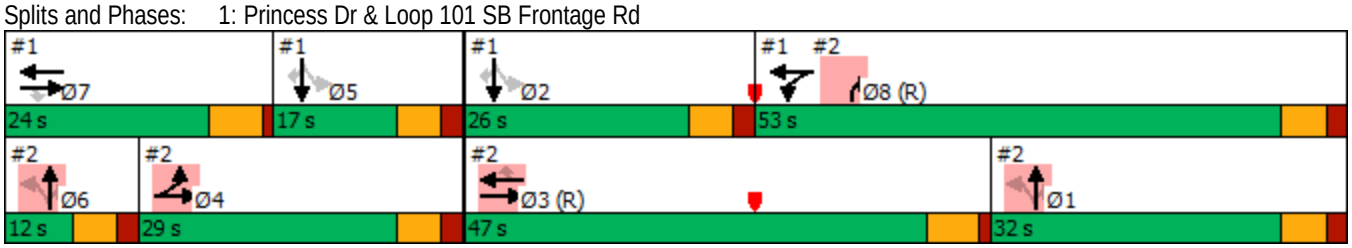
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 416 | 379 | 1179 | 326 | 0 | 0 | 0 | 0 | 433 | 437 | 69 |
| Future Volume (vph) | 0 | 416 | 379 | 1179 | 326 | 0 | 0 | 0 | 0 | 433 | 437 | 69 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 140 | | 245 | 240 | | 0 | 0 | | 0 | 355 | | 355 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 2 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 0.88 | 0.94 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.998 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.988 | |
| Satd. Flow (prot) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3159 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.988 | |
| Satd. Flow (perm) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3159 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 188 | | | | | | | | 1 | 185 |
| Link Speed (mph) | | 35 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 1345 | | | 409 | | | 1261 | | | 718 | |
| Travel Time (s) | | 26.2 | | | 6.2 | | | 28.7 | | | 10.9 | |
| Peak Hour Factor | 0.25 | 0.85 | 0.85 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 489 | 446 | 1310 | 362 | 0 | 0 | 0 | 0 | 481 | 486 | 77 |
| Shared Lane Traffic (%) | | | | | | | | | | 34% | | 10% |
| Lane Group Flow (vph) | 0 | 489 | 446 | 1310 | 362 | 0 | 0 | 0 | 0 | 317 | 658 | 69 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Right | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 36 | | | 36 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 2 5 | |
| Permitted Phases | | | 7 | | | | | | | 2 5 | | 2 5 |

| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | | | | | | |
| Future Volume (vph) | | | | | | |
| Ideal Flow (vphpl) | | | | | | |
| Storage Length (ft) | | | | | | |
| Storage Lanes | | | | | | |
| Taper Length (ft) | | | | | | |
| Lane Util. Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | | | | | | |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | | | | | | |
| Right Turn on Red | | | | | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | | | | | |
| Link Distance (ft) | | | | | | |
| Travel Time (s) | | | | | | |
| Peak Hour Factor | | | | | | |
| Adj. Flow (vph) | | | | | | |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | | | | | | |
| Enter Blocked Intersection | | | | | | |
| Lane Alignment | | | | | | |
| Median Width(ft) | | | | | | |
| Link Offset(ft) | | | | | | |
| Crosswalk Width(ft) | | | | | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | | | | | | |
| Turning Speed (mph) | | | | | | |
| Number of Detectors | | | | | | |
| Detector Template | | | | | | |
| Leading Detector (ft) | | | | | | |
| Trailing Detector (ft) | | | | | | |
| Detector 1 Position(ft) | | | | | | |
| Detector 1 Size(ft) | | | | | | |
| Detector 1 Type | | | | | | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | | | | | | |
| Detector 1 Queue (s) | | | | | | |
| Detector 1 Delay (s) | | | | | | |
| Detector 2 Position(ft) | | | | | | |
| Detector 2 Size(ft) | | | | | | |
| Detector 2 Type | | | | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | | | | |
| Turn Type | | | | | | |
| Protected Phases | 1 | 2 | 3 | 4 | 5 | 6 |
| Permitted Phases | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 7 | 7 | 8 | 7 8 | | | | | 2 5 | 2 5 | 2 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 7.0 | 7.0 | 5.0 | | | | | | | | |
| Minimum Split (s) | | 26.7 | 26.7 | 11.0 | | | | | | | | |
| Total Split (s) | | 24.0 | 24.0 | 53.0 | | | | | | | | |
| Total Split (%) | | 20.0% | 20.0% | 44.2% | | | | | | | | |
| Maximum Green (s) | | 18.3 | 18.3 | 47.0 | | | | | | | | |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | | | | | | | | |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | | | | | | | | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | | | | | | | | |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | | | | | | | | |
| Lead/Lag | | Lead | Lead | Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | | | | | | | | |
| Recall Mode | | None | None | C-Min | | | | | | | | |
| Walk Time (s) | | 4.0 | 4.0 | | | | | | | | | |
| Flash Dont Walk (s) | | 17.0 | 17.0 | | | | | | | | | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | | | | | | | | |
| Act Effct Green (s) | | 17.0 | 17.0 | 51.0 | 74.0 | | | | | 34.3 | 34.3 | 34.3 |
| Actuated g/C Ratio | | 0.14 | 0.14 | 0.42 | 0.62 | | | | | 0.29 | 0.29 | 0.29 |
| v/c Ratio | | 0.68 | 0.80 | 0.62 | 0.17 | | | | | 0.69 | 0.73 | 0.13 |
| Control Delay | | 53.8 | 40.1 | 15.7 | 7.3 | | | | | 46.3 | 43.6 | 0.5 |
| Queue Delay | | 0.0 | 0.0 | 2.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 53.8 | 40.1 | 17.7 | 7.3 | | | | | 46.3 | 43.6 | 0.5 |
| LOS | | D | D | B | A | | | | | D | D | A |
| Approach Delay | | 47.3 | | | 15.5 | | | | | | 41.6 | |
| Approach LOS | | D | | | B | | | | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 23 (19%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.37 | | | |
| Intersection Signal Delay: 31.1 | | Intersection LOS: C | |
| Intersection Capacity Utilization 98.7% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Princess Dr & Loop 101 SB Frontage Rd



| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Detector Phase | | | | | | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 10.0 | 5.0 | 7.0 | 1.0 |
| Minimum Split (s) | 13.0 | 7.0 | 26.7 | 11.0 | 50.0 | 7.0 |
| Total Split (s) | 32.0 | 26.0 | 47.0 | 29.0 | 17.0 | 12.0 |
| Total Split (%) | 27% | 22% | 39% | 24% | 14% | 10% |
| Maximum Green (s) | 26.0 | 20.0 | 41.3 | 23.0 | 11.0 | 6.0 |
| Yellow Time (s) | 4.0 | 4.0 | 4.7 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | | | | | |
| Total Lost Time (s) | | | | | | |
| Lead/Lag | Lag | Lead | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 5.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | C-Min | None | None | None |
| Walk Time (s) | | | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | | 17.0 | | 40.0 | |
| Pedestrian Calls (#/hr) | | | 0 | | 0 | |
| Act Effct Green (s) | | | | | | |
| Actuated g/C Ratio | | | | | | |
| v/c Ratio | | | | | | |
| Control Delay | | | | | | |
| Queue Delay | | | | | | |
| Total Delay | | | | | | |
| LOS | | | | | | |
| Approach Delay | | | | | | |
| Approach LOS | | | | | | |

| Intersection Summary |
|---|

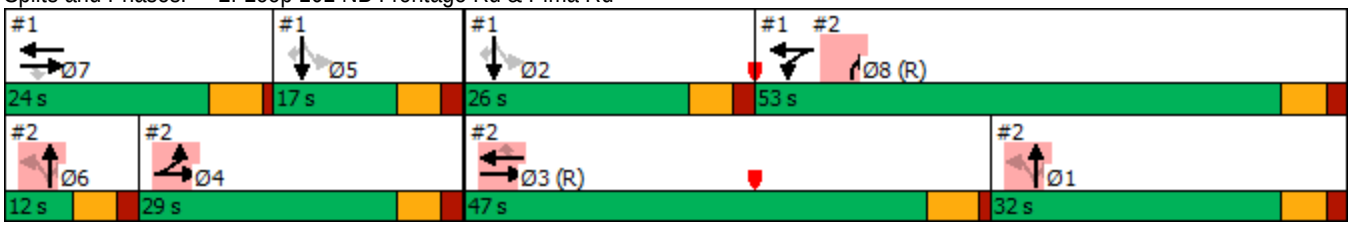
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 243 | 614 | 0 | 0 | 1290 | 478 | 217 | 831 | 1163 | 0 | 0 | 0 |
| Future Volume (vph) | 243 | 614 | 0 | 0 | 1290 | 478 | 217 | 831 | 1163 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 265 | | 0 | 350 | | 285 | 275 | | 275 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.81 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.999 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3387 | 1583 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.999 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3387 | 1583 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 188 | | | 239 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 409 | | | 1059 | | | 1024 | | | 527 | |
| Travel Time (s) | | 6.2 | | | 16.0 | | | 15.5 | | | 12.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 270 | 682 | 0 | 0 | 1433 | 531 | 241 | 923 | 1292 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 10% | | | | | |
| Lane Group Flow (vph) | 270 | 682 | 0 | 0 | 1433 | 531 | 217 | 947 | 1292 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | L NA | Right | Left | Left | Right | Left | Left | R NA | Left | Left | Right |
| Median Width(ft) | | 24 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | custom | | | |
| Protected Phases | 4 | 3 4! | | | 3 | | | 1 6 | 8! | | | |
| Permitted Phases | | | | | | 3 | 1 6 | | 1 6 | | | |

| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 |
|---|---|---|---|---|---|
| Lane Configurations | | | | | |
| Traffic Volume (vph) | | | | | |
| Future Volume (vph) | | | | | |
| Ideal Flow (vphpl) | | | | | |
| Storage Length (ft) | | | | | |
| Storage Lanes | | | | | |
| Taper Length (ft) | | | | | |
| Lane Util. Factor | | | | | |
| Frt | | | | | |
| Flt Protected | | | | | |
| Satd. Flow (prot) | | | | | |
| Flt Permitted | | | | | |
| Satd. Flow (perm) | | | | | |
| Right Turn on Red | | | | | |
| Satd. Flow (RTOR) | | | | | |
| Link Speed (mph) | | | | | |
| Link Distance (ft) | | | | | |
| Travel Time (s) | | | | | |
| Peak Hour Factor | | | | | |
| Adj. Flow (vph) | | | | | |
| Shared Lane Traffic (%) | | | | | |
| Lane Group Flow (vph) | | | | | |
| Enter Blocked Intersection | | | | | |
| Lane Alignment | | | | | |
| Median Width(ft) | | | | | |
| Link Offset(ft) | | | | | |
| Crosswalk Width(ft) | | | | | |
| Two way Left Turn Lane | | | | | |
| Headway Factor | | | | | |
| Turning Speed (mph) | | | | | |
| Number of Detectors | | | | | |
| Detector Template | | | | | |
| Leading Detector (ft) | | | | | |
| Trailing Detector (ft) | | | | | |
| Detector 1 Position(ft) | | | | | |
| Detector 1 Size(ft) | | | | | |
| Detector 1 Type | | | | | |
| Detector 1 Channel | | | | | |
| Detector 1 Extend (s) | | | | | |
| Detector 1 Queue (s) | | | | | |
| Detector 1 Delay (s) | | | | | |
| Detector 2 Position(ft) | | | | | |
| Detector 2 Size(ft) | | | | | |
| Detector 2 Type | | | | | |
| Detector 2 Channel | | | | | |
| Detector 2 Extend (s) | | | | | |
| Turn Type | | | | | |
| Protected Phases | 1 | 2 | 5 | 6 | 7 |
| Permitted Phases | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 4 | 3 4 | | | 3 | 3 | 1 6 | 1 6 | 8 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 10.0 | 10.0 | | | 5.0 | | | |
| Minimum Split (s) | 11.0 | | | | 26.7 | 26.7 | | | 11.0 | | | |
| Total Split (s) | 29.0 | | | | 47.0 | 47.0 | | | 53.0 | | | |
| Total Split (%) | 24.2% | | | | 39.2% | 39.2% | | | 44.2% | | | |
| Maximum Green (s) | 23.0 | | | | 41.3 | 41.3 | | | 47.0 | | | |
| Yellow Time (s) | 4.0 | | | | 4.7 | 4.7 | | | 4.0 | | | |
| All-Red Time (s) | 2.0 | | | | 1.0 | 1.0 | | | 2.0 | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | 0.0 | | | 0.0 | | | |
| Total Lost Time (s) | 6.0 | | | | 5.7 | 5.7 | | | 6.0 | | | |
| Lead/Lag | Lag | | | | Lead | Lead | | | Lag | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 5.0 | 5.0 | | | 2.0 | | | |
| Recall Mode | None | | | | C-Min | C-Min | | | C-Min | | | |
| Walk Time (s) | | | | | 4.0 | 4.0 | | | | | | |
| Flash Dont Walk (s) | | | | | 17.0 | 17.0 | | | | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | 0 | | | | | | |
| Act Effct Green (s) | 23.0 | 70.3 | | | 41.3 | 41.3 | 38.0 | 38.0 | 63.0 | | | |
| Actuated g/C Ratio | 0.19 | 0.59 | | | 0.34 | 0.34 | 0.32 | 0.32 | 0.52 | | | |
| v/c Ratio | 0.80 | 0.33 | | | 0.55 | 0.79 | 0.43 | 0.88 | 1.37 | | | |
| Control Delay | 54.0 | 3.2 | | | 28.5 | 26.3 | 35.6 | 49.9 | 195.6 | | | |
| Queue Delay | 0.0 | 0.5 | | | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | | | |
| Total Delay | 54.0 | 3.7 | | | 28.5 | 26.3 | 35.6 | 50.0 | 195.6 | | | |
| LOS | D | A | | | C | C | D | D | F | | | |
| Approach Delay | | 18.0 | | | 27.9 | | | 125.4 | | | | |
| Approach LOS | | B | | | C | | | F | | | | |

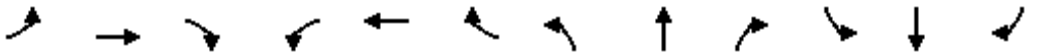
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 23 (19%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.37 | | | |
| Intersection Signal Delay: 70.7 | | Intersection LOS: E | |
| Intersection Capacity Utilization 98.7% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |
| ! Phase conflict between lane groups. | | | |

Splits and Phases: 2: Loop 101 NB Frontage Rd & Pima Rd



| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 |
|---|---|---|---|---|---|
| Detector Phase | | | | | |
| Switch Phase | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 7.0 | 1.0 | 7.0 |
| Minimum Split (s) | 13.0 | 7.0 | 50.0 | 7.0 | 26.7 |
| Total Split (s) | 32.0 | 26.0 | 17.0 | 12.0 | 24.0 |
| Total Split (%) | 27% | 22% | 14% | 10% | 20% |
| Maximum Green (s) | 26.0 | 20.0 | 11.0 | 6.0 | 18.3 |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.7 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 1.0 |
| Lost Time Adjust (s) | | | | | |
| Total Lost Time (s) | | | | | |
| Lead/Lag | Lag | Lead | Lag | Lead | Lead |
| Lead-Lag Optimize? | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | None | None | None |
| Walk Time (s) | | | 4.0 | | 4.0 |
| Flash Dont Walk (s) | | | 40.0 | | 17.0 |
| Pedestrian Calls (#/hr) | | | 0 | | 0 |
| Act Effct Green (s) | | | | | |
| Actuated g/C Ratio | | | | | |
| v/c Ratio | | | | | |
| Control Delay | | | | | |
| Queue Delay | | | | | |
| Total Delay | | | | | |
| LOS | | | | | |
| Approach Delay | | | | | |
| Approach LOS | | | | | |

| Intersection Summary |
|---|



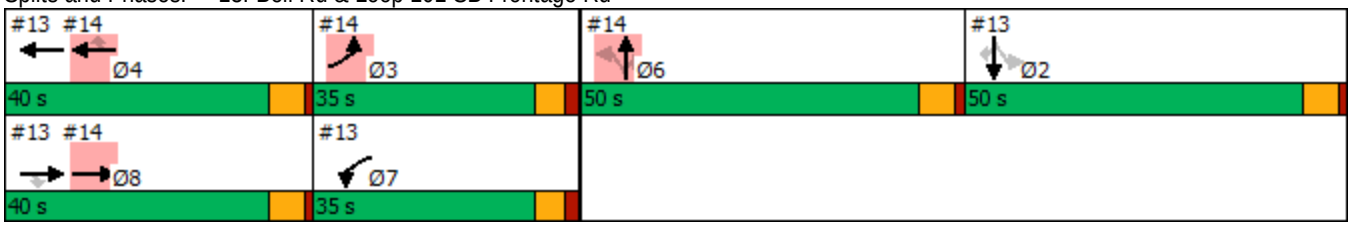
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 380 | 226 | 864 | 388 | 0 | 0 | 0 | 0 | 450 | 169 | 13 |
| Future Volume (vph) | 0 | 380 | 226 | 864 | 388 | 0 | 0 | 0 | 0 | 450 | 169 | 13 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 240 | | 315 | 220 | | 0 | 0 | | 0 | 385 | | 385 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.999 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.973 | |
| Satd. Flow (prot) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3114 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.973 | |
| Satd. Flow (perm) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3114 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 251 | | | | | | | | | 92 |
| Link Speed (mph) | | 45 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 824 | | | 389 | | | 598 | | | 1243 | |
| Travel Time (s) | | 12.5 | | | 5.9 | | | 13.6 | | | 18.8 | |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.90 | 0.85 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.85 | 0.80 |
| Adj. Flow (vph) | 0 | 422 | 251 | 960 | 456 | 0 | 0 | 0 | 0 | 500 | 199 | 16 |
| Shared Lane Traffic (%) | | | | | | | | | | 50% | | 10% |
| Lane Group Flow (vph) | 0 | 422 | 251 | 960 | 456 | 0 | 0 | 0 | 0 | 250 | 451 | 14 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | | | | | 2 | |
| Permitted Phases | | | 8 | | | | | | | 2 | | 2 |

| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 3 | 6 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 8 | 8 | 7 | 4 | | | | | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 10.0 | 10.0 | 5.0 | 10.0 | | | | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | | 35.7 | 35.7 | 11.0 | 39.7 | | | | | 50.9 | 50.9 | 50.9 |
| Total Split (s) | | 40.0 | 40.0 | 35.0 | 40.0 | | | | | 50.0 | 50.0 | 50.0 |
| Total Split (%) | | 22.9% | 22.9% | 20.0% | 22.9% | | | | | 28.6% | 28.6% | 28.6% |
| Maximum Green (s) | | 34.3 | 34.3 | 29.0 | 34.3 | | | | | 44.1 | 44.1 | 44.1 |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | 4.7 | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | 1.0 | | | | | 1.2 | 1.2 | 1.2 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | 5.7 | | | | | 5.9 | 5.9 | 5.9 |
| Lead/Lag | | Lead | Lead | Lag | Lead | | | | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | 2.0 | 2.0 | 2.0 |
| Recall Mode | | Min | Min | None | None | | | | | None | None | None |
| Walk Time (s) | | 7.0 | 7.0 | | 8.0 | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 23.0 | 23.0 | | 26.0 | | | | | 38.0 | 38.0 | 38.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 34.5 | 34.5 | 29.2 | 31.7 | | | | | 29.6 | 29.6 | 29.6 |
| Actuated g/C Ratio | | 0.22 | 0.22 | 0.19 | 0.20 | | | | | 0.19 | 0.19 | 0.19 |
| v/c Ratio | | 0.38 | 0.46 | 1.51 | 0.64 | | | | | 0.83 | 0.77 | 0.04 |
| Control Delay | | 55.2 | 9.0 | 276.3 | 28.5 | | | | | 84.3 | 70.3 | 0.2 |
| Queue Delay | | 0.6 | 0.0 | 1.0 | 0.5 | | | | | 0.9 | 0.3 | 0.0 |
| Total Delay | | 55.8 | 9.0 | 277.3 | 29.0 | | | | | 85.2 | 70.6 | 0.2 |
| LOS | | E | A | F | C | | | | | F | E | A |
| Approach Delay | | 38.3 | | | 197.4 | | | | | | 74.3 | |
| Approach LOS | | D | | | F | | | | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 157.7 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.51 | | | |
| Intersection Signal Delay: 127.8 | | Intersection LOS: F | |
| Intersection Capacity Utilization 68.4% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 13: Bell Rd & Loop 101 SB Frontage Rd



| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 5.0 | 7.0 |
| Minimum Split (s) | 11.0 | 48.0 |
| Total Split (s) | 35.0 | 50.0 |
| Total Split (%) | 20% | 29% |
| Maximum Green (s) | 29.0 | 44.0 |
| Yellow Time (s) | 4.0 | 4.7 |
| All-Red Time (s) | 2.0 | 1.3 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lead |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | Min | None |
| Walk Time (s) | | 7.0 |
| Flash Dont Walk (s) | | 35.0 |
| Pedestrian Calls (#/hr) | | 0 |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|

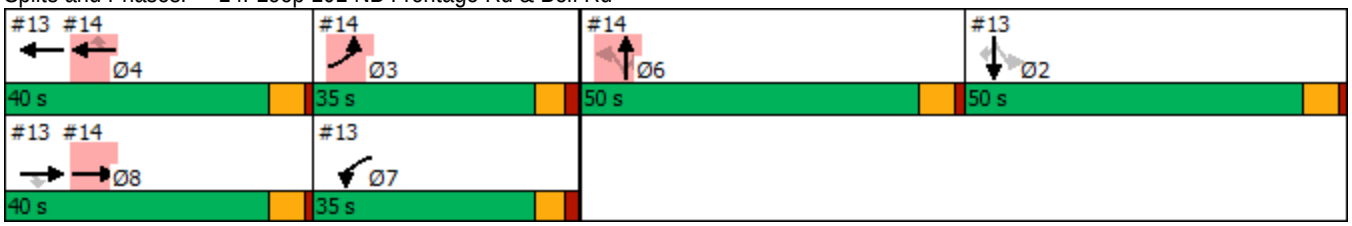
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 47 | 783 | 0 | 0 | 834 | 506 | 418 | 350 | 508 | 0 | 0 | 0 |
| Future Volume (vph) | 47 | 783 | 0 | 0 | 834 | 506 | 418 | 350 | 508 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 220 | | 0 | 235 | | 175 | 310 | | 310 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.86 | 1.00 | 0.91 | 0.86 | 0.91 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | 0.951 | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.993 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3026 | 1441 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.993 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3026 | 1441 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 404 | | 36 | 327 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 389 | | | 797 | | | 655 | | | 974 | |
| Travel Time (s) | | 5.9 | | | 12.1 | | | 9.9 | | | 22.1 | |
| Peak Hour Factor | 0.80 | 0.90 | 0.25 | 0.25 | 0.85 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 59 | 870 | 0 | 0 | 981 | 562 | 464 | 389 | 564 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 21% | | 42% | | | |
| Lane Group Flow (vph) | 59 | 870 | 0 | 0 | 981 | 562 | 367 | 723 | 327 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | Perm | | | |
| Protected Phases | 3 | 8 | | | 4 | | | 6 | | | | |
| Permitted Phases | | | | | | 4 | 6 | | 6 | | | |

| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 2 | 7 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 3 | 8 | | | 4 | 4 | 6 | 6 | 6 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | | | 10.0 | 10.0 | 7.0 | 7.0 | 7.0 | | | |
| Minimum Split (s) | 11.0 | 35.7 | | | 39.7 | 39.7 | 48.0 | 48.0 | 48.0 | | | |
| Total Split (s) | 35.0 | 40.0 | | | 40.0 | 40.0 | 50.0 | 50.0 | 50.0 | | | |
| Total Split (%) | 20.0% | 22.9% | | | 22.9% | 22.9% | 28.6% | 28.6% | 28.6% | | | |
| Maximum Green (s) | 29.0 | 34.3 | | | 34.3 | 34.3 | 44.0 | 44.0 | 44.0 | | | |
| Yellow Time (s) | 4.0 | 4.7 | | | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 2.0 | 1.0 | | | 1.0 | 1.0 | 1.3 | 1.3 | 1.3 | | | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 6.0 | 5.7 | | | 5.7 | 5.7 | 6.0 | 6.0 | 6.0 | | | |
| Lead/Lag | Lag | Lead | | | Lead | Lead | Lead | Lead | Lead | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Recall Mode | Min | Min | | | None | None | None | None | None | | | |
| Walk Time (s) | | 7.0 | | | 8.0 | 8.0 | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | 23.0 | | | 26.0 | 26.0 | 35.0 | 35.0 | 35.0 | | | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 31.9 | 34.5 | | | 31.7 | 31.7 | 40.7 | 40.7 | 40.7 | | | |
| Actuated g/C Ratio | 0.20 | 0.22 | | | 0.20 | 0.20 | 0.26 | 0.26 | 0.26 | | | |
| v/c Ratio | 0.16 | 1.12 | | | 0.76 | 0.88 | 0.88 | 0.90 | 0.53 | | | |
| Control Delay | 48.6 | 96.3 | | | 64.3 | 32.8 | 79.7 | 68.5 | 8.0 | | | |
| Queue Delay | 0.0 | 0.0 | | | 50.1 | 0.0 | 0.0 | 0.1 | 0.0 | | | |
| Total Delay | 48.6 | 96.3 | | | 114.4 | 32.8 | 79.7 | 68.6 | 8.0 | | | |
| LOS | D | F | | | F | C | E | E | A | | | |
| Approach Delay | | 93.3 | | | 84.7 | | | 57.5 | | | | |
| Approach LOS | | F | | | F | | | E | | | | |

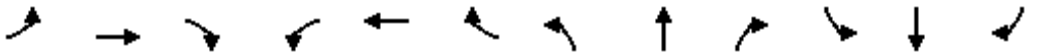
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 157.7 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.51 | | | |
| Intersection Signal Delay: 76.8 | | Intersection LOS: E | |
| Intersection Capacity Utilization 68.4% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Loop 101 NB Frontage Rd & Bell Rd



| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 7.0 | 5.0 |
| Minimum Split (s) | 50.9 | 11.0 |
| Total Split (s) | 50.0 | 35.0 |
| Total Split (%) | 29% | 20% |
| Maximum Green (s) | 44.1 | 29.0 |
| Yellow Time (s) | 4.7 | 4.0 |
| All-Red Time (s) | 1.2 | 2.0 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lag |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | None | None |
| Walk Time (s) | 7.0 | |
| Flash Dont Walk (s) | 38.0 | |
| Pedestrian Calls (#/hr) | 0 | |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1650 | 873 | 363 | 1220 | 0 | 0 | 0 | 0 | 834 | 883 | 374 |
| Future Volume (vph) | 0 | 1650 | 873 | 363 | 1220 | 0 | 0 | 0 | 0 | 834 | 883 | 374 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 185 | | 0 | 0 | | 0 | 0 | | 0 | 250 | | 250 |
| Storage Lanes | 2 | | 1 | 2 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.81 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 | 0.95 | 1.00 |
| Ped Bike Factor | | | 0.99 | 1.00 | | | | | | | | 0.99 |
| Frt | | | 0.850 | | | | | | | | | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 7192 | 1482 | 3019 | 4940 | 0 | 0 | 0 | 0 | 3183 | 3610 | 1538 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 7192 | 1463 | 3018 | 4940 | 0 | 0 | 0 | 0 | 3183 | 3610 | 1517 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 416 | | | | | | | | | 172 |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 45 | |
| Link Distance (ft) | | 675 | | | 322 | | | 835 | | | 832 | |
| Travel Time (s) | | 10.2 | | | 4.9 | | | 12.7 | | | 12.6 | |
| Confl. Peds. (#/hr) | 1 | | 1 | 1 | | | | | | | | 1 |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.88 | 0.88 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 0% | 7% | 9% | 16% | 5% | 0% | 0% | 0% | 0% | 10% | 0% | 5% |
| Adj. Flow (vph) | 0 | 1833 | 970 | 413 | 1386 | 0 | 0 | 0 | 0 | 927 | 981 | 416 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 1833 | 970 | 413 | 1386 | 0 | 0 | 0 | 0 | 927 | 981 | 416 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |

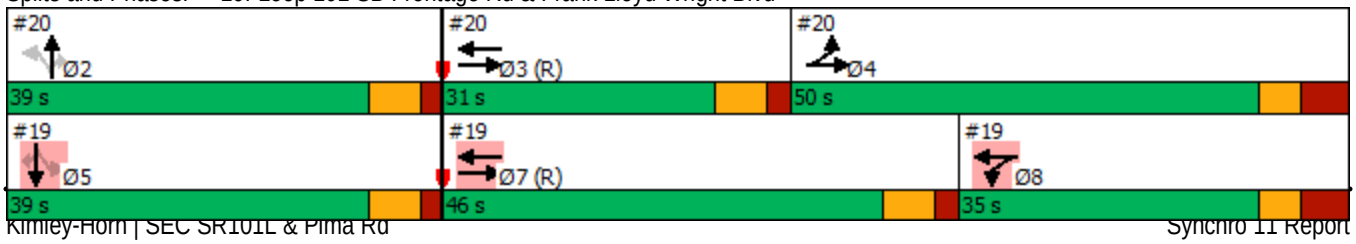
| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | | NA | Free | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 5 | |
| Permitted Phases | | | Free | | | | | | | 5 | | 5 |
| Detector Phase | | 7 | | 8 | 7 8 | | | | | 5 | 5 | 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 5.0 | | 6.0 | | | | | | 6.0 | 6.0 | 6.0 |
| Minimum Split (s) | | 24.8 | | 31.9 | | | | | | 29.7 | 29.7 | 29.7 |
| Total Split (s) | | 46.0 | | 35.0 | | | | | | 39.0 | 39.0 | 39.0 |
| Total Split (%) | | 38.3% | | 29.2% | | | | | | 32.5% | 32.5% | 32.5% |
| Maximum Green (s) | | 39.2 | | 26.7 | | | | | | 32.3 | 32.3 | 32.3 |
| Yellow Time (s) | | 4.7 | | 3.9 | | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 2.1 | | 4.4 | | | | | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.8 | | 8.3 | | | | | | 6.7 | 6.7 | 6.7 |
| Lead/Lag | | Lead | | Lag | | | | | | | | |
| Lead-Lag Optimize? | | Yes | | Yes | | | | | | | | |
| Vehicle Extension (s) | | 0.2 | | 0.2 | | | | | | 0.2 | 0.2 | 0.2 |
| Recall Mode | | C-Max | | None | | | | | | None | None | None |
| Walk Time (s) | | 7.0 | | | | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 11.0 | | | | | | | | 16.0 | 16.0 | 16.0 |
| Pedestrian Calls (#/hr) | | 0 | | | | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 39.2 | 120.0 | 19.9 | 67.4 | | | | | 39.1 | 39.1 | 39.1 |
| Actuated g/C Ratio | | 0.33 | 1.00 | 0.17 | 0.56 | | | | | 0.33 | 0.33 | 0.33 |
| v/c Ratio | | 0.78 | 0.66 | 0.83 | 0.50 | | | | | 0.89 | 0.83 | 0.68 |
| Control Delay | | 39.3 | 2.4 | 70.3 | 22.7 | | | | | 51.2 | 45.5 | 27.5 |
| Queue Delay | | 14.4 | 0.0 | 0.3 | 11.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 53.7 | 2.4 | 70.6 | 33.8 | | | | | 51.2 | 45.5 | 27.5 |
| LOS | | D | A | E | C | | | | | D | D | C |
| Approach Delay | | 36.0 | | | 42.2 | | | | | | 44.6 | |
| Approach LOS | | D | | | D | | | | | | D | |

**Intersection Summary**

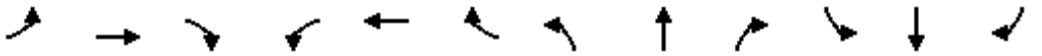
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 40.5 Intersection LOS: D
Intersection Capacity Utilization 89.3% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 19: Loop 101 SB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 2 | 3 | 4 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.7 | 24.8 | 13.3 |
| Total Split (s) | 39.0 | 31.0 | 50.0 |
| Total Split (%) | 33% | 26% | 42% |
| Maximum Green (s) | 32.3 | 24.2 | 41.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | Yes | Yes |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 662 | 1821 | 0 | 0 | 811 | 986 | 772 | 663 | 151 | 0 | 0 | 0 |
| Future Volume (vph) | 662 | 1821 | 0 | 0 | 811 | 986 | 772 | 663 | 151 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 245 | | 150 | 250 | | 250 | 0 | | 0 |
| Storage Lanes | 2 | | 0 | 2 | | 2 | 2 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.81 | 0.88 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (prot) | 3183 | 4893 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (perm) | 3183 | 4893 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 568 | | | 172 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 45 | |
| Link Distance (ft) | | 322 | | | 1160 | | | 836 | | | 801 | |
| Travel Time (s) | | 4.9 | | | 17.6 | | | 12.7 | | | 12.1 | |
| Confl. Peds. (#/hr) | | | 1 | | | | | | | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.88 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Heavy Vehicles (%) | 10% | 6% | 0% | 0% | 6% | 14% | 2% | 0% | 2% | 0% | 0% | 0% |
| Adj. Flow (vph) | 736 | 2023 | 0 | 0 | 922 | 1096 | 858 | 737 | 168 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 736 | 2023 | 0 | 0 | 922 | 1096 | 858 | 737 | 168 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |

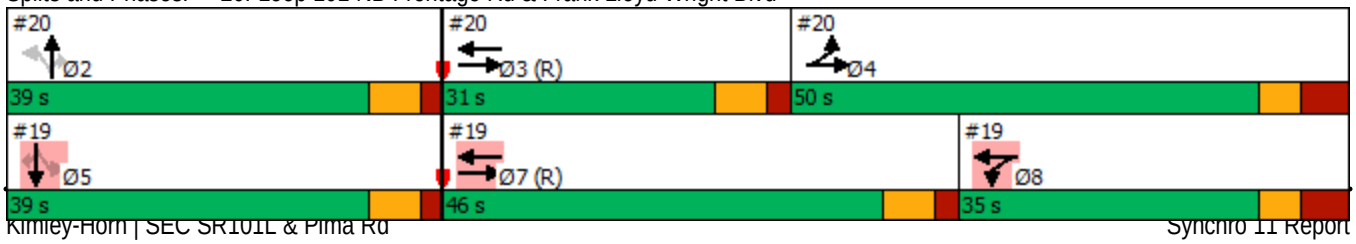
| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Prot | NA | | | NA | Free | Perm | NA | Perm | | | |
| Protected Phases | 4 | 3 4 | | | 3 | | | 2 | | | | |
| Permitted Phases | | | | | | Free | 2 | | 2 | | | |
| Detector Phase | 4 | 3 4 | | | 3 | | 2 | 2 | 2 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 5.0 | | 5.0 | 5.0 | 5.0 | | | |
| Minimum Split (s) | 13.3 | | | | 24.8 | | 24.7 | 24.7 | 24.7 | | | |
| Total Split (s) | 50.0 | | | | 31.0 | | 39.0 | 39.0 | 39.0 | | | |
| Total Split (%) | 41.7% | | | | 25.8% | | 32.5% | 32.5% | 32.5% | | | |
| Maximum Green (s) | 41.7 | | | | 24.2 | | 32.3 | 32.3 | 32.3 | | | |
| Yellow Time (s) | 3.9 | | | | 4.7 | | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 4.4 | | | | 2.1 | | 2.0 | 2.0 | 2.0 | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 8.3 | | | | 6.8 | | 6.7 | 6.7 | 6.7 | | | |
| Lead/Lag | Lag | | | | Lead | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 0.2 | | | | 0.2 | | 0.2 | 0.2 | 0.2 | | | |
| Recall Mode | None | | | | C-Max | | None | None | None | | | |
| Walk Time (s) | | | | | 7.0 | | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | | | | 11.0 | | 11.0 | 11.0 | 11.0 | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 34.9 | 67.4 | | | 24.2 | 120.0 | 39.1 | 39.1 | 39.1 | | | |
| Actuated g/C Ratio | 0.29 | 0.56 | | | 0.20 | 1.00 | 0.33 | 0.33 | 0.33 | | | |
| v/c Ratio | 0.80 | 0.74 | | | 0.63 | 0.44 | 0.77 | 0.44 | 0.27 | | | |
| Control Delay | 43.3 | 20.2 | | | 46.0 | 0.6 | 42.6 | 33.5 | 5.6 | | | |
| Queue Delay | 51.6 | 14.8 | | | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 94.9 | 35.0 | | | 50.5 | 0.6 | 42.6 | 33.5 | 5.6 | | | |
| LOS | F | D | | | D | A | D | C | A | | | |
| Approach Delay | | 51.0 | | | 23.4 | | | 35.3 | | | | |
| Approach LOS | | D | | | C | | | D | | | | |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 38.2 Intersection LOS: D
Intersection Capacity Utilization 89.3% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 20: Loop 101 NB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 5 | 7 | 8 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 6.0 | 5.0 | 6.0 |
| Minimum Split (s) | 29.7 | 24.8 | 31.9 |
| Total Split (s) | 39.0 | 46.0 | 35.0 |
| Total Split (%) | 33% | 38% | 29% |
| Maximum Green (s) | 32.3 | 39.2 | 26.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | Yes | Yes |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 16.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|

# 2025 Total AM
# Traffic Capacity Analysis

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | ↑↑↑ | ↱ | | ↑↑↑ | | ↱ |
| Traffic Vol, veh/h | 1903 | 39 | 0 | 1775 | 0 | 1 |
| Future Vol, veh/h | 1903 | 39 | 0 | 1775 | 0 | 1 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2068 | 42 | 0 | 1929 | 0 | 1 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | - | - | - | 1034 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.92 |
| Pot Cap-1 Maneuver | - | - | 0 | - | 0 | 197 |
| Stage 1 | - | - | 0 | - | 0 | - |
| Stage 2 | - | - | 0 | - | 0 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 197 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 23.4 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBT |
|---|---|---|---|---|
| Capacity (veh/h) | 197 | - | - | - |
| HCM Lane V/C Ratio | 0.006 | - | - | - |
| HCM Control Delay (s) | 23.4 | - | - | - |
| HCM Lane LOS | C | - | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - |

| Phase Number | 2 | 4 | 5 | 6 |
|---|---|---|---|---|
| Movement | SBTL | WBL | SBL | NBT |
| Lead/Lag | | | Lead | Lag |
| Lead-Lag Optimize | | | Yes | Yes |
| Recall Mode | C-Max | Max | None | C-Max |
| Maximum Split (s) | 90 | 30 | 12 | 78 |
| Maximum Split (%) | 75.0% | 25.0% | 10.0% | 65.0% |
| Minimum Split (s) | 22.5 | 22.5 | 9.5 | 22.5 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1 | 1 | 1 | 1 |
| Minimum Initial (s) | 5 | 5 | 5 | 5 |
| Vehicle Extension (s) | 3 | 3 | 3 | 3 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 |
| Walk Time (s) | 7 | 7 | | 7 |
| Flash Dont Walk (s) | 11 | 11 | | 11 |
| Dual Entry | Yes | Yes | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes |
| Start Time (s) | 108 | 78 | 108 | 0 |
| End Time (s) | 78 | 108 | 0 | 78 |
| Yield/Force Off (s) | 73.5 | 103.5 | 115.5 | 73.5 |
| Yield/Force Off 170(s) | 62.5 | 92.5 | 115.5 | 62.5 |
| Local Start Time (s) | 108 | 78 | 108 | 0 |
| Local Yield (s) | 73.5 | 103.5 | 115.5 | 73.5 |
| Local Yield 170(s) | 62.5 | 92.5 | 115.5 | 62.5 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 60 |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of Green | |

Splits and Phases: 4: Pima Rd & Trailside View

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 67 | 14 | 1745 | 160 | 8 | 1636 |
| Future Volume (veh/h) | 67 | 14 | 1745 | 160 | 8 | 1636 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 89 | 19 | 1897 | 174 | 9 | 1778 |
| Peak Hour Factor | 0.75 | 0.75 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 379 | 337 | 3391 | 1053 | 173 | 3638 |
| Arrive On Green | 0.21 | 0.21 | 0.66 | 0.66 | 0.01 | 0.71 |
| Sat Flow, veh/h | 1781 | 1585 | 5274 | 1585 | 1781 | 5274 |
| Grp Volume(v), veh/h | 89 | 19 | 1897 | 174 | 9 | 1778 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1585 | 1702 | 1585 | 1781 | 1702 |
| Q Serve(g_s), s | 5.0 | 1.1 | 23.8 | 5.0 | 0.2 | 18.4 |
| Cycle Q Clear(g_c), s | 5.0 | 1.1 | 23.8 | 5.0 | 0.2 | 18.4 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 379 | 337 | 3391 | 1053 | 173 | 3638 |
| V/C Ratio(X) | 0.24 | 0.06 | 0.56 | 0.17 | 0.05 | 0.49 |
| Avail Cap(c_a), veh/h | 379 | 337 | 3391 | 1053 | 265 | 3638 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 39.2 | 37.7 | 10.8 | 7.6 | 8.6 | 7.6 |
| Incr Delay (d2), s/veh | 1.5 | 0.3 | 0.7 | 0.3 | 0.1 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.2 | 2.1 | 12.5 | 2.8 | 0.1 | 9.5 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 40.6 | 38.0 | 11.4 | 7.9 | 8.8 | 8.1 |
| LnGrp LOS | D | D | B | A | A | A |
| Approach Vol, veh/h | 108 | | 2071 | | | 1787 |
| Approach Delay, s/veh | 40.2 | | 11.1 | | | 8.1 |
| Approach LOS | D | | B | | | A |

| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 90.0 | | 30.0 | 5.8 | 84.2 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | 85.5 | | 25.5 | 7.5 | 73.5 |
| Max Q Clear Time (g_c+I1), s | | 20.4 | | 7.0 | 2.2 | 25.8 |
| Green Ext Time (p_c), s | | 20.8 | | 0.2 | 0.0 | 22.7 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 10.6 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 9.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 8 | 72 | 80 | 0 | 47 | 1 | 52 | 1 | 1 | 1 | 1 | 5 |
| Future Vol, veh/h | 8 | 72 | 80 | 0 | 47 | 1 | 52 | 1 | 1 | 1 | 1 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 125 | - | - | - | 150 | - | - | 160 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 10 | 90 | 100 | 0 | 59 | 1 | 65 | 1 | 1 | 1 | 1 | 6 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 168 | 138 | 4 | 233 | 141 | 2 | 7 | 0 | 0 | 2 | 0 | 0 |
| Stage 1 | 6 | 6 | - | 132 | 132 | - | - | - | - | - | - | - |
| Stage 2 | 162 | 132 | - | 101 | 9 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 796 | 753 | 1080 | 722 | 750 | 1082 | 1614 | - | - | 1620 | - | - |
| Stage 1 | 1016 | 891 | - | 871 | 787 | - | - | - | - | - | - | - |
| Stage 2 | 840 | 787 | - | 905 | 888 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 723 | 722 | 1080 | 575 | 719 | 1082 | 1614 | - | - | 1620 | - | - |
| Mov Cap-2 Maneuver | 723 | 722 | - | 575 | 719 | - | - | - | - | - | - | - |
| Stage 1 | 975 | 890 | - | 836 | 756 | - | - | - | - | - | - | - |
| Stage 2 | 743 | 756 | - | 738 | 887 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 9.8 | 10.4 | 7.1 | 1 |
| HCM LOS | A | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1614 | - | - | 722 | 1080 | 724 | 1620 | - | - |
| HCM Lane V/C Ratio | 0.04 | - | - | 0.139 | 0.093 | 0.083 | 0.001 | - | - |
| HCM Control Delay (s) | 7.3 | - | - | 10.8 | 8.7 | 10.4 | 7.2 | - | - |
| HCM Lane LOS | A | - | - | B | A | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.5 | 0.3 | 0.3 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 15 | 555 | 18 | 0 | 0 |
| Future Vol, veh/h | 0 | 15 | 555 | 18 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | 100 | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 25 | 25 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 16 | 603 | 20 | 0 | 0 |

| Major/Minor | Minor1 | | Major1 | |
|---|---|---|---|---|
| Conflicting Flow All | - | 302 | 0 | 0 |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |
| Critical Hdwy | - | 6.94 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - |
| Follow-up Hdwy | - | 3.32 | - | - |
| Pot Cap-1 Maneuver | 0 | 694 | - | - |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 0 | - | - | - |
| Platoon blocked, % | | | - | - |
| Mov Cap-1 Maneuver | - | 694 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |

| Approach | WB | NB |
|---|---|---|
| HCM Control Delay, s | 10.3 | 0 |
| HCM LOS | B | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 |
|---|---|---|---|
| Capacity (veh/h) | - | - | 694 |
| HCM Lane V/C Ratio | - | - | 0.023 |
| HCM Control Delay (s) | - | - | 10.3 |
| HCM Lane LOS | - | - | B |
| HCM 95th %tile Q(veh) | - | - | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.9 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 6 | 12 | 8 | 15 | 7 |
| Future Vol, veh/h | 0 | 6 | 12 | 8 | 15 | 7 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 150 | 0 | 50 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 7 | 13 | 9 | 16 | 8 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 55 | 20 | 24 | 0 | - | 0 |
| Stage 1 | 20 | - | - | - | - | - |
| Stage 2 | 35 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 953 | 1058 | 1591 | - | - | - |
| Stage 1 | 1003 | - | - | - | - | - |
| Stage 2 | 987 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 945 | 1058 | 1591 | - | - | - |
| Mov Cap-2 Maneuver | 883 | - | - | - | - | - |
| Stage 1 | 995 | - | - | - | - | - |
| Stage 2 | 987 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.4 | 4.4 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1591 | - | - | 1058 | - | - |
| HCM Lane V/C Ratio | 0.008 | - | - | 0.006 | - | - |
| HCM Control Delay (s) | 7.3 | - | 0 | 8.4 | - | - |
| HCM Lane LOS | A | - | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.7 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1132 | 57 | 24 | 962 | 11 | 13 |
| Future Vol, veh/h | 1132 | 57 | 24 | 962 | 11 | 13 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 150 | 60 | - | 100 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 89 | 89 | 83 | 83 | 79 | 79 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1272 | 64 | 29 | 1159 | 14 | 16 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1336 | 0 | 1910 | 636 |
| Stage 1 | - | - | - | - | 1272 | - |
| Stage 2 | - | - | - | - | 638 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 512 | - | 60 | 421 |
| Stage 1 | - | - | - | - | 227 | - |
| Stage 2 | - | - | - | - | 488 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 512 | - | 57 | 421 |
| Mov Cap-2 Maneuver | - | - | - | - | 57 | - |
| Stage 1 | - | - | - | - | 227 | - |
| Stage 2 | - | - | - | - | 460 | - |

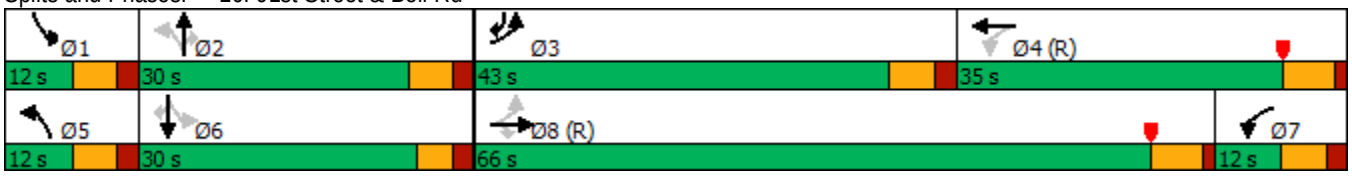
| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.3 | 47.6 |
| HCM LOS | | | E |

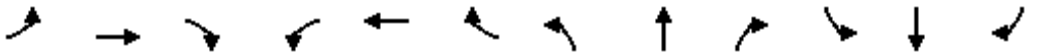
| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 57 | 421 | - | - | 512 | - |
| HCM Lane V/C Ratio | 0.244 | 0.039 | - | - | 0.056 | - |
| HCM Control Delay (s) | 87.5 | 13.9 | - | - | 12.5 | - |
| HCM Lane LOS | F | B | - | - | B | - |
| HCM 95th %tile Q(veh) | 0.8 | 0.1 | - | - | 0.2 | - |

| Phase Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Movement | SBL | NBTL | EBL | WBTL | NBL | SBTL | WBL | EBTL |
| Lead/Lag | Lead | Lag | Lead | Lag | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize | Yes | Yes | Yes | Yes | Yes | Yes | | |
| Recall Mode | None | None | None | C-Max | None | Min | None | C-Max |
| Maximum Split (s) | 12 | 30 | 43 | 35 | 12 | 30 | 12 | 66 |
| Maximum Split (%) | 10.0% | 25.0% | 35.8% | 29.2% | 10.0% | 25.0% | 10.0% | 55.0% |
| Minimum Split (s) | 11 | 24 | 11 | 22.5 | 11 | 37.3 | 11 | 38.7 |
| Yellow Time (s) | 4 | 4 | 4 | 4.7 | 4 | 3.3 | 4 | 4.7 |
| All-Red Time (s) | 2 | 2 | 2 | 1.2 | 2 | 2 | 2 | 1 |
| Minimum Initial (s) | 5 | 5 | 5 | 10 | 5 | 7 | 5 | 10 |
| Vehicle Extension (s) | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 2 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Walk Time (s) | | 7 | | | | 8 | | 8 |
| Flash Dont Walk (s) | | 11 | | | | 24 | | 24 |
| Dual Entry | No | Yes | No | Yes | No | Yes | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Start Time (s) | 1.7 | 13.7 | 43.7 | 86.7 | 1.7 | 13.7 | 109.7 | 43.7 |
| End Time (s) | 13.7 | 43.7 | 86.7 | 1.7 | 13.7 | 43.7 | 1.7 | 109.7 |
| Yield/Force Off (s) | 7.7 | 37.7 | 80.7 | 115.8 | 7.7 | 38.4 | 115.7 | 104 |
| Yield/Force Off 170(s) | 7.7 | 26.7 | 80.7 | 115.8 | 7.7 | 38.4 | 115.7 | 80 |
| Local Start Time (s) | 17.7 | 29.7 | 59.7 | 102.7 | 17.7 | 29.7 | 5.7 | 59.7 |
| Local Yield (s) | 23.7 | 53.7 | 96.7 | 11.8 | 23.7 | 54.4 | 11.7 | 0 |
| Local Yield 170(s) | 23.7 | 42.7 | 96.7 | 11.8 | 23.7 | 54.4 | 11.7 | 96 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 100 |
| Offset: 104 (87%), Referenced to phase 4:WBTL and 8:EBTL, Start of Yellow | |

Splits and Phases: 16: 91st Street & Bell Rd





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 7 | 1015 | 110 | 27 | 920 | 1 | 56 | 8 | 13 | 0 | 15 | 5 |
| Future Volume (veh/h) | 7 | 1015 | 110 | 27 | 920 | 1 | 56 | 8 | 13 | 0 | 15 | 5 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 8 | 1167 | 88 | 32 | 1082 | 1 | 86 | 12 | 14 | 0 | 16 | 3 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.85 | 0.85 | 0.85 | 0.65 | 0.65 | 0.65 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 238 | 1786 | 796 | 509 | 2484 | 2 | 219 | 296 | 251 | 142 | 109 | 108 |
| Arrive On Green | 0.01 | 0.50 | 0.50 | 0.19 | 0.68 | 0.68 | 0.05 | 0.16 | 0.16 | 0.00 | 0.06 | 0.06 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3643 | 3 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 8 | 1167 | 88 | 32 | 528 | 555 | 86 | 12 | 14 | 0 | 16 | 3 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 1870 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 0.3 | 29.2 | 2.5 | 0.0 | 16.1 | 16.1 | 5.3 | 0.7 | 0.6 | 0.0 | 1.0 | 0.2 |
| Cycle Q Clear(g_c), s | 0.3 | 29.2 | 2.5 | 0.0 | 16.1 | 16.1 | 5.3 | 0.7 | 0.6 | 0.0 | 1.0 | 0.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 238 | 1786 | 796 | 509 | 1212 | 1275 | 219 | 296 | 251 | 142 | 109 | 108 |
| V/C Ratio(X) | 0.03 | 0.65 | 0.11 | 0.06 | 0.44 | 0.44 | 0.39 | 0.04 | 0.06 | 0.00 | 0.15 | 0.03 |
| Avail Cap(c_a), veh/h | 770 | 1786 | 796 | 509 | 1212 | 1275 | 219 | 374 | 317 | 230 | 385 | 342 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 18.4 | 22.1 | 7.8 | 20.7 | 8.6 | 8.6 | 48.3 | 42.8 | 18.3 | 0.0 | 53.7 | 52.2 |
| Incr Delay (d2), s/veh | 0.1 | 1.9 | 0.3 | 0.0 | 1.1 | 1.1 | 1.1 | 0.1 | 0.1 | 0.0 | 0.2 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.2 | 17.4 | 2.3 | 1.0 | 9.6 | 9.9 | 4.4 | 0.6 | 0.6 | 0.0 | 0.8 | 0.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 18.4 | 24.0 | 8.1 | 20.7 | 9.8 | 9.7 | 49.5 | 42.8 | 18.4 | 0.0 | 53.9 | 52.2 |
| LnGrp LOS | B | C | A | C | A | A | D | D | B | A | D | D |
| Approach Vol, veh/h | | 1263 | | | 1115 | | | 112 | | | 19 | |
| Approach Delay, s/veh | | 22.8 | | | 10.1 | | | 44.9 | | | 53.6 | |
| Approach LOS | | C | | | B | | | D | | | D | |

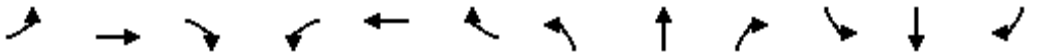
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 0.0 | 25.0 | 7.2 | 87.8 | 12.0 | 13.0 | 29.0 | 66.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 6.0 | * 6 | 6.0 | * 6 | 6.0 | 5.7 |
| Max Green Setting (Gmax), s | 6.0 | 24.0 | 37.0 | * 29 | 6.0 | * 25 | 6.0 | 60.3 |
| Max Q Clear Time (g_c+I1), s | 0.0 | 2.7 | 2.3 | 18.1 | 7.3 | 3.0 | 2.0 | 31.2 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 0.0 | 3.2 | 0.0 | 0.0 | 0.0 | 5.8 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 18.4 |
| HCM 6th LOS | B |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



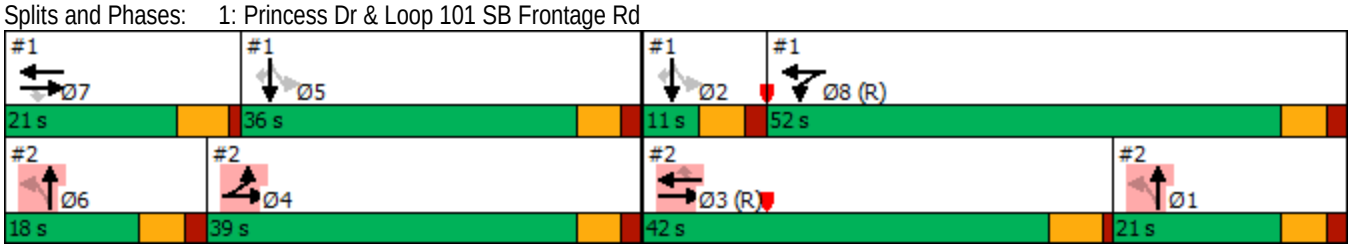
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 183 | 85 | 1297 | 458 | 0 | 0 | 0 | 0 | 615 | 659 | 254 |
| Future Volume (vph) | 0 | 183 | 85 | 1297 | 458 | 0 | 0 | 0 | 0 | 615 | 659 | 254 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 140 | | 245 | 240 | | 0 | 0 | | 0 | 355 | | 355 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 2 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 0.88 | 0.94 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.996 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.989 | |
| Satd. Flow (prot) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3156 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.989 | |
| Satd. Flow (perm) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3156 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 188 | | | | | | | | 2 | 254 |
| Link Speed (mph) | | 35 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 1345 | | | 409 | | | 1261 | | | 718 | |
| Travel Time (s) | | 26.2 | | | 6.2 | | | 28.7 | | | 10.9 | |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 203 | 94 | 1441 | 509 | 0 | 0 | 0 | 0 | 683 | 732 | 282 |
| Shared Lane Traffic (%) | | | | | | | | | | 31% | | 10% |
| Lane Group Flow (vph) | 0 | 203 | 94 | 1441 | 509 | 0 | 0 | 0 | 0 | 471 | 972 | 254 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Right | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 36 | | | 36 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 2 5 | |
| Permitted Phases | | | 7 | | | | | | | 2 5 | | 2 5 |

| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | | | | | | |
| Future Volume (vph) | | | | | | |
| Ideal Flow (vphpl) | | | | | | |
| Storage Length (ft) | | | | | | |
| Storage Lanes | | | | | | |
| Taper Length (ft) | | | | | | |
| Lane Util. Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | | | | | | |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | | | | | | |
| Right Turn on Red | | | | | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | | | | | |
| Link Distance (ft) | | | | | | |
| Travel Time (s) | | | | | | |
| Peak Hour Factor | | | | | | |
| Adj. Flow (vph) | | | | | | |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | | | | | | |
| Enter Blocked Intersection | | | | | | |
| Lane Alignment | | | | | | |
| Median Width(ft) | | | | | | |
| Link Offset(ft) | | | | | | |
| Crosswalk Width(ft) | | | | | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | | | | | | |
| Turning Speed (mph) | | | | | | |
| Number of Detectors | | | | | | |
| Detector Template | | | | | | |
| Leading Detector (ft) | | | | | | |
| Trailing Detector (ft) | | | | | | |
| Detector 1 Position(ft) | | | | | | |
| Detector 1 Size(ft) | | | | | | |
| Detector 1 Type | | | | | | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | | | | | | |
| Detector 1 Queue (s) | | | | | | |
| Detector 1 Delay (s) | | | | | | |
| Detector 2 Position(ft) | | | | | | |
| Detector 2 Size(ft) | | | | | | |
| Detector 2 Type | | | | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | | | | |
| Turn Type | | | | | | |
| Protected Phases | 1 | 2 | 3 | 4 | 5 | 6 |
| Permitted Phases | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 7 | 7 | 8 | 7 8 | | | | | 2 5 | 2 5 | 2 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 7.0 | 7.0 | 5.0 | | | | | | | | |
| Minimum Split (s) | | 26.7 | 26.7 | 11.0 | | | | | | | | |
| Total Split (s) | | 21.0 | 21.0 | 52.0 | | | | | | | | |
| Total Split (%) | | 17.5% | 17.5% | 43.3% | | | | | | | | |
| Maximum Green (s) | | 15.3 | 15.3 | 46.0 | | | | | | | | |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | | | | | | | | |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | | | | | | | | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | | | | | | | | |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | | | | | | | | |
| Lead/Lag | | Lead | Lead | Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | | | | | | | | |
| Recall Mode | | None | None | C-Min | | | | | | | | |
| Walk Time (s) | | 4.0 | 4.0 | | | | | | | | | |
| Flash Dont Walk (s) | | 17.0 | 17.0 | | | | | | | | | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | | | | | | | | |
| Act Effct Green (s) | | 10.5 | 10.5 | 46.4 | 62.9 | | | | | 45.4 | 45.4 | 45.4 |
| Actuated g/C Ratio | | 0.09 | 0.09 | 0.39 | 0.52 | | | | | 0.38 | 0.38 | 0.38 |
| v/c Ratio | | 0.46 | 0.23 | 0.75 | 0.27 | | | | | 0.77 | 0.81 | 0.36 |
| Control Delay | | 54.8 | 1.3 | 18.9 | 2.1 | | | | | 43.5 | 40.4 | 4.8 |
| Queue Delay | | 0.0 | 0.0 | 12.2 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 54.8 | 1.3 | 31.0 | 2.1 | | | | | 43.5 | 40.4 | 4.8 |
| LOS | | D | A | C | A | | | | | D | D | A |
| Approach Delay | | 37.8 | | | 23.5 | | | | | | 35.9 | |
| Approach LOS | | D | | | C | | | | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 47 (39%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 130 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.81 | | | |
| Intersection Signal Delay: 29.9 | | Intersection LOS: C | |
| Intersection Capacity Utilization 71.1% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Princess Dr & Loop 101 SB Frontage Rd



| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Detector Phase | | | | | | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 10.0 | 5.0 | 7.0 | 1.0 |
| Minimum Split (s) | 13.0 | 7.0 | 26.7 | 11.0 | 50.0 | 7.0 |
| Total Split (s) | 21.0 | 11.0 | 42.0 | 39.0 | 36.0 | 18.0 |
| Total Split (%) | 18% | 9% | 35% | 33% | 30% | 15% |
| Maximum Green (s) | 15.0 | 5.0 | 36.3 | 33.0 | 30.0 | 12.0 |
| Yellow Time (s) | 4.0 | 4.0 | 4.7 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | | | | | |
| Total Lost Time (s) | | | | | | |
| Lead/Lag | Lag | Lead | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 5.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | C-Min | None | None | None |
| Walk Time (s) | | | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | | 17.0 | | 40.0 | |
| Pedestrian Calls (#/hr) | | | 0 | | 0 | |
| Act Effct Green (s) | | | | | | |
| Actuated g/C Ratio | | | | | | |
| v/c Ratio | | | | | | |
| Control Delay | | | | | | |
| Queue Delay | | | | | | |
| Total Delay | | | | | | |
| LOS | | | | | | |
| Approach Delay | | | | | | |
| Approach LOS | | | | | | |

| Intersection Summary |
|---|

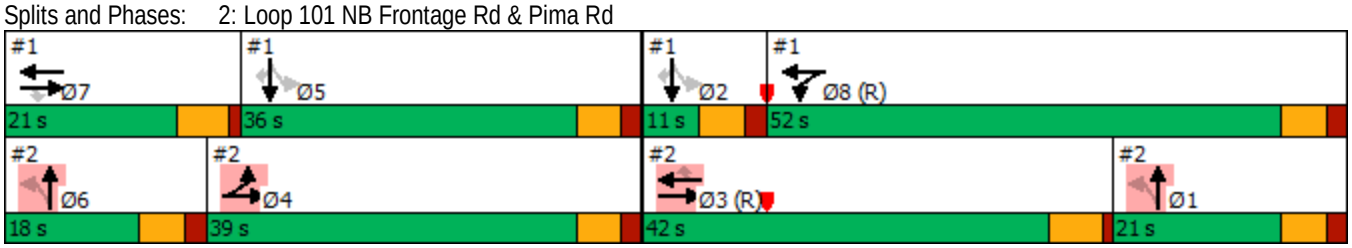
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 29 | 738 | 0 | 0 | 1417 | 358 | 386 | 441 | 1158 | 0 | 0 | 0 |
| Future Volume (vph) | 29 | 738 | 0 | 0 | 1417 | 358 | 386 | 441 | 1158 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 265 | | 0 | 350 | | 285 | 275 | | 275 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.81 | 1.00 | 0.91 | 0.91 | 0.88 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.990 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3356 | 2787 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.990 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3356 | 2787 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 398 | | | 833 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 409 | | | 1059 | | | 1024 | | | 527 | |
| Travel Time (s) | | 6.2 | | | 16.0 | | | 15.5 | | | 12.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 32 | 820 | 0 | 0 | 1574 | 398 | 429 | 490 | 1287 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 30% | | | | | |
| Lane Group Flow (vph) | 32 | 820 | 0 | 0 | 1574 | 398 | 300 | 619 | 1287 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | L NA | Right | Left | Left | Right | Left | Left | R NA | Left | Left | Right |
| Median Width(ft) | | 24 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | Free | | | |
| Protected Phases | 4 | 3 4 | | | 3 | | | 1 6 | | | | |
| Permitted Phases | | | | | | 3 | 1 6 | | Free | | | |

| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 | Ø8 |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | | | | | | |
| Future Volume (vph) | | | | | | |
| Ideal Flow (vphpl) | | | | | | |
| Storage Length (ft) | | | | | | |
| Storage Lanes | | | | | | |
| Taper Length (ft) | | | | | | |
| Lane Util. Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | | | | | | |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | | | | | | |
| Right Turn on Red | | | | | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | | | | | |
| Link Distance (ft) | | | | | | |
| Travel Time (s) | | | | | | |
| Peak Hour Factor | | | | | | |
| Adj. Flow (vph) | | | | | | |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | | | | | | |
| Enter Blocked Intersection | | | | | | |
| Lane Alignment | | | | | | |
| Median Width(ft) | | | | | | |
| Link Offset(ft) | | | | | | |
| Crosswalk Width(ft) | | | | | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | | | | | | |
| Turning Speed (mph) | | | | | | |
| Number of Detectors | | | | | | |
| Detector Template | | | | | | |
| Leading Detector (ft) | | | | | | |
| Trailing Detector (ft) | | | | | | |
| Detector 1 Position(ft) | | | | | | |
| Detector 1 Size(ft) | | | | | | |
| Detector 1 Type | | | | | | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | | | | | | |
| Detector 1 Queue (s) | | | | | | |
| Detector 1 Delay (s) | | | | | | |
| Detector 2 Position(ft) | | | | | | |
| Detector 2 Size(ft) | | | | | | |
| Detector 2 Type | | | | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | | | | |
| Turn Type | | | | | | |
| Protected Phases | 1 | 2 | 5 | 6 | 7 | 8 |
| Permitted Phases | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 4 | 3 4 | | | 3 | 3 | 1 6 | 1 6 | | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 10.0 | 10.0 | | | | | | |
| Minimum Split (s) | 11.0 | | | | 26.7 | 26.7 | | | | | | |
| Total Split (s) | 39.0 | | | | 42.0 | 42.0 | | | | | | |
| Total Split (%) | 32.5% | | | | 35.0% | 35.0% | | | | | | |
| Maximum Green (s) | 33.0 | | | | 36.3 | 36.3 | | | | | | |
| Yellow Time (s) | 4.0 | | | | 4.7 | 4.7 | | | | | | |
| All-Red Time (s) | 2.0 | | | | 1.0 | 1.0 | | | | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | 0.0 | | | | | | |
| Total Lost Time (s) | 6.0 | | | | 5.7 | 5.7 | | | | | | |
| Lead/Lag | Lag | | | | Lead | Lead | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 5.0 | 5.0 | | | | | | |
| Recall Mode | None | | | | C-Min | C-Min | | | | | | |
| Walk Time (s) | | | | | 4.0 | 4.0 | | | | | | |
| Flash Dont Walk (s) | | | | | 17.0 | 17.0 | | | | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | 0 | | | | | | |
| Act Effct Green (s) | 33.5 | 77.1 | | | 37.6 | 37.6 | 31.2 | 31.2 | 120.0 | | | |
| Actuated g/C Ratio | 0.28 | 0.64 | | | 0.31 | 0.31 | 0.26 | 0.26 | 1.00 | | | |
| v/c Ratio | 0.06 | 0.36 | | | 0.67 | 0.52 | 0.72 | 0.71 | 0.46 | | | |
| Control Delay | 22.2 | 2.9 | | | 31.6 | 7.0 | 50.7 | 45.1 | 0.6 | | | |
| Queue Delay | 0.0 | 0.8 | | | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 22.2 | 3.7 | | | 32.4 | 7.0 | 50.7 | 45.1 | 0.6 | | | |
| LOS | C | A | | | C | A | D | D | A | | | |
| Approach Delay | | 4.4 | | | 27.3 | | | 19.9 | | | | |
| Approach LOS | | A | | | C | | | B | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 47 (39%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 130 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.81 | | | |
| Intersection Signal Delay: 20.1 | | Intersection LOS: C | |
| Intersection Capacity Utilization 71.1% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 2: Loop 101 NB Frontage Rd & Pima Rd



| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 | Ø8 |
|---|---|---|---|---|---|---|
| Detector Phase | | | | | | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 7.0 | 1.0 | 7.0 | 5.0 |
| Minimum Split (s) | 13.0 | 7.0 | 50.0 | 7.0 | 26.7 | 11.0 |
| Total Split (s) | 21.0 | 11.0 | 36.0 | 18.0 | 21.0 | 52.0 |
| Total Split (%) | 18% | 9% | 30% | 15% | 18% | 43% |
| Maximum Green (s) | 15.0 | 5.0 | 30.0 | 12.0 | 15.3 | 46.0 |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.7 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 |
| Lost Time Adjust (s) | | | | | | |
| Total Lost Time (s) | | | | | | |
| Lead/Lag | Lag | Lead | Lag | Lead | Lead | Lag |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | None | None | None | C-Min |
| Walk Time (s) | | | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | | 40.0 | | 17.0 | |
| Pedestrian Calls (#/hr) | | | 0 | | 0 | |
| Act Effct Green (s) | | | | | | |
| Actuated g/C Ratio | | | | | | |
| v/c Ratio | | | | | | |
| Control Delay | | | | | | |
| Queue Delay | | | | | | |
| Total Delay | | | | | | |
| LOS | | | | | | |
| Approach Delay | | | | | | |
| Approach LOS | | | | | | |

| Intersection Summary |
|---|

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 331 | 123 | 507 | 522 | 0 | 0 | 0 | 0 | 603 | 160 | 42 |
| Future Volume (vph) | 0 | 331 | 123 | 507 | 522 | 0 | 0 | 0 | 0 | 603 | 160 | 42 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 240 | | 315 | 220 | | 0 | 0 | | 0 | 385 | | 385 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.999 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.969 | |
| Satd. Flow (prot) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3101 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.969 | |
| Satd. Flow (perm) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3101 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 145 | | | | | | | | | 92 |
| Link Speed (mph) | | 45 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 824 | | | 389 | | | 598 | | | 1243 | |
| Travel Time (s) | | 12.5 | | | 5.9 | | | 13.6 | | | 18.8 | |
| Peak Hour Factor | 0.25 | 0.85 | 0.85 | 0.89 | 0.89 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 389 | 145 | 570 | 587 | 0 | 0 | 0 | 0 | 670 | 178 | 47 |
| Shared Lane Traffic (%) | | | | | | | | | | 50% | | 10% |
| Lane Group Flow (vph) | 0 | 389 | 145 | 570 | 587 | 0 | 0 | 0 | 0 | 335 | 518 | 42 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | | | | | 2 | |
| Permitted Phases | | | 8 | | | | | | | 2 | | 2 |

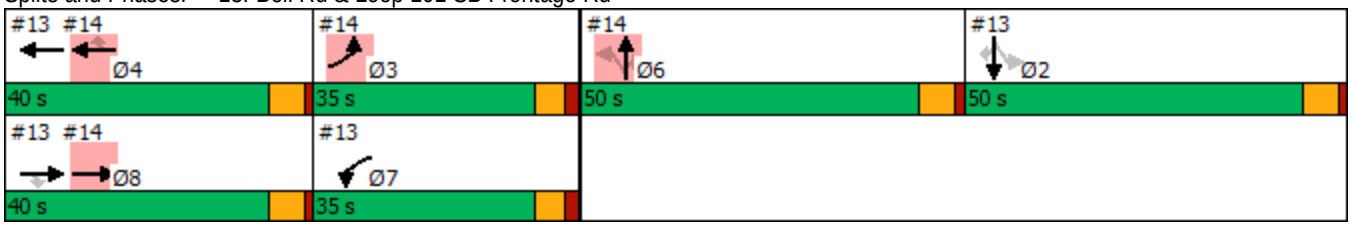
| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 3 | 6 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 8 | 8 | 7 | 4 | | | | | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 10.0 | 10.0 | 5.0 | 10.0 | | | | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | | 35.7 | 35.7 | 11.0 | 39.7 | | | | | 50.9 | 50.9 | 50.9 |
| Total Split (s) | | 40.0 | 40.0 | 35.0 | 40.0 | | | | | 50.0 | 50.0 | 50.0 |
| Total Split (%) | | 22.9% | 22.9% | 20.0% | 22.9% | | | | | 28.6% | 28.6% | 28.6% |
| Maximum Green (s) | | 34.3 | 34.3 | 29.0 | 34.3 | | | | | 44.1 | 44.1 | 44.1 |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | 4.7 | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | 1.0 | | | | | 1.2 | 1.2 | 1.2 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | 5.7 | | | | | 5.9 | 5.9 | 5.9 |
| Lead/Lag | | Lead | Lead | Lag | Lead | | | | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | 2.0 | 2.0 | 2.0 |
| Recall Mode | | Min | Min | None | None | | | | | None | None | None |
| Walk Time (s) | | 7.0 | 7.0 | | 8.0 | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 23.0 | 23.0 | | 26.0 | | | | | 38.0 | 38.0 | 38.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 34.6 | 34.6 | 29.3 | 31.4 | | | | | 36.5 | 36.5 | 36.5 |
| Actuated g/C Ratio | | 0.22 | 0.22 | 0.19 | 0.20 | | | | | 0.23 | 0.23 | 0.23 |
| v/c Ratio | | 0.35 | 0.31 | 0.89 | 0.83 | | | | | 0.90 | 0.90dl | 0.10 |
| Control Delay | | 54.6 | 9.8 | 81.0 | 41.4 | | | | | 85.0 | 61.9 | 0.5 |
| Queue Delay | | 0.5 | 0.0 | 18.8 | 0.2 | | | | | 28.7 | 1.3 | 0.0 |
| Total Delay | | 55.2 | 9.8 | 99.7 | 41.7 | | | | | 113.6 | 63.2 | 0.5 |
| LOS | | E | A | F | D | | | | | F | E | A |
| Approach Delay | | 42.9 | | | 70.3 | | | | | | 79.2 | |
| Approach LOS | | D | | | E | | | | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 156.8 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.31 | | | |
| Intersection Signal Delay: 67.7 | | Intersection LOS: E | |
| Intersection Capacity Utilization 68.4% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 13: Bell Rd & Loop 101 SB Frontage Rd



| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 5.0 | 7.0 |
| Minimum Split (s) | 11.0 | 48.0 |
| Total Split (s) | 35.0 | 50.0 |
| Total Split (%) | 20% | 29% |
| Maximum Green (s) | 29.0 | 44.0 |
| Yellow Time (s) | 4.0 | 4.7 |
| All-Red Time (s) | 2.0 | 1.3 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lead |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | Min | None |
| Walk Time (s) | | 7.0 |
| Flash Dont Walk (s) | | 35.0 |
| Pedestrian Calls (#/hr) | | 0 |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|

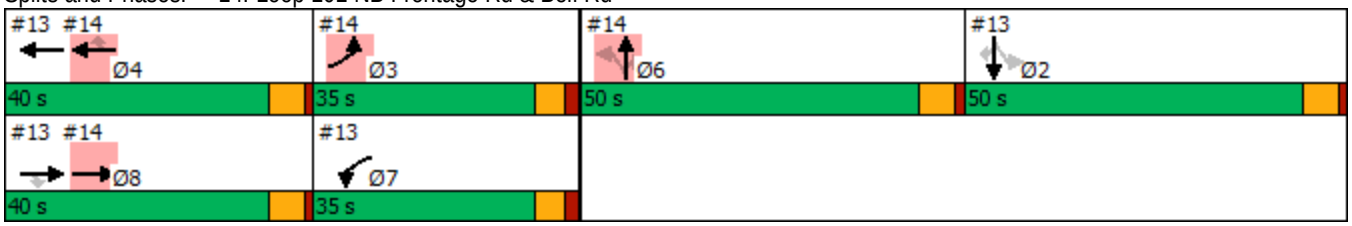
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 918 | 0 | 0 | 638 | 349 | 390 | 208 | 338 | 0 | 0 | 0 |
| Future Volume (vph) | 16 | 918 | 0 | 0 | 638 | 349 | 390 | 208 | 338 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 220 | | 0 | 235 | | 175 | 310 | | 310 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.86 | 1.00 | 0.91 | 0.86 | 0.91 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | 0.962 | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.985 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3036 | 1441 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.985 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3036 | 1441 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 382 | | 21 | 241 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 389 | | | 797 | | | 655 | | | 974 | |
| Travel Time (s) | | 5.9 | | | 12.1 | | | 9.9 | | | 22.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 18 | 1020 | 0 | 0 | 717 | 388 | 433 | 231 | 376 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 38% | | 36% | | | |
| Lane Group Flow (vph) | 18 | 1020 | 0 | 0 | 717 | 388 | 268 | 531 | 241 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | Perm | | | |
| Protected Phases | 3 | 8 | | | 4 | | | 6 | | | | |
| Permitted Phases | | | | | | 4 | 6 | | 6 | | | |

| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 2 | 7 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 3 | 8 | | | 4 | 4 | 6 | 6 | 6 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | | | 10.0 | 10.0 | 7.0 | 7.0 | 7.0 | | | |
| Minimum Split (s) | 11.0 | 35.7 | | | 39.7 | 39.7 | 48.0 | 48.0 | 48.0 | | | |
| Total Split (s) | 35.0 | 40.0 | | | 40.0 | 40.0 | 50.0 | 50.0 | 50.0 | | | |
| Total Split (%) | 20.0% | 22.9% | | | 22.9% | 22.9% | 28.6% | 28.6% | 28.6% | | | |
| Maximum Green (s) | 29.0 | 34.3 | | | 34.3 | 34.3 | 44.0 | 44.0 | 44.0 | | | |
| Yellow Time (s) | 4.0 | 4.7 | | | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 2.0 | 1.0 | | | 1.0 | 1.0 | 1.3 | 1.3 | 1.3 | | | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 6.0 | 5.7 | | | 5.7 | 5.7 | 6.0 | 6.0 | 6.0 | | | |
| Lead/Lag | Lag | Lead | | | Lead | Lead | Lead | Lead | Lead | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Recall Mode | Min | Min | | | None | None | None | None | None | | | |
| Walk Time (s) | | 7.0 | | | 8.0 | 8.0 | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | 23.0 | | | 26.0 | 26.0 | 35.0 | 35.0 | 35.0 | | | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 32.5 | 34.6 | | | 31.4 | 31.4 | 32.6 | 32.6 | 32.6 | | | |
| Actuated g/C Ratio | 0.21 | 0.22 | | | 0.20 | 0.20 | 0.21 | 0.21 | 0.21 | | | |
| v/c Ratio | 0.05 | 1.31 | | | 0.56 | 0.62 | 0.80 | 0.82 | 0.49 | | | |
| Control Delay | 51.9 | 172.9 | | | 59.2 | 10.4 | 78.1 | 68.4 | 9.2 | | | |
| Queue Delay | 0.0 | 0.0 | | | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 51.9 | 173.0 | | | 59.6 | 10.4 | 78.1 | 68.5 | 9.2 | | | |
| LOS | D | F | | | E | B | E | E | A | | | |
| Approach Delay | | 170.9 | | | 42.3 | | | 57.2 | | | | |
| Approach LOS | | F | | | D | | | E | | | | |

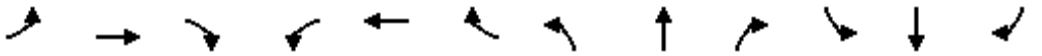
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 156.8 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.31 | | | |
| Intersection Signal Delay: 89.1 | | Intersection LOS: F | |
| Intersection Capacity Utilization 68.4% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Loop 101 NB Frontage Rd & Bell Rd



| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 7.0 | 5.0 |
| Minimum Split (s) | 50.9 | 11.0 |
| Total Split (s) | 50.0 | 35.0 |
| Total Split (%) | 29% | 20% |
| Maximum Green (s) | 44.1 | 29.0 |
| Yellow Time (s) | 4.7 | 4.0 |
| All-Red Time (s) | 1.2 | 2.0 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lag |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | None | None |
| Walk Time (s) | 7.0 | |
| Flash Dont Walk (s) | 38.0 | |
| Pedestrian Calls (#/hr) | 0 | |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1093 | 512 | 244 | 1248 | 0 | 0 | 0 | 0 | 832 | 626 | 541 |
| Future Volume (vph) | 0 | 1093 | 512 | 244 | 1248 | 0 | 0 | 0 | 0 | 832 | 626 | 541 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 185 | | 0 | 0 | | 0 | 0 | | 0 | 250 | | 250 |
| Storage Lanes | 2 | | 1 | 2 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.81 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 | 0.95 | 1.00 |
| Ped Bike Factor | | | 0.99 | 1.00 | | | | | | | | 0.99 |
| Frt | | | 0.850 | | | | | | | | | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 7192 | 1482 | 3019 | 4940 | 0 | 0 | 0 | 0 | 3183 | 3610 | 1538 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 7192 | 1463 | 3017 | 4940 | 0 | 0 | 0 | 0 | 3183 | 3610 | 1517 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 420 | | | | | | | | | 172 |
| Link Speed (mph) | | 45 | | | 45 | | | 30 | | | 30 | |
| Link Distance (ft) | | 675 | | | 322 | | | 835 | | | 832 | |
| Travel Time (s) | | 10.2 | | | 4.9 | | | 19.0 | | | 18.9 | |
| Confl. Peds. (#/hr) | 1 | | 1 | 1 | | | | | | | | 1 |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.85 | 0.85 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 0% | 7% | 9% | 16% | 5% | 0% | 0% | 0% | 0% | 10% | 0% | 5% |
| Adj. Flow (vph) | 0 | 1214 | 569 | 287 | 1468 | 0 | 0 | 0 | 0 | 924 | 696 | 601 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 1214 | 569 | 287 | 1468 | 0 | 0 | 0 | 0 | 924 | 696 | 601 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 60 | | 60 | 60 | | 60 | 60 | | 60 | 60 | | 60 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |

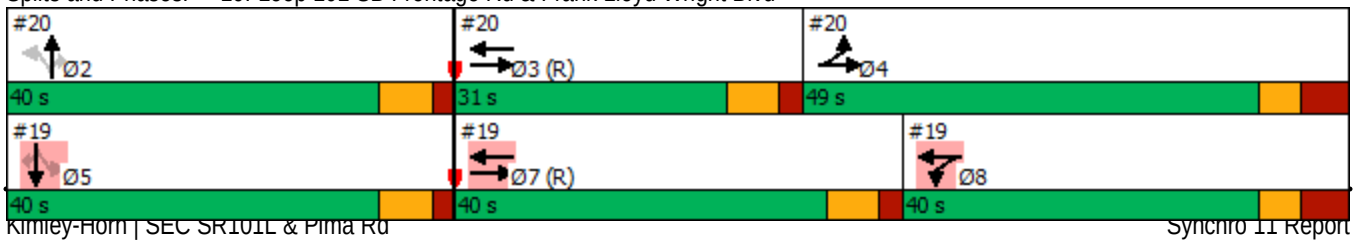
| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | | NA | Free | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 5 | |
| Permitted Phases | | | Free | | | | | | | 5 | | 5 |
| Detector Phase | | 7 | | 8 | 7 8 | | | | | 5 | 5 | 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 5.0 | | 6.0 | | | | | | 6.0 | 6.0 | 6.0 |
| Minimum Split (s) | | 24.8 | | 31.9 | | | | | | 29.7 | 29.7 | 29.7 |
| Total Split (s) | | 40.0 | | 40.0 | | | | | | 40.0 | 40.0 | 40.0 |
| Total Split (%) | | 33.3% | | 33.3% | | | | | | 33.3% | 33.3% | 33.3% |
| Maximum Green (s) | | 33.2 | | 31.7 | | | | | | 33.3 | 33.3 | 33.3 |
| Yellow Time (s) | | 4.7 | | 3.9 | | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 2.1 | | 4.4 | | | | | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.8 | | 8.3 | | | | | | 6.7 | 6.7 | 6.7 |
| Lead/Lag | | Lead | | Lag | | | | | | | | |
| Lead-Lag Optimize? | | Yes | | Yes | | | | | | | | |
| Vehicle Extension (s) | | 0.2 | | 0.2 | | | | | | 0.2 | 0.2 | 0.2 |
| Recall Mode | | C-Max | | None | | | | | | None | None | None |
| Walk Time (s) | | 7.0 | | | | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 11.0 | | | | | | | | 16.0 | 16.0 | 16.0 |
| Pedestrian Calls (#/hr) | | 0 | | | | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 33.2 | 120.0 | 19.3 | 60.8 | | | | | 45.7 | 45.7 | 45.7 |
| Actuated g/C Ratio | | 0.28 | 1.00 | 0.16 | 0.51 | | | | | 0.38 | 0.38 | 0.38 |
| v/c Ratio | | 0.61 | 0.39 | 0.59 | 0.59 | | | | | 0.76 | 0.51 | 0.88 |
| Control Delay | | 39.3 | 0.8 | 56.4 | 25.4 | | | | | 38.5 | 31.1 | 41.1 |
| Queue Delay | | 1.0 | 0.0 | 0.0 | 2.7 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 40.3 | 0.8 | 56.4 | 28.0 | | | | | 38.5 | 31.1 | 41.1 |
| LOS | | D | A | E | C | | | | | D | C | D |
| Approach Delay | | 27.7 | | | 32.7 | | | | | | 36.8 | |
| Approach LOS | | C | | | C | | | | | | D | |

**Intersection Summary**

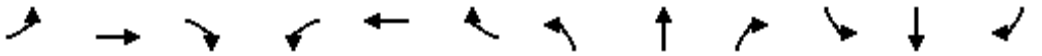
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 32.7 Intersection LOS: C
Intersection Capacity Utilization 91.9% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 19: Loop 101 SB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 2 | 3 | 4 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.7 | 24.8 | 13.3 |
| Total Split (s) | 40.0 | 31.0 | 49.0 |
| Total Split (%) | 33% | 26% | 41% |
| Maximum Green (s) | 33.3 | 24.2 | 40.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | Yes | Yes |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|



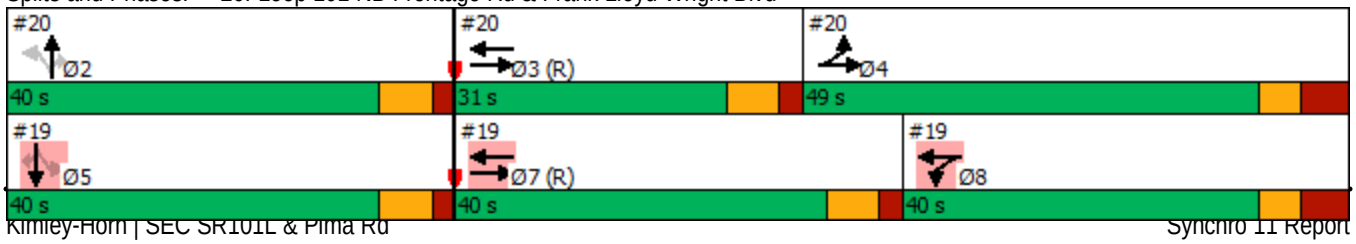
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 570 | 1355 | 0 | 0 | 806 | 1040 | 686 | 648 | 93 | 0 | 0 | 0 |
| Future Volume (vph) | 570 | 1355 | 0 | 0 | 806 | 1040 | 686 | 648 | 93 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 245 | | 150 | 250 | | 250 | 0 | | 0 |
| Storage Lanes | 2 | | 0 | 2 | | 2 | 2 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.81 | 0.88 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (prot) | 3183 | 4893 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (perm) | 3183 | 4893 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 589 | | | 172 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 45 | |
| Link Distance (ft) | | 322 | | | 1160 | | | 836 | | | 801 | |
| Travel Time (s) | | 4.9 | | | 17.6 | | | 12.7 | | | 12.1 | |
| Confl. Peds. (#/hr) | | | 1 | | | | | | | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.85 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Heavy Vehicles (%) | 10% | 6% | 0% | 0% | 6% | 14% | 2% | 0% | 2% | 0% | 0% | 0% |
| Adj. Flow (vph) | 633 | 1506 | 0 | 0 | 948 | 1156 | 762 | 720 | 103 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 633 | 1506 | 0 | 0 | 948 | 1156 | 762 | 720 | 103 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 60 | | 60 | 60 | | 60 | 60 | | 60 | 60 | | 60 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |

| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Prot | NA | | | NA | Free | Perm | NA | Perm | | | |
| Protected Phases | 4 | 3 4 | | | 3 | | | 2 | | | | |
| Permitted Phases | | | | | | Free | 2 | | 2 | | | |
| Detector Phase | 4 | 3 4 | | | 3 | | 2 | 2 | 2 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 5.0 | | 5.0 | 5.0 | 5.0 | | | |
| Minimum Split (s) | 13.3 | | | | 24.8 | | 24.7 | 24.7 | 24.7 | | | |
| Total Split (s) | 49.0 | | | | 31.0 | | 40.0 | 40.0 | 40.0 | | | |
| Total Split (%) | 40.8% | | | | 25.8% | | 33.3% | 33.3% | 33.3% | | | |
| Maximum Green (s) | 40.7 | | | | 24.2 | | 33.3 | 33.3 | 33.3 | | | |
| Yellow Time (s) | 3.9 | | | | 4.7 | | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 4.4 | | | | 2.1 | | 2.0 | 2.0 | 2.0 | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 8.3 | | | | 6.8 | | 6.7 | 6.7 | 6.7 | | | |
| Lead/Lag | Lag | | | | Lead | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 0.2 | | | | 0.2 | | 0.2 | 0.2 | 0.2 | | | |
| Recall Mode | None | | | | C-Max | | None | None | None | | | |
| Walk Time (s) | | | | | 7.0 | | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | | | | 11.0 | | 11.0 | 11.0 | 11.0 | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 28.3 | 60.8 | | | 24.2 | 120.0 | 45.7 | 45.7 | 45.7 | | | |
| Actuated g/C Ratio | 0.24 | 0.51 | | | 0.20 | 1.00 | 0.38 | 0.38 | 0.38 | | | |
| v/c Ratio | 0.84 | 0.61 | | | 0.65 | 0.46 | 0.58 | 0.36 | 0.15 | | | |
| Control Delay | 54.8 | 22.9 | | | 46.4 | 0.6 | 32.8 | 28.2 | 0.5 | | | |
| Queue Delay | 1.6 | 0.7 | | | 5.8 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 56.4 | 23.6 | | | 52.2 | 0.6 | 32.8 | 28.2 | 0.5 | | | |
| LOS | E | C | | | D | A | C | C | A | | | |
| Approach Delay | | 33.3 | | | 23.9 | | | 28.6 | | | | |
| Approach LOS | | C | | | C | | | C | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.88 | | | |
| Intersection Signal Delay: 28.6 | | Intersection LOS: C | |
| Intersection Capacity Utilization 91.9% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 20: Loop 101 NB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 5 | 7 | 8 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 6.0 | 5.0 | 6.0 |
| Minimum Split (s) | 29.7 | 24.8 | 31.9 |
| Total Split (s) | 40.0 | 40.0 | 40.0 |
| Total Split (%) | 33% | 33% | 33% |
| Maximum Green (s) | 33.3 | 33.2 | 31.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | Yes | Yes |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 16.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|

# 2025 Total PM
# Traffic Capacity Analysis

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | ↑↑↑ | ↱ | | ↑↑↑ | | ↱ |
| Traffic Vol, veh/h | 1697 | 15 | 0 | 1715 | 0 | 3 |
| Future Vol, veh/h | 1697 | 15 | 0 | 1715 | 0 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1845 | 16 | 0 | 1864 | 0 | 3 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | - | - | - | 923 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.92 |
| Pot Cap-1 Maneuver | - | - | 0 | - | 0 | 233 |
| Stage 1 | - | - | 0 | - | 0 | - |
| Stage 2 | - | - | 0 | - | 0 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 233 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 20.7 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBT |
|---|---|---|---|---|
| Capacity (veh/h) | 233 | - | - | - |
| HCM Lane V/C Ratio | 0.014 | - | - | - |
| HCM Control Delay (s) | 20.7 | - | - | - |
| HCM Lane LOS | C | - | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | - |

| Phase Number | 2 | 4 | 5 | 6 |
|---|---|---|---|---|
| Movement | SBTL | WBL | SBL | NBT |
| Lead/Lag | | | Lead | Lag |
| Lead-Lag Optimize | | | Yes | Yes |
| Recall Mode | C-Max | Max | None | C-Max |
| Maximum Split (s) | 90 | 30 | 12 | 78 |
| Maximum Split (%) | 75.0% | 25.0% | 10.0% | 65.0% |
| Minimum Split (s) | 22.5 | 22.5 | 9.5 | 22.5 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1 | 1 | 1 | 1 |
| Minimum Initial (s) | 5 | 5 | 5 | 5 |
| Vehicle Extension (s) | 3 | 3 | 3 | 3 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 |
| Walk Time (s) | 7 | 7 | | 7 |
| Flash Dont Walk (s) | 11 | 11 | | 11 |
| Dual Entry | Yes | Yes | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes |
| Start Time (s) | 108 | 78 | 108 | 0 |
| End Time (s) | 78 | 108 | 0 | 78 |
| Yield/Force Off (s) | 73.5 | 103.5 | 115.5 | 73.5 |
| Yield/Force Off 170(s) | 62.5 | 92.5 | 115.5 | 62.5 |
| Local Start Time (s) | 108 | 78 | 108 | 0 |
| Local Yield (s) | 73.5 | 103.5 | 115.5 | 73.5 |
| Local Yield 170(s) | 62.5 | 92.5 | 115.5 | 62.5 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 60 |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of Green | |

Splits and Phases: 4: Pima Rd & Trailside View

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 100 | 36 | 1583 | 117 | 10 | 1602 |
| Future Volume (veh/h) | 100 | 36 | 1583 | 117 | 10 | 1602 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 128 | 46 | 1721 | 127 | 12 | 1885 |
| Peak Hour Factor | 0.78 | 0.78 | 0.92 | 0.92 | 0.85 | 0.85 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 379 | 337 | 3376 | 1048 | 207 | 3638 |
| Arrive On Green | 0.21 | 0.21 | 0.66 | 0.66 | 0.01 | 0.71 |
| Sat Flow, veh/h | 1781 | 1585 | 5274 | 1585 | 1781 | 5274 |
| Grp Volume(v), veh/h | 128 | 46 | 1721 | 127 | 12 | 1885 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1585 | 1702 | 1585 | 1781 | 1702 |
| Q Serve(g_s), s | 7.3 | 2.8 | 20.7 | 3.5 | 0.3 | 20.2 |
| Cycle Q Clear(g_c), s | 7.3 | 2.8 | 20.7 | 3.5 | 0.3 | 20.2 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 379 | 337 | 3376 | 1048 | 207 | 3638 |
| V/C Ratio(X) | 0.34 | 0.14 | 0.51 | 0.12 | 0.06 | 0.52 |
| Avail Cap(c_a), veh/h | 379 | 337 | 3376 | 1048 | 293 | 3638 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 40.1 | 38.3 | 10.4 | 7.5 | 8.0 | 7.9 |
| Incr Delay (d2), s/veh | 2.4 | 0.8 | 0.6 | 0.2 | 0.1 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 6.3 | 5.1 | 11.2 | 2.0 | 0.2 | 10.2 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 42.5 | 39.2 | 10.9 | 7.7 | 8.1 | 8.4 |
| LnGrp LOS | D | D | B | A | A | A |
| Approach Vol, veh/h | 174 | | 1848 | | | 1897 |
| Approach Delay, s/veh | 41.6 | | 10.7 | | | 8.4 |
| Approach LOS | D | | B | | | A |

| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 90.0 | | 30.0 | 6.1 | 83.9 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | 85.5 | | 25.5 | 7.5 | 73.5 |
| Max Q Clear Time (g_c+I1), s | | 22.2 | | 9.3 | 2.3 | 22.7 |
| Green Ext Time (p_c), s | | 23.1 | | 0.4 | 0.0 | 19.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.0 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 9.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 8 | 69 | 77 | 1 | 59 | 1 | 64 | 1 | 1 | 1 | 1 | 6 |
| Future Vol, veh/h | 8 | 69 | 77 | 1 | 59 | 1 | 64 | 1 | 1 | 1 | 1 | 6 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 125 | - | - | - | 150 | - | - | 160 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 10 | 86 | 96 | 1 | 74 | 1 | 80 | 1 | 1 | 1 | 1 | 8 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 206 | 169 | 5 | 260 | 173 | 2 | 9 | 0 | 0 | 2 | 0 | 0 |
| Stage 1 | 7 | 7 | - | 162 | 162 | - | - | - | - | - | - | - |
| Stage 2 | 199 | 162 | - | 98 | 11 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 752 | 724 | 1078 | 693 | 720 | 1082 | 1611 | - | - | 1620 | - | - |
| Stage 1 | 1015 | 890 | - | 840 | 764 | - | - | - | - | - | - | - |
| Stage 2 | 803 | 764 | - | 908 | 886 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 663 | 687 | 1078 | 549 | 683 | 1082 | 1611 | - | - | 1620 | - | - |
| Mov Cap-2 Maneuver | 663 | 687 | - | 549 | 683 | - | - | - | - | - | - | - |
| Stage 1 | 964 | 889 | - | 798 | 726 | - | - | - | - | - | - | - |
| Stage 2 | 685 | 726 | - | 746 | 885 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 9.9 | 10.9 | 7.1 | 0.9 |
| HCM LOS | A | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1611 | - | - | 684 | 1078 | 684 | 1620 | - | - |
| HCM Lane V/C Ratio | 0.05 | - | - | 0.141 | 0.089 | 0.111 | 0.001 | - | - |
| HCM Control Delay (s) | 7.4 | - | - | 11.1 | 8.7 | 10.9 | 7.2 | - | - |
| HCM Lane LOS | A | - | - | B | A | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0.5 | 0.3 | 0.4 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 51 | 655 | 7 | 0 | 0 |
| Future Vol, veh/h | 0 | 51 | 655 | 7 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | 100 | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 25 | 25 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 55 | 712 | 8 | 0 | 0 |

| Major/Minor | Minor1 | | Major1 | |
|---|---|---|---|---|
| Conflicting Flow All | - | 356 | 0 | 0 |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |
| Critical Hdwy | - | 6.94 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - |
| Follow-up Hdwy | - | 3.32 | - | - |
| Pot Cap-1 Maneuver | 0 | 640 | - | - |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 0 | - | - | - |
| Platoon blocked, % | | | - | - |
| Mov Cap-1 Maneuver | - | 640 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |

| Approach | WB | NB |
|---|---|---|
| HCM Control Delay, s | 11.2 | 0 |
| HCM LOS | B | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 |
|---|---|---|---|
| Capacity (veh/h) | - | - | 640 |
| HCM Lane V/C Ratio | - | - | 0.087 |
| HCM Control Delay (s) | - | - | 11.2 |
| HCM Lane LOS | - | - | B |
| HCM 95th %tile Q(veh) | - | - | 0.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.4 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 19 | 4 | 22 | 9 | 2 |
| Future Vol, veh/h | 0 | 19 | 4 | 22 | 9 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 150 | 0 | 50 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 21 | 4 | 24 | 10 | 2 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 43 | 11 | 12 | 0 | - | 0 |
| Stage 1 | 11 | - | - | - | - | - |
| Stage 2 | 32 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 968 | 1070 | 1607 | - | - | - |
| Stage 1 | 1012 | - | - | - | - | - |
| Stage 2 | 991 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 966 | 1070 | 1607 | - | - | - |
| Mov Cap-2 Maneuver | 896 | - | - | - | - | - |
| Stage 1 | 1010 | - | - | - | - | - |
| Stage 2 | 991 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.4 | 1.1 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1607 | - | - | 1070 | - | - |
| HCM Lane V/C Ratio | 0.003 | - | - | 0.019 | - | - |
| HCM Control Delay (s) | 7.2 | - | 0 | 8.4 | - | - |
| HCM Lane LOS | A | - | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.5 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 1174 | 15 | 5 | 854 | 33 | 18 |
| Future Vol, veh/h | 1174 | 15 | 5 | 854 | 33 | 18 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 150 | 60 | - | 100 | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 81 | 81 | 79 | 79 | 52 | 52 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1449 | 19 | 6 | 1081 | 63 | 35 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 1468 | 0 | 2002 | 725 |
| Stage 1 | - | - | - | - | 1449 | - |
| Stage 2 | - | - | - | - | 553 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 456 | - | *72 | 368 |
| Stage 1 | - | - | - | - | *182 | - |
| Stage 2 | - | - | - | - | *704 | - |
| Platoon blocked, % | - | - | | - | 1 | |
| Mov Cap-1 Maneuver | - | - | 456 | - | *71 | 368 |
| Mov Cap-2 Maneuver | - | - | - | - | *71 | - |
| Stage 1 | - | - | - | - | *182 | - |
| Stage 2 | - | - | - | - | *695 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 119.8 |
| HCM LOS | | | F |

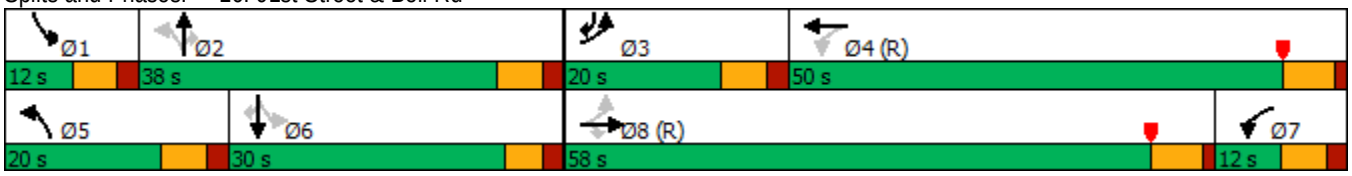
| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 71 | 368 | - | - | 456 | - |
| HCM Lane V/C Ratio | 0.894 | 0.094 | - | - | 0.014 | - |
| HCM Control Delay (s) | 176.6 | 15.8 | - | - | 13 | - |
| HCM Lane LOS | F | C | - | - | B | - |
| HCM 95th %tile Q(veh) | 4.4 | 0.3 | - | - | 0 | - |

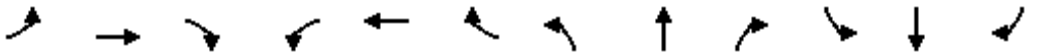
| Notes | | | |
|---|---|---|---|
| ~: Volume exceeds capacity | $: Delay exceeds 300s | +: Computation Not Defined | *: All major volume in platoon |

| Phase Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Movement | SBL | NBTL | EBL | WBTL | NBL | SBTL | WBL | EBTL |
| Lead/Lag | Lead | Lag | Lead | Lag | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize | Yes | Yes | Yes | Yes | Yes | Yes | | |
| Recall Mode | None | None | None | C-Max | None | Min | None | C-Max |
| Maximum Split (s) | 12 | 38 | 20 | 50 | 20 | 30 | 12 | 58 |
| Maximum Split (%) | 10.0% | 31.7% | 16.7% | 41.7% | 16.7% | 25.0% | 10.0% | 48.3% |
| Minimum Split (s) | 11 | 24 | 11 | 22.5 | 11 | 37.3 | 11 | 38.7 |
| Yellow Time (s) | 4 | 4 | 4 | 4.7 | 4 | 3.3 | 4 | 4.7 |
| All-Red Time (s) | 2 | 2 | 2 | 1.2 | 2 | 2 | 2 | 1 |
| Minimum Initial (s) | 5 | 5 | 5 | 10 | 5 | 7 | 5 | 10 |
| Vehicle Extension (s) | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 2 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Walk Time (s) | | 7 | | | | 8 | | 8 |
| Flash Dont Walk (s) | | 11 | | | | 24 | | 24 |
| Dual Entry | No | Yes | No | Yes | No | Yes | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Start Time (s) | 4.7 | 16.7 | 54.7 | 74.7 | 4.7 | 24.7 | 112.7 | 54.7 |
| End Time (s) | 16.7 | 54.7 | 74.7 | 4.7 | 24.7 | 54.7 | 4.7 | 112.7 |
| Yield/Force Off (s) | 10.7 | 48.7 | 68.7 | 118.8 | 18.7 | 49.4 | 118.7 | 107 |
| Yield/Force Off 170(s) | 10.7 | 37.7 | 68.7 | 118.8 | 18.7 | 49.4 | 118.7 | 83 |
| Local Start Time (s) | 17.7 | 29.7 | 67.7 | 87.7 | 17.7 | 37.7 | 5.7 | 67.7 |
| Local Yield (s) | 23.7 | 61.7 | 81.7 | 11.8 | 31.7 | 62.4 | 11.7 | 0 |
| Local Yield 170(s) | 23.7 | 50.7 | 81.7 | 11.8 | 31.7 | 62.4 | 11.7 | 96 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 100 |
| Offset: 107 (89%), Referenced to phase 4:WBTL and 8:EBTL, Start of Yellow | |

Splits and Phases: 16: 91st Street & Bell Rd





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 3 | 1134 | 49 | 34 | 684 | 0 | 142 | 22 | 57 | 1 | 9 | 18 |
| Future Volume (veh/h) | 3 | 1134 | 49 | 34 | 684 | 0 | 142 | 22 | 57 | 1 | 9 | 18 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 4 | 1400 | 41 | 40 | 805 | 0 | 241 | 37 | 68 | 1 | 10 | 10 |
| Peak Hour Factor | 0.81 | 0.81 | 0.81 | 0.85 | 0.85 | 0.85 | 0.59 | 0.59 | 0.59 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 251 | 1549 | 691 | 421 | 2203 | 0 | 342 | 325 | 275 | 138 | 109 | 101 |
| Arrive On Green | 0.01 | 0.44 | 0.44 | 0.19 | 0.62 | 0.00 | 0.12 | 0.17 | 0.17 | 0.00 | 0.06 | 0.06 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3647 | 0 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 4 | 1400 | 41 | 40 | 805 | 0 | 241 | 37 | 68 | 1 | 10 | 10 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 0 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 0.2 | 44.0 | 1.1 | 0.0 | 13.4 | 0.0 | 14.0 | 2.0 | 2.9 | 0.1 | 0.6 | 0.7 |
| Cycle Q Clear(g_c), s | 0.2 | 44.0 | 1.1 | 0.0 | 13.4 | 0.0 | 14.0 | 2.0 | 2.9 | 0.1 | 0.6 | 0.7 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 251 | 1549 | 691 | 421 | 2203 | 0 | 342 | 325 | 275 | 138 | 109 | 101 |
| V/C Ratio(X) | 0.02 | 0.90 | 0.06 | 0.10 | 0.37 | 0.00 | 0.70 | 0.11 | 0.25 | 0.01 | 0.09 | 0.10 |
| Avail Cap(c_a), veh/h | 450 | 1549 | 691 | 421 | 2203 | 0 | 342 | 499 | 423 | 224 | 385 | 335 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.5 | 31.5 | 7.5 | 37.7 | 11.2 | 0.0 | 45.6 | 41.8 | 17.9 | 53.1 | 53.5 | 53.0 |
| Incr Delay (d2), s/veh | 0.0 | 9.0 | 0.2 | 0.0 | 0.5 | 0.0 | 6.4 | 0.2 | 0.5 | 0.0 | 0.1 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 0.1 | 26.8 | 1.2 | 1.7 | 8.5 | 0.0 | 11.7 | 1.7 | 3.1 | 0.1 | 0.5 | 0.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 22.5 | 40.6 | 7.7 | 37.7 | 11.7 | 0.0 | 52.0 | 42.0 | 18.4 | 53.1 | 53.6 | 53.1 |
| LnGrp LOS | C | D | A | D | B | A | D | D | B | D | D | D |
| Approach Vol, veh/h | | 1445 | | | 845 | | | 346 | | | 21 | |
| Approach Delay, s/veh | | 39.6 | | | 12.9 | | | 44.3 | | | 53.4 | |
| Approach LOS | | D | | | B | | | D | | | D | |

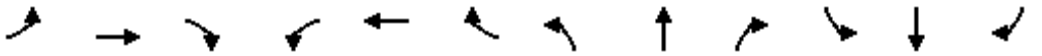
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.2 | 26.8 | 6.6 | 80.4 | 20.0 | 13.0 | 29.0 | 58.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 6.0 | * 6 | 6.0 | * 6 | 6.0 | 5.7 |
| Max Green Setting (Gmax), s | 6.0 | 32.0 | 14.0 | * 44 | 14.0 | * 25 | 6.0 | 52.3 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 4.9 | 2.2 | 15.4 | 16.0 | 2.7 | 2.0 | 46.0 |
| Green Ext Time (p_c), s | 0.0 | 0.4 | 0.0 | 3.5 | 0.0 | 0.0 | 0.0 | 3.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 31.8 |
| HCM 6th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



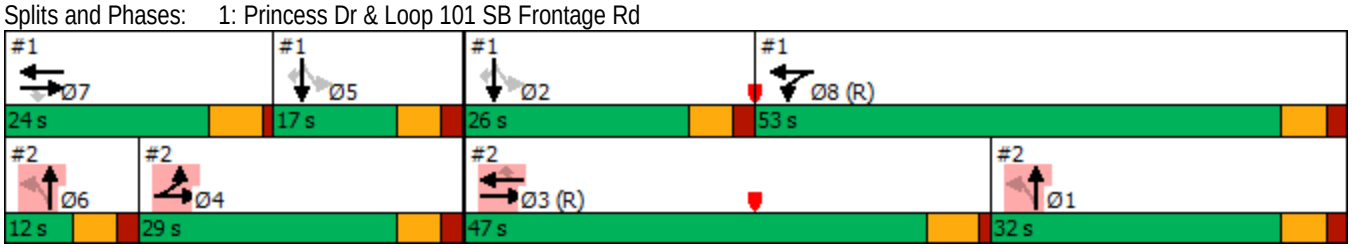
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 403 | 367 | 1117 | 306 | 0 | 0 | 0 | 0 | 402 | 388 | 67 |
| Future Volume (vph) | 0 | 403 | 367 | 1117 | 306 | 0 | 0 | 0 | 0 | 402 | 388 | 67 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 140 | | 245 | 240 | | 0 | 0 | | 0 | 355 | | 355 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 2 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 0.88 | 0.94 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.998 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.987 | |
| Satd. Flow (prot) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3156 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.987 | |
| Satd. Flow (perm) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3156 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 188 | | | | | | | | 1 | 185 |
| Link Speed (mph) | | 35 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 1345 | | | 409 | | | 1261 | | | 718 | |
| Travel Time (s) | | 26.2 | | | 6.2 | | | 28.7 | | | 10.9 | |
| Peak Hour Factor | 0.25 | 0.85 | 0.85 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 474 | 432 | 1241 | 340 | 0 | 0 | 0 | 0 | 447 | 431 | 74 |
| Shared Lane Traffic (%) | | | | | | | | | | 35% | | 10% |
| Lane Group Flow (vph) | 0 | 474 | 432 | 1241 | 340 | 0 | 0 | 0 | 0 | 291 | 594 | 67 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Right | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 36 | | | 36 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 2 5 | |
| Permitted Phases | | | 7 | | | | | | | 2 5 | | 2 5 |

| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | | | | | | |
| Future Volume (vph) | | | | | | |
| Ideal Flow (vphpl) | | | | | | |
| Storage Length (ft) | | | | | | |
| Storage Lanes | | | | | | |
| Taper Length (ft) | | | | | | |
| Lane Util. Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | | | | | | |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | | | | | | |
| Right Turn on Red | | | | | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | | | | | |
| Link Distance (ft) | | | | | | |
| Travel Time (s) | | | | | | |
| Peak Hour Factor | | | | | | |
| Adj. Flow (vph) | | | | | | |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | | | | | | |
| Enter Blocked Intersection | | | | | | |
| Lane Alignment | | | | | | |
| Median Width(ft) | | | | | | |
| Link Offset(ft) | | | | | | |
| Crosswalk Width(ft) | | | | | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | | | | | | |
| Turning Speed (mph) | | | | | | |
| Number of Detectors | | | | | | |
| Detector Template | | | | | | |
| Leading Detector (ft) | | | | | | |
| Trailing Detector (ft) | | | | | | |
| Detector 1 Position(ft) | | | | | | |
| Detector 1 Size(ft) | | | | | | |
| Detector 1 Type | | | | | | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | | | | | | |
| Detector 1 Queue (s) | | | | | | |
| Detector 1 Delay (s) | | | | | | |
| Detector 2 Position(ft) | | | | | | |
| Detector 2 Size(ft) | | | | | | |
| Detector 2 Type | | | | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | | | | |
| Turn Type | | | | | | |
| Protected Phases | 1 | 2 | 3 | 4 | 5 | 6 |
| Permitted Phases | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 7 | 7 | 8 | 7 8 | | | | | 2 5 | 2 5 | 2 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 7.0 | 7.0 | 5.0 | | | | | | | | |
| Minimum Split (s) | | 26.7 | 26.7 | 11.0 | | | | | | | | |
| Total Split (s) | | 24.0 | 24.0 | 53.0 | | | | | | | | |
| Total Split (%) | | 20.0% | 20.0% | 44.2% | | | | | | | | |
| Maximum Green (s) | | 18.3 | 18.3 | 47.0 | | | | | | | | |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | | | | | | | | |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | | | | | | | | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | | | | | | | | |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | | | | | | | | |
| Lead/Lag | | Lead | Lead | Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | | | | | | | | |
| Recall Mode | | None | None | C-Min | | | | | | | | |
| Walk Time (s) | | 4.0 | 4.0 | | | | | | | | | |
| Flash Dont Walk (s) | | 17.0 | 17.0 | | | | | | | | | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | | | | | | | | |
| Act Effct Green (s) | | 16.7 | 16.7 | 52.2 | 74.9 | | | | | 33.4 | 33.4 | 33.4 |
| Actuated g/C Ratio | | 0.14 | 0.14 | 0.44 | 0.62 | | | | | 0.28 | 0.28 | 0.28 |
| v/c Ratio | | 0.67 | 0.79 | 0.57 | 0.15 | | | | | 0.65 | 0.68 | 0.13 |
| Control Delay | | 53.8 | 38.5 | 13.1 | 6.3 | | | | | 45.3 | 42.4 | 0.5 |
| Queue Delay | | 0.0 | 0.0 | 2.2 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 53.8 | 38.5 | 15.3 | 6.3 | | | | | 45.3 | 42.4 | 0.5 |
| LOS | | D | D | B | A | | | | | D | D | A |
| Approach Delay | | 46.5 | | | 13.4 | | | | | | 40.4 | |
| Approach LOS | | D | | | B | | | | | | D | |

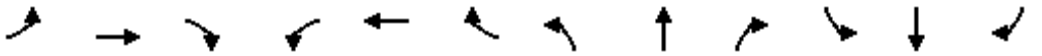
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 23 (19%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 130 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.79 | | | |
| Intersection Signal Delay: 29.6 | | Intersection LOS: C | |
| Intersection Capacity Utilization 70.2% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Princess Dr & Loop 101 SB Frontage Rd



| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Detector Phase | | | | | | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 10.0 | 5.0 | 7.0 | 1.0 |
| Minimum Split (s) | 13.0 | 7.0 | 26.7 | 11.0 | 50.0 | 7.0 |
| Total Split (s) | 32.0 | 26.0 | 47.0 | 29.0 | 17.0 | 12.0 |
| Total Split (%) | 27% | 22% | 39% | 24% | 14% | 10% |
| Maximum Green (s) | 26.0 | 20.0 | 41.3 | 23.0 | 11.0 | 6.0 |
| Yellow Time (s) | 4.0 | 4.0 | 4.7 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | | | | | |
| Total Lost Time (s) | | | | | | |
| Lead/Lag | Lag | Lead | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 5.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | C-Min | None | None | None |
| Walk Time (s) | | | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | | 17.0 | | 40.0 | |
| Pedestrian Calls (#/hr) | | | 0 | | 0 | |
| Act Effct Green (s) | | | | | | |
| Actuated g/C Ratio | | | | | | |
| v/c Ratio | | | | | | |
| Control Delay | | | | | | |
| Queue Delay | | | | | | |
| Total Delay | | | | | | |
| LOS | | | | | | |
| Approach Delay | | | | | | |
| Approach LOS | | | | | | |

| Intersection Summary |
|---|



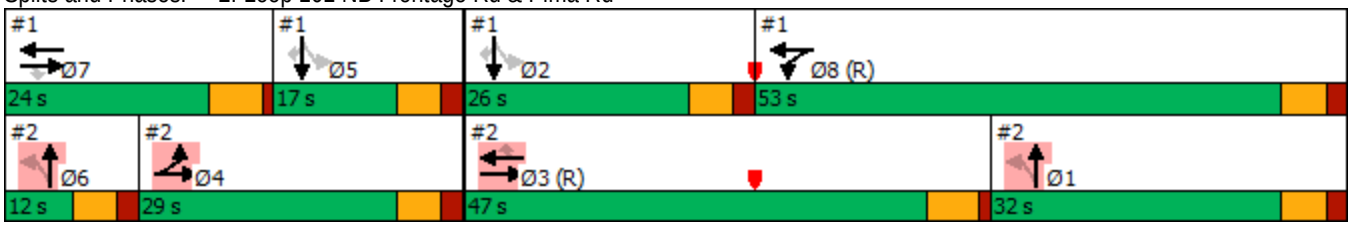
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 236 | 576 | 0 | 0 | 1251 | 464 | 173 | 561 | 1124 | 0 | 0 | 0 |
| Future Volume (vph) | 236 | 576 | 0 | 0 | 1251 | 464 | 173 | 561 | 1124 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 265 | | 0 | 350 | | 285 | 275 | | 275 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.81 | 1.00 | 0.91 | 0.91 | 0.88 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.999 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3387 | 2787 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.999 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3387 | 2787 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 188 | | | 1014 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 409 | | | 1059 | | | 1024 | | | 527 | |
| Travel Time (s) | | 6.2 | | | 16.0 | | | 15.5 | | | 12.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 262 | 640 | 0 | 0 | 1390 | 516 | 192 | 623 | 1249 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 10% | | | | | |
| Lane Group Flow (vph) | 262 | 640 | 0 | 0 | 1390 | 516 | 173 | 642 | 1249 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | L NA | Right | Left | Left | Right | Left | Left | R NA | Left | Left | Right |
| Median Width(ft) | | 24 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | Free | | | |
| Protected Phases | 4 | 3 4 | | | 3 | | | 1 6 | | | | |
| Permitted Phases | | | | | | 3 | 1 6 | | Free | | | |

| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 | Ø8 |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | | | | | | |
| Future Volume (vph) | | | | | | |
| Ideal Flow (vphpl) | | | | | | |
| Storage Length (ft) | | | | | | |
| Storage Lanes | | | | | | |
| Taper Length (ft) | | | | | | |
| Lane Util. Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | | | | | | |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | | | | | | |
| Right Turn on Red | | | | | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | | | | | |
| Link Distance (ft) | | | | | | |
| Travel Time (s) | | | | | | |
| Peak Hour Factor | | | | | | |
| Adj. Flow (vph) | | | | | | |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | | | | | | |
| Enter Blocked Intersection | | | | | | |
| Lane Alignment | | | | | | |
| Median Width(ft) | | | | | | |
| Link Offset(ft) | | | | | | |
| Crosswalk Width(ft) | | | | | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | | | | | | |
| Turning Speed (mph) | | | | | | |
| Number of Detectors | | | | | | |
| Detector Template | | | | | | |
| Leading Detector (ft) | | | | | | |
| Trailing Detector (ft) | | | | | | |
| Detector 1 Position(ft) | | | | | | |
| Detector 1 Size(ft) | | | | | | |
| Detector 1 Type | | | | | | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | | | | | | |
| Detector 1 Queue (s) | | | | | | |
| Detector 1 Delay (s) | | | | | | |
| Detector 2 Position(ft) | | | | | | |
| Detector 2 Size(ft) | | | | | | |
| Detector 2 Type | | | | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | | | | |
| Turn Type | | | | | | |
| Protected Phases | 1 | 2 | 5 | 6 | 7 | 8 |
| Permitted Phases | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 4 | 3 4 | | | 3 | 3 | 1 6 | 1 6 | | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 10.0 | 10.0 | | | | | | |
| Minimum Split (s) | 11.0 | | | | 26.7 | 26.7 | | | | | | |
| Total Split (s) | 29.0 | | | | 47.0 | 47.0 | | | | | | |
| Total Split (%) | 24.2% | | | | 39.2% | 39.2% | | | | | | |
| Maximum Green (s) | 23.0 | | | | 41.3 | 41.3 | | | | | | |
| Yellow Time (s) | 4.0 | | | | 4.7 | 4.7 | | | | | | |
| All-Red Time (s) | 2.0 | | | | 1.0 | 1.0 | | | | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | 0.0 | | | | | | |
| Total Lost Time (s) | 6.0 | | | | 5.7 | 5.7 | | | | | | |
| Lead/Lag | Lag | | | | Lead | Lead | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 5.0 | 5.0 | | | | | | |
| Recall Mode | None | | | | C-Min | C-Min | | | | | | |
| Walk Time (s) | | | | | 4.0 | 4.0 | | | | | | |
| Flash Dont Walk (s) | | | | | 17.0 | 17.0 | | | | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | 0 | | | | | | |
| Act Effct Green (s) | 24.3 | 72.7 | | | 42.3 | 42.3 | 35.6 | 35.6 | 120.0 | | | |
| Actuated g/C Ratio | 0.20 | 0.61 | | | 0.35 | 0.35 | 0.30 | 0.30 | 1.00 | | | |
| v/c Ratio | 0.73 | 0.30 | | | 0.52 | 0.76 | 0.36 | 0.64 | 0.45 | | | |
| Control Delay | 45.5 | 3.2 | | | 27.6 | 23.8 | 35.1 | 39.6 | 0.5 | | | |
| Queue Delay | 0.0 | 0.4 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 45.5 | 3.6 | | | 27.6 | 23.8 | 35.1 | 39.6 | 0.5 | | | |
| LOS | D | A | | | C | C | D | D | A | | | |
| Approach Delay | | 15.8 | | | 26.6 | | | 15.6 | | | | |
| Approach LOS | | B | | | C | | | B | | | | |

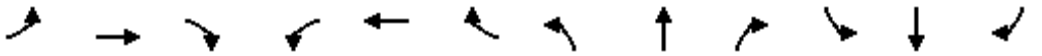
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 23 (19%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 130 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.79 | | | |
| Intersection Signal Delay: 19.9 | | Intersection LOS: B | |
| Intersection Capacity Utilization 70.2% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 2: Loop 101 NB Frontage Rd & Pima Rd



| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 | Ø8 |
|---|---|---|---|---|---|---|
| Detector Phase | | | | | | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 7.0 | 1.0 | 7.0 | 5.0 |
| Minimum Split (s) | 13.0 | 7.0 | 50.0 | 7.0 | 26.7 | 11.0 |
| Total Split (s) | 32.0 | 26.0 | 17.0 | 12.0 | 24.0 | 53.0 |
| Total Split (%) | 27% | 22% | 14% | 10% | 20% | 44% |
| Maximum Green (s) | 26.0 | 20.0 | 11.0 | 6.0 | 18.3 | 47.0 |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.7 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 |
| Lost Time Adjust (s) | | | | | | |
| Total Lost Time (s) | | | | | | |
| Lead/Lag | Lag | Lead | Lag | Lead | Lead | Lag |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | None | None | None | C-Min |
| Walk Time (s) | | | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | | 40.0 | | 17.0 | |
| Pedestrian Calls (#/hr) | | | 0 | | 0 | |
| Act Effct Green (s) | | | | | | |
| Actuated g/C Ratio | | | | | | |
| v/c Ratio | | | | | | |
| Control Delay | | | | | | |
| Queue Delay | | | | | | |
| Total Delay | | | | | | |
| LOS | | | | | | |
| Approach Delay | | | | | | |
| Approach LOS | | | | | | |

| Intersection Summary |
|---|



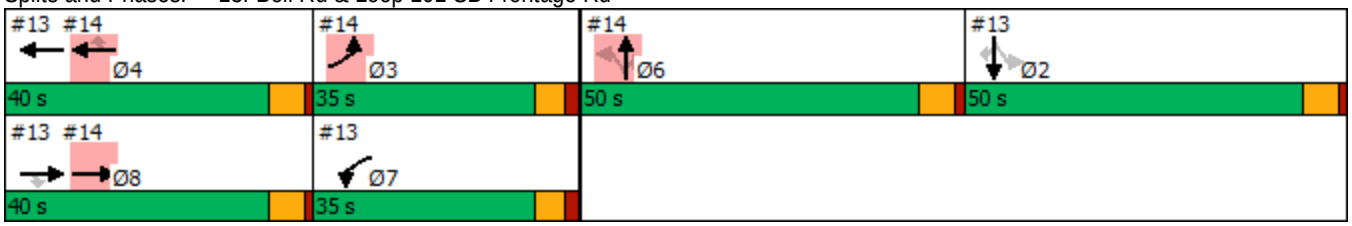
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 366 | 219 | 612 | 366 | 0 | 0 | 0 | 0 | 399 | 162 | 12 |
| Future Volume (vph) | 0 | 366 | 219 | 612 | 366 | 0 | 0 | 0 | 0 | 399 | 162 | 12 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 240 | | 315 | 220 | | 0 | 0 | | 0 | 385 | | 385 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.999 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.973 | |
| Satd. Flow (prot) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3114 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.973 | |
| Satd. Flow (perm) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3114 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 243 | | | | | | | | | 92 |
| Link Speed (mph) | | 45 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 824 | | | 389 | | | 598 | | | 1243 | |
| Travel Time (s) | | 12.5 | | | 5.9 | | | 13.6 | | | 18.8 | |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.90 | 0.85 | 0.25 | 0.25 | 0.25 | 0.25 | 0.85 | 0.85 | 0.80 |
| Adj. Flow (vph) | 0 | 407 | 243 | 680 | 431 | 0 | 0 | 0 | 0 | 469 | 191 | 15 |
| Shared Lane Traffic (%) | | | | | | | | | | 50% | | 10% |
| Lane Group Flow (vph) | 0 | 407 | 243 | 680 | 431 | 0 | 0 | 0 | 0 | 234 | 428 | 13 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | | | | | 2 | |
| Permitted Phases | | | 8 | | | | | | | 2 | | 2 |

| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 3 | 6 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 8 | 8 | 7 | 4 | | | | | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 10.0 | 10.0 | 5.0 | 10.0 | | | | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | | 35.7 | 35.7 | 11.0 | 39.7 | | | | | 50.9 | 50.9 | 50.9 |
| Total Split (s) | | 40.0 | 40.0 | 35.0 | 40.0 | | | | | 50.0 | 50.0 | 50.0 |
| Total Split (%) | | 22.9% | 22.9% | 20.0% | 22.9% | | | | | 28.6% | 28.6% | 28.6% |
| Maximum Green (s) | | 34.3 | 34.3 | 29.0 | 34.3 | | | | | 44.1 | 44.1 | 44.1 |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | 4.7 | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | 1.0 | | | | | 1.2 | 1.2 | 1.2 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | 5.7 | | | | | 5.9 | 5.9 | 5.9 |
| Lead/Lag | | Lead | Lead | Lag | Lead | | | | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | 2.0 | 2.0 | 2.0 |
| Recall Mode | | Min | Min | None | None | | | | | None | None | None |
| Walk Time (s) | | 7.0 | 7.0 | | 8.0 | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 23.0 | 23.0 | | 26.0 | | | | | 38.0 | 38.0 | 38.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 34.6 | 34.6 | 29.3 | 26.0 | | | | | 27.1 | 27.1 | 27.1 |
| Actuated g/C Ratio | | 0.23 | 0.23 | 0.19 | 0.17 | | | | | 0.18 | 0.18 | 0.18 |
| v/c Ratio | | 0.35 | 0.44 | 1.02 | 0.71 | | | | | 0.81 | 0.77 | 0.04 |
| Control Delay | | 52.0 | 8.7 | 102.5 | 33.8 | | | | | 82.1 | 69.1 | 0.2 |
| Queue Delay | | 0.4 | 0.0 | 28.0 | 0.1 | | | | | 0.6 | 0.2 | 0.0 |
| Total Delay | | 52.3 | 8.7 | 130.6 | 33.9 | | | | | 82.6 | 69.3 | 0.2 |
| LOS | | D | A | F | C | | | | | F | E | A |
| Approach Delay | | 36.0 | | | 93.1 | | | | | | 72.6 | |
| Approach LOS | | D | | | F | | | | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 151.4 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.02 | | | |
| Intersection Signal Delay: 72.2 | | Intersection LOS: E | |
| Intersection Capacity Utilization 56.5% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 13: Bell Rd & Loop 101 SB Frontage Rd



| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 5.0 | 7.0 |
| Minimum Split (s) | 11.0 | 48.0 |
| Total Split (s) | 35.0 | 50.0 |
| Total Split (%) | 20% | 29% |
| Maximum Green (s) | 29.0 | 44.0 |
| Yellow Time (s) | 4.0 | 4.7 |
| All-Red Time (s) | 2.0 | 1.3 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lead |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | Min | None |
| Walk Time (s) | | 7.0 |
| Flash Dont Walk (s) | | 35.0 |
| Pedestrian Calls (#/hr) | | 0 |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|

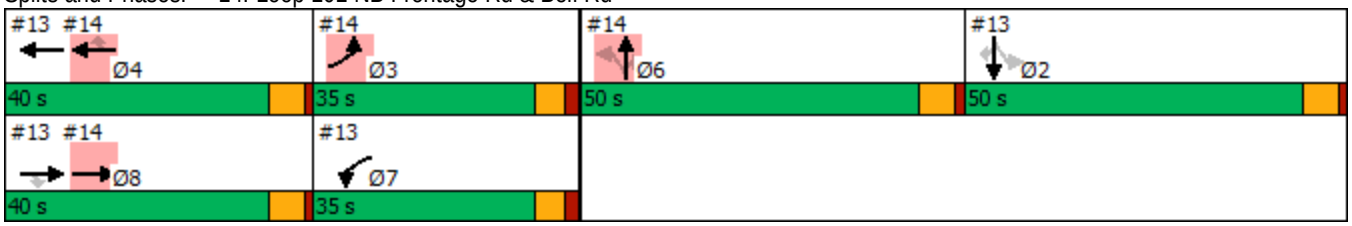
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 45 | 719 | 0 | 0 | 572 | 327 | 406 | 290 | 451 | 0 | 0 | 0 |
| Future Volume (vph) | 45 | 719 | 0 | 0 | 572 | 327 | 406 | 290 | 451 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 220 | | 0 | 235 | | 175 | 310 | | 310 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.86 | 1.00 | 0.91 | 0.86 | 0.91 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | 0.953 | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.991 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3026 | 1441 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.991 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3026 | 1441 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 363 | | 33 | 296 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 389 | | | 797 | | | 655 | | | 974 | |
| Travel Time (s) | | 5.9 | | | 12.1 | | | 9.9 | | | 22.1 | |
| Peak Hour Factor | 0.80 | 0.90 | 0.25 | 0.25 | 0.85 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 56 | 799 | 0 | 0 | 673 | 363 | 451 | 322 | 501 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 27% | | 41% | | | |
| Lane Group Flow (vph) | 56 | 799 | 0 | 0 | 673 | 363 | 329 | 649 | 296 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | Perm | | | |
| Protected Phases | 3 | 8 | | | 4 | | | 6 | | | | |
| Permitted Phases | | | | | | 4 | 6 | | 6 | | | |

| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 2 | 7 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 3 | 8 | | | 4 | 4 | 6 | 6 | 6 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | | | 10.0 | 10.0 | 7.0 | 7.0 | 7.0 | | | |
| Minimum Split (s) | 11.0 | 35.7 | | | 39.7 | 39.7 | 48.0 | 48.0 | 48.0 | | | |
| Total Split (s) | 35.0 | 40.0 | | | 40.0 | 40.0 | 50.0 | 50.0 | 50.0 | | | |
| Total Split (%) | 20.0% | 22.9% | | | 22.9% | 22.9% | 28.6% | 28.6% | 28.6% | | | |
| Maximum Green (s) | 29.0 | 34.3 | | | 34.3 | 34.3 | 44.0 | 44.0 | 44.0 | | | |
| Yellow Time (s) | 4.0 | 4.7 | | | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 2.0 | 1.0 | | | 1.0 | 1.0 | 1.3 | 1.3 | 1.3 | | | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 6.0 | 5.7 | | | 5.7 | 5.7 | 6.0 | 6.0 | 6.0 | | | |
| Lead/Lag | Lag | Lead | | | Lead | Lead | Lead | Lead | Lead | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Recall Mode | Min | Min | | | None | None | None | None | None | | | |
| Walk Time (s) | | 7.0 | | | 8.0 | 8.0 | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | 23.0 | | | 26.0 | 26.0 | 35.0 | 35.0 | 35.0 | | | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 37.9 | 34.6 | | | 26.0 | 26.0 | 36.6 | 36.6 | 36.6 | | | |
| Actuated g/C Ratio | 0.25 | 0.23 | | | 0.17 | 0.17 | 0.24 | 0.24 | 0.24 | | | |
| v/c Ratio | 0.13 | 0.99 | | | 0.61 | 0.63 | 0.85 | 0.86 | 0.52 | | | |
| Control Delay | 42.8 | 52.4 | | | 60.8 | 10.5 | 75.5 | 64.8 | 8.2 | | | |
| Queue Delay | 0.0 | 3.4 | | | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 42.8 | 55.7 | | | 61.7 | 10.5 | 75.5 | 64.8 | 8.2 | | | |
| LOS | D | E | | | E | B | E | E | A | | | |
| Approach Delay | | 54.9 | | | 43.8 | | | 54.4 | | | | |
| Approach LOS | | D | | | D | | | D | | | | |

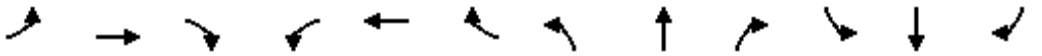
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 151.4 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.02 | | | |
| Intersection Signal Delay: 51.1 | | Intersection LOS: D | |
| Intersection Capacity Utilization 56.5% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Loop 101 NB Frontage Rd & Bell Rd



| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 7.0 | 5.0 |
| Minimum Split (s) | 50.9 | 11.0 |
| Total Split (s) | 50.0 | 35.0 |
| Total Split (%) | 29% | 20% |
| Maximum Green (s) | 44.1 | 29.0 |
| Yellow Time (s) | 4.7 | 4.0 |
| All-Red Time (s) | 1.2 | 2.0 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lag |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | None | None |
| Walk Time (s) | 7.0 | |
| Flash Dont Walk (s) | 38.0 | |
| Pedestrian Calls (#/hr) | 0 | |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1592 | 847 | 352 | 1183 | 0 | 0 | 0 | 0 | 766 | 726 | 336 |
| Future Volume (vph) | 0 | 1592 | 847 | 352 | 1183 | 0 | 0 | 0 | 0 | 766 | 726 | 336 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 185 | | 0 | 0 | | 0 | 0 | | 0 | 250 | | 250 |
| Storage Lanes | 2 | | 1 | 2 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.81 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 | 0.95 | 1.00 |
| Ped Bike Factor | | | 0.99 | 1.00 | | | | | | | | 0.99 |
| Frt | | | 0.850 | | | | | | | | | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 7192 | 1482 | 3019 | 4940 | 0 | 0 | 0 | 0 | 3183 | 3610 | 1538 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 7192 | 1463 | 3018 | 4940 | 0 | 0 | 0 | 0 | 3183 | 3610 | 1517 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 422 | | | | | | | | | 172 |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 45 | |
| Link Distance (ft) | | 675 | | | 322 | | | 835 | | | 832 | |
| Travel Time (s) | | 10.2 | | | 4.9 | | | 12.7 | | | 12.6 | |
| Confl. Peds. (#/hr) | 1 | | 1 | 1 | | | | | | | | 1 |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.88 | 0.88 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 0% | 7% | 9% | 16% | 5% | 0% | 0% | 0% | 0% | 10% | 0% | 5% |
| Adj. Flow (vph) | 0 | 1769 | 941 | 400 | 1344 | 0 | 0 | 0 | 0 | 851 | 807 | 373 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 1769 | 941 | 400 | 1344 | 0 | 0 | 0 | 0 | 851 | 807 | 373 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |

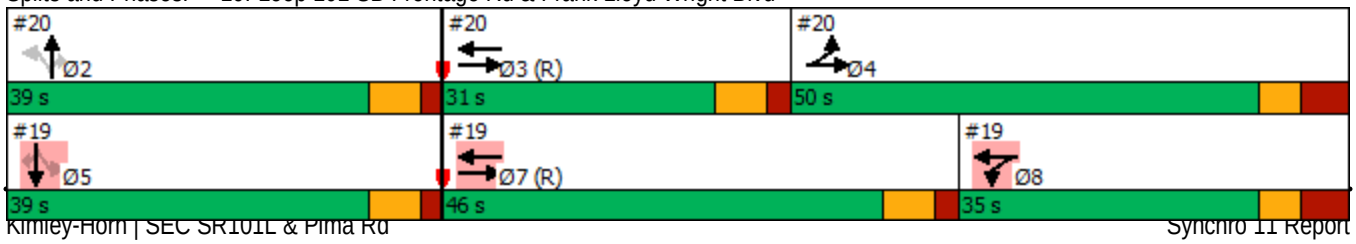
| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | | NA | Free | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 5 | |
| Permitted Phases | | | Free | | | | | | | 5 | | 5 |
| Detector Phase | | 7 | | 8 | 7 8 | | | | | 5 | 5 | 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 5.0 | | 6.0 | | | | | | 6.0 | 6.0 | 6.0 |
| Minimum Split (s) | | 24.8 | | 31.9 | | | | | | 29.7 | 29.7 | 29.7 |
| Total Split (s) | | 46.0 | | 35.0 | | | | | | 39.0 | 39.0 | 39.0 |
| Total Split (%) | | 38.3% | | 29.2% | | | | | | 32.5% | 32.5% | 32.5% |
| Maximum Green (s) | | 39.2 | | 26.7 | | | | | | 32.3 | 32.3 | 32.3 |
| Yellow Time (s) | | 4.7 | | 3.9 | | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 2.1 | | 4.4 | | | | | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.8 | | 8.3 | | | | | | 6.7 | 6.7 | 6.7 |
| Lead/Lag | | Lead | | Lag | | | | | | | | |
| Lead-Lag Optimize? | | Yes | | Yes | | | | | | | | |
| Vehicle Extension (s) | | 0.2 | | 0.2 | | | | | | 0.2 | 0.2 | 0.2 |
| Recall Mode | | C-Max | | None | | | | | | None | None | None |
| Walk Time (s) | | 7.0 | | | | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 11.0 | | | | | | | | 16.0 | 16.0 | 16.0 |
| Pedestrian Calls (#/hr) | | 0 | | | | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 42.6 | 120.0 | 19.4 | 70.3 | | | | | 36.2 | 36.2 | 36.2 |
| Actuated g/C Ratio | | 0.36 | 1.00 | 0.16 | 0.59 | | | | | 0.30 | 0.30 | 0.30 |
| v/c Ratio | | 0.69 | 0.64 | 0.82 | 0.46 | | | | | 0.89 | 0.74 | 0.65 |
| Control Delay | | 35.4 | 2.2 | 72.1 | 21.2 | | | | | 52.3 | 42.7 | 24.9 |
| Queue Delay | | 1.3 | 0.0 | 0.2 | 1.9 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 36.7 | 2.2 | 72.3 | 23.2 | | | | | 52.3 | 42.7 | 24.9 |
| LOS | | D | A | E | C | | | | | D | D | C |
| Approach Delay | | 24.7 | | | 34.4 | | | | | | 43.5 | |
| Approach LOS | | C | | | C | | | | | | D | |

**Intersection Summary**

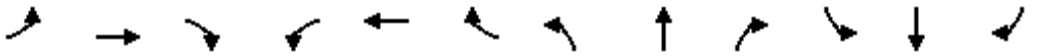
Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 33.2 Intersection LOS: C
Intersection Capacity Utilization 85.1% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 19: Loop 101 SB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 2 | 3 | 4 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.7 | 24.8 | 13.3 |
| Total Split (s) | 39.0 | 31.0 | 50.0 |
| Total Split (%) | 33% | 26% | 42% |
| Maximum Green (s) | 32.3 | 24.2 | 41.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | Yes | Yes |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|



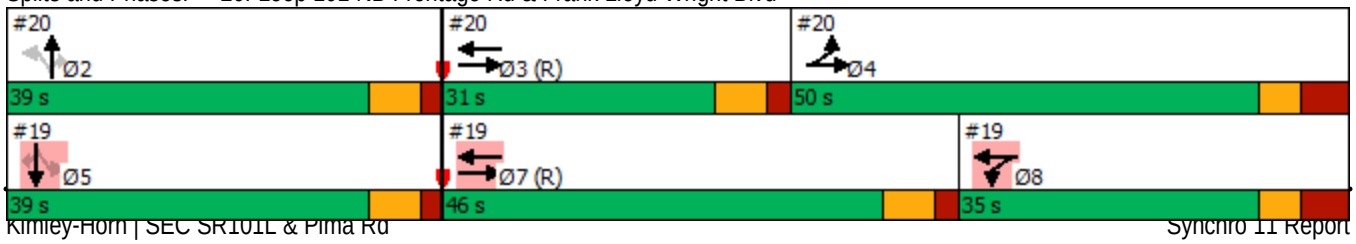
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 634 | 1724 | 0 | 0 | 787 | 945 | 749 | 600 | 146 | 0 | 0 | 0 |
| Future Volume (vph) | 634 | 1724 | 0 | 0 | 787 | 945 | 749 | 600 | 146 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 245 | | 150 | 250 | | 250 | 0 | | 0 |
| Storage Lanes | 2 | | 0 | 2 | | 2 | 2 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.81 | 0.88 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (prot) | 3183 | 4893 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (perm) | 3183 | 4893 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 582 | | | 172 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 45 | |
| Link Distance (ft) | | 322 | | | 1160 | | | 836 | | | 801 | |
| Travel Time (s) | | 4.9 | | | 17.6 | | | 12.7 | | | 12.1 | |
| Confl. Peds. (#/hr) | | | 1 | | | | | | | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.88 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Heavy Vehicles (%) | 10% | 6% | 0% | 0% | 6% | 14% | 2% | 0% | 2% | 0% | 0% | 0% |
| Adj. Flow (vph) | 704 | 1916 | 0 | 0 | 894 | 1050 | 832 | 667 | 162 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 704 | 1916 | 0 | 0 | 894 | 1050 | 832 | 667 | 162 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |

| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Prot | NA | | | NA | Free | Perm | NA | Perm | | | |
| Protected Phases | 4 | 3 4 | | | 3 | | | 2 | | | | |
| Permitted Phases | | | | | | Free | 2 | | 2 | | | |
| Detector Phase | 4 | 3 4 | | | 3 | | 2 | 2 | 2 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 5.0 | | 5.0 | 5.0 | 5.0 | | | |
| Minimum Split (s) | 13.3 | | | | 24.8 | | 24.7 | 24.7 | 24.7 | | | |
| Total Split (s) | 50.0 | | | | 31.0 | | 39.0 | 39.0 | 39.0 | | | |
| Total Split (%) | 41.7% | | | | 25.8% | | 32.5% | 32.5% | 32.5% | | | |
| Maximum Green (s) | 41.7 | | | | 24.2 | | 32.3 | 32.3 | 32.3 | | | |
| Yellow Time (s) | 3.9 | | | | 4.7 | | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 4.4 | | | | 2.1 | | 2.0 | 2.0 | 2.0 | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 8.3 | | | | 6.8 | | 6.7 | 6.7 | 6.7 | | | |
| Lead/Lag | Lag | | | | Lead | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 0.2 | | | | 0.2 | | 0.2 | 0.2 | 0.2 | | | |
| Recall Mode | None | | | | C-Max | | None | None | None | | | |
| Walk Time (s) | | | | | 7.0 | | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | | | | 11.0 | | 11.0 | 11.0 | 11.0 | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 34.4 | 70.3 | | | 27.6 | 120.0 | 36.2 | 36.2 | 36.2 | | | |
| Actuated g/C Ratio | 0.29 | 0.59 | | | 0.23 | 1.00 | 0.30 | 0.30 | 0.30 | | | |
| v/c Ratio | 0.77 | 0.67 | | | 0.54 | 0.42 | 0.80 | 0.43 | 0.27 | | | |
| Control Delay | 44.5 | 17.8 | | | 42.6 | 0.5 | 45.7 | 34.7 | 5.3 | | | |
| Queue Delay | 26.4 | 1.7 | | | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 71.0 | 19.5 | | | 43.4 | 0.5 | 45.7 | 34.7 | 5.3 | | | |
| LOS | E | B | | | D | A | D | C | A | | | |
| Approach Delay | | 33.3 | | | 20.2 | | | 37.3 | | | | |
| Approach LOS | | C | | | C | | | D | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.89 | | | |
| Intersection Signal Delay: 30.3 | | Intersection LOS: C | |
| Intersection Capacity Utilization 85.1% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 20: Loop 101 NB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 5 | 7 | 8 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 6.0 | 5.0 | 6.0 |
| Minimum Split (s) | 29.7 | 24.8 | 31.9 |
| Total Split (s) | 39.0 | 46.0 | 35.0 |
| Total Split (%) | 33% | 38% | 29% |
| Maximum Green (s) | 32.3 | 39.2 | 26.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | Yes | Yes |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 16.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|

# 2028 Total AM
# Traffic Capacity Analysis

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | ↑↑↑ | ↱ | | ↑↑↑ | | ↱ |
| Traffic Vol, veh/h | 1974 | 143 | 0 | 1830 | 0 | 4 |
| Future Vol, veh/h | 1974 | 143 | 0 | 1830 | 0 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2146 | 155 | 0 | 1989 | 0 | 4 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | - | - | - | 1073 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.92 |
| Pot Cap-1 Maneuver | - | - | 0 | - | 0 | 185 |
| Stage 1 | - | - | 0 | - | 0 | - |
| Stage 2 | - | - | 0 | - | 0 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 185 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 24.9 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBT |
|---|---|---|---|---|
| Capacity (veh/h) | 185 | - | - | - |
| HCM Lane V/C Ratio | 0.024 | - | - | - |
| HCM Control Delay (s) | 24.9 | - | - | - |
| HCM Lane LOS | C | - | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - |

| Phase Number | 2 | 4 | 5 | 6 |
|---|---|---|---|---|
| Movement | SBTL | WBL | SBL | NBT |
| Lead/Lag | | | Lead | Lag |
| Lead-Lag Optimize | | | Yes | Yes |
| Recall Mode | C-Max | Max | None | C-Max |
| Maximum Split (s) | 90 | 30 | 13 | 77 |
| Maximum Split (%) | 75.0% | 25.0% | 10.8% | 64.2% |
| Minimum Split (s) | 22.5 | 22.5 | 9.5 | 22.5 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1 | 1 | 1 | 1 |
| Minimum Initial (s) | 5 | 5 | 5 | 5 |
| Vehicle Extension (s) | 3 | 3 | 3 | 3 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 |
| Walk Time (s) | 7 | 7 | | 7 |
| Flash Dont Walk (s) | 11 | 11 | | 11 |
| Dual Entry | Yes | Yes | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes |
| Start Time (s) | 107 | 77 | 107 | 0 |
| End Time (s) | 77 | 107 | 0 | 77 |
| Yield/Force Off (s) | 72.5 | 102.5 | 115.5 | 72.5 |
| Yield/Force Off 170(s) | 61.5 | 91.5 | 115.5 | 61.5 |
| Local Start Time (s) | 107 | 77 | 107 | 0 |
| Local Yield (s) | 72.5 | 102.5 | 115.5 | 72.5 |
| Local Yield 170(s) | 61.5 | 91.5 | 115.5 | 61.5 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 60 |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of Green | |

Splits and Phases: 4: Pima Rd & Trailside View

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 69 | 19 | 1802 | 176 | 42 | 1686 |
| Future Volume (veh/h) | 69 | 19 | 1802 | 176 | 42 | 1686 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 92 | 25 | 1959 | 191 | 46 | 1833 |
| Peak Hour Factor | 0.75 | 0.75 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 379 | 337 | 3280 | 1018 | 196 | 3638 |
| Arrive On Green | 0.21 | 0.21 | 0.64 | 0.64 | 0.03 | 0.71 |
| Sat Flow, veh/h | 1781 | 1585 | 5274 | 1585 | 1781 | 5274 |
| Grp Volume(v), veh/h | 92 | 25 | 1959 | 191 | 46 | 1833 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1585 | 1702 | 1585 | 1781 | 1702 |
| Q Serve(g_s), s | 5.1 | 1.5 | 26.7 | 5.9 | 1.0 | 19.3 |
| Cycle Q Clear(g_c), s | 5.1 | 1.5 | 26.7 | 5.9 | 1.0 | 19.3 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 379 | 337 | 3280 | 1018 | 196 | 3638 |
| V/C Ratio(X) | 0.24 | 0.07 | 0.60 | 0.19 | 0.23 | 0.50 |
| Avail Cap(c_a), veh/h | 379 | 337 | 3280 | 1018 | 264 | 3638 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 39.2 | 37.8 | 12.5 | 8.7 | 10.4 | 7.7 |
| Incr Delay (d2), s/veh | 1.5 | 0.4 | 0.8 | 0.4 | 0.6 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 4.4 | 2.8 | 14.0 | 3.5 | 0.6 | 9.9 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 40.8 | 38.2 | 13.3 | 9.1 | 11.0 | 8.2 |
| LnGrp LOS | D | D | B | A | B | A |
| Approach Vol, veh/h | 117 | | 2150 | | | 1879 |
| Approach Delay, s/veh | 40.2 | | 12.9 | | | 8.3 |
| Approach LOS | D | | B | | | A |

| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 90.0 | | 30.0 | 8.4 | 81.6 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | 85.5 | | 25.5 | 8.5 | 72.5 |
| Max Q Clear Time (g_c+I1), s | | 21.3 | | 7.1 | 3.0 | 28.7 |
| Green Ext Time (p_c), s | | 22.0 | | 0.3 | 0.0 | 23.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.6 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 8 | 74 | 114 | 1 | 49 | 1 | 57 | 1 | 1 | 1 | 8 | 5 |
| Future Vol, veh/h | 8 | 74 | 114 | 1 | 49 | 1 | 57 | 1 | 1 | 1 | 8 | 5 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 125 | - | - | - | 150 | - | - | 160 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 10 | 93 | 143 | 1 | 61 | 1 | 71 | 1 | 1 | 1 | 10 | 6 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 190 | 159 | 13 | 277 | 162 | 2 | 16 | 0 | 0 | 2 | 0 | 0 |
| Stage 1 | 15 | 15 | - | 144 | 144 | - | - | - | - | - | - | - |
| Stage 2 | 175 | 144 | - | 133 | 18 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 770 | 733 | 1067 | 675 | 730 | 1082 | 1602 | - | - | 1620 | - | - |
| Stage 1 | 1005 | 883 | - | 859 | 778 | - | - | - | - | - | - | - |
| Stage 2 | 827 | 778 | - | 870 | 880 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 693 | 700 | 1067 | 508 | 697 | 1082 | 1602 | - | - | 1620 | - | - |
| Mov Cap-2 Maneuver | 693 | 700 | - | 508 | 697 | - | - | - | - | - | - | - |
| Stage 1 | 961 | 882 | - | 821 | 744 | - | - | - | - | - | - | - |
| Stage 2 | 724 | 744 | - | 674 | 879 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 9.8 | 10.7 | 7.1 | 0.5 |
| HCM LOS | A | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1602 | - | - | 699 | 1067 | 697 | 1620 | - | - |
| HCM Lane V/C Ratio | 0.044 | - | - | 0.147 | 0.134 | 0.091 | 0.001 | - | - |
| HCM Control Delay (s) | 7.4 | - | - | 11 | 8.9 | 10.7 | 7.2 | - | - |
| HCM Lane LOS | A | - | - | B | A | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.5 | 0.5 | 0.3 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 55 | 599 | 96 | 0 | 0 |
| Future Vol, veh/h | 0 | 55 | 599 | 96 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | 100 | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 25 | 25 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 60 | 651 | 104 | 0 | 0 |

| Major/Minor | Minor1 | | Major1 | |
|---|---|---|---|---|
| Conflicting Flow All | - | 326 | 0 | 0 |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |
| Critical Hdwy | - | 6.94 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - |
| Follow-up Hdwy | - | 3.32 | - | - |
| Pot Cap-1 Maneuver | 0 | 670 | - | - |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 0 | - | - | - |
| Platoon blocked, % | | | - | - |
| Mov Cap-1 Maneuver | - | 670 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |

| Approach | WB | NB |
|---|---|---|
| HCM Control Delay, s | 10.9 | 0 |
| HCM LOS | B | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 |
|---|---|---|---|
| Capacity (veh/h) | - | - | 670 |
| HCM Lane V/C Ratio | - | - | 0.089 |
| HCM Control Delay (s) | - | - | 10.9 |
| HCM Lane LOS | - | - | B |
| HCM 95th %tile Q(veh) | - | - | 0.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 10 | 32 | 12 | 47 | 8 |
| Future Vol, veh/h | 0 | 10 | 32 | 12 | 47 | 8 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 150 | 0 | 50 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 11 | 35 | 13 | 51 | 9 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 139 | 56 | 60 | 0 | - | 0 |
| Stage 1 | 56 | - | - | - | - | - |
| Stage 2 | 83 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 854 | 1011 | 1544 | - | - | - |
| Stage 1 | 967 | - | - | - | - | - |
| Stage 2 | 940 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 834 | 1011 | 1544 | - | - | - |
| Mov Cap-2 Maneuver | 811 | - | - | - | - | - |
| Stage 1 | 945 | - | - | - | - | - |
| Stage 2 | 940 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.6 | 5.4 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1544 | - | - | 1011 | - | - |
| HCM Lane V/C Ratio | 0.023 | - | - | 0.011 | - | - |
| HCM Control Delay (s) | 7.4 | - | 0 | 8.6 | - | - |
| HCM Lane LOS | A | - | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 12 | 1565 | 58 | 24 | 1056 | 1 | 0 | 0 | 14 | 0 | 0 | 15 |
| Future Vol, veh/h | 12 | 1565 | 58 | 24 | 1056 | 1 | 0 | 0 | 14 | 0 | 0 | 15 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 150 | - | 150 | 60 | - | - | - | - | 0 | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 89 | 89 | 89 | 83 | 83 | 83 | 79 | 79 | 79 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 13 | 1758 | 65 | 29 | 1272 | 1 | 0 | 0 | 18 | 0 | 0 | 16 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1273 | 0 | 0 | 1823 | 0 | 0 | - | - | 879 | - | - | 637 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | - | - | 6.94 | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | - | - | 3.32 | - | - | 3.32 |
| Pot Cap-1 Maneuver | 541 | - | - | 332 | - | - | 0 | 0 | 291 | 0 | 0 | 420 |
| Stage 1 | - | - | - | - | - | - | 0 | 0 | - | 0 | 0 | - |
| Stage 2 | - | - | - | - | - | - | 0 | 0 | - | 0 | 0 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 541 | - | - | 332 | - | - | - | - | 291 | - | - | 420 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

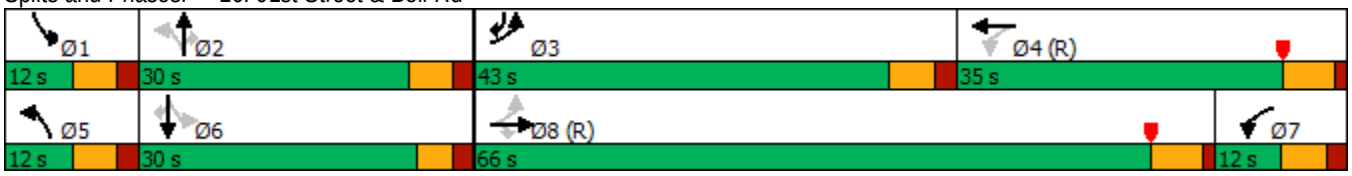
| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 0.4 | 18.2 | 13.9 |
| HCM LOS | | | C | B |

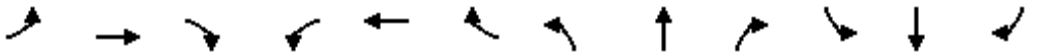
| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 291 | 541 | - | - | 332 | - | - | 420 |
| HCM Lane V/C Ratio | 0.061 | 0.025 | - | - | 0.087 | - | - | 0.039 |
| HCM Control Delay (s) | 18.2 | 11.8 | - | - | 16.9 | - | - | 13.9 |
| HCM Lane LOS | C | B | - | - | C | - | - | B |
| HCM 95th %tile Q(veh) | 0.2 | 0.1 | - | - | 0.3 | - | - | 0.1 |

| Phase Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Movement | SBL | NBTL | EBL | WBTL | NBL | SBTL | WBL | EBTL |
| Lead/Lag | Lead | Lag | Lead | Lag | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize | Yes | Yes | Yes | Yes | Yes | Yes | | |
| Recall Mode | None | None | None | C-Max | None | None | None | C-Max |
| Maximum Split (s) | 12 | 30 | 43 | 35 | 12 | 30 | 12 | 66 |
| Maximum Split (%) | 10.0% | 25.0% | 35.8% | 29.2% | 10.0% | 25.0% | 10.0% | 55.0% |
| Minimum Split (s) | 11 | 24 | 11 | 22.5 | 11 | 37.3 | 11 | 38.7 |
| Yellow Time (s) | 4 | 4 | 4 | 4.7 | 4 | 3.3 | 4 | 4.7 |
| All-Red Time (s) | 2 | 2 | 2 | 1.2 | 2 | 2 | 2 | 1 |
| Minimum Initial (s) | 5 | 5 | 5 | 10 | 5 | 7 | 5 | 10 |
| Vehicle Extension (s) | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 2 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Walk Time (s) | | 7 | | | | 8 | | 8 |
| Flash Dont Walk (s) | | 11 | | | | 24 | | 24 |
| Dual Entry | No | Yes | No | Yes | No | Yes | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Start Time (s) | 1.7 | 13.7 | 43.7 | 86.7 | 1.7 | 13.7 | 109.7 | 43.7 |
| End Time (s) | 13.7 | 43.7 | 86.7 | 1.7 | 13.7 | 43.7 | 1.7 | 109.7 |
| Yield/Force Off (s) | 7.7 | 37.7 | 80.7 | 115.8 | 7.7 | 38.4 | 115.7 | 104 |
| Yield/Force Off 170(s) | 7.7 | 26.7 | 80.7 | 115.8 | 7.7 | 14.4 | 115.7 | 80 |
| Local Start Time (s) | 17.7 | 29.7 | 59.7 | 102.7 | 17.7 | 29.7 | 5.7 | 59.7 |
| Local Yield (s) | 23.7 | 53.7 | 96.7 | 11.8 | 23.7 | 54.4 | 11.7 | 0 |
| Local Yield 170(s) | 23.7 | 42.7 | 96.7 | 11.8 | 23.7 | 30.4 | 11.7 | 96 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 130 |
| Offset: 104 (87%), Referenced to phase 4:WBTL and 8:EBTL, Start of Yellow | |

Splits and Phases: 16: 91st Street & Bell Rd





| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 408 | 1044 | 114 | 28 | 971 | 9 | 57 | 8 | 13 | 3 | 16 | 47 |
| Future Volume (veh/h) | 408 | 1044 | 114 | 28 | 971 | 9 | 57 | 8 | 13 | 3 | 16 | 47 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 469 | 1200 | 92 | 33 | 1142 | 11 | 88 | 12 | 14 | 3 | 17 | 25 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.85 | 0.85 | 0.85 | 0.65 | 0.65 | 0.65 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 502 | 1786 | 796 | 491 | 1620 | 16 | 209 | 185 | 157 | 140 | 99 | 477 |
| Arrive On Green | 0.25 | 0.50 | 0.50 | 0.20 | 0.45 | 0.45 | 0.05 | 0.10 | 0.10 | 0.00 | 0.05 | 0.05 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3606 | 35 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 469 | 1200 | 92 | 33 | 563 | 590 | 88 | 12 | 14 | 3 | 17 | 25 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 1864 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 26.8 | 30.4 | 2.6 | 0.0 | 30.6 | 30.6 | 5.5 | 0.7 | 0.6 | 0.2 | 1.0 | 1.3 |
| Cycle Q Clear(g_c), s | 26.8 | 30.4 | 2.6 | 0.0 | 30.6 | 30.6 | 5.5 | 0.7 | 0.6 | 0.2 | 1.0 | 1.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.02 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 502 | 1786 | 796 | 491 | 798 | 837 | 209 | 185 | 157 | 140 | 99 | 477 |
| V/C Ratio(X) | 0.93 | 0.67 | 0.12 | 0.07 | 0.70 | 0.71 | 0.42 | 0.06 | 0.09 | 0.02 | 0.17 | 0.05 |
| Avail Cap(c_a), veh/h | 609 | 1786 | 796 | 491 | 798 | 837 | 209 | 374 | 317 | 222 | 385 | 719 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 34.1 | 22.4 | 7.8 | 24.6 | 26.6 | 26.6 | 49.4 | 49.0 | 22.1 | 53.5 | 54.3 | 29.8 |
| Incr Delay (d2), s/veh | 19.7 | 2.0 | 0.3 | 0.0 | 5.2 | 5.0 | 1.3 | 0.1 | 0.2 | 0.1 | 0.3 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 19.8 | 18.0 | 2.4 | 1.1 | 19.3 | 20.1 | 4.6 | 0.6 | 0.7 | 0.2 | 0.9 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 53.8 | 24.5 | 8.1 | 24.6 | 31.8 | 31.6 | 50.7 | 49.2 | 22.3 | 53.5 | 54.6 | 29.8 |
| LnGrp LOS | D | C | A | C | C | C | D | D | C | D | D | C |
| Approach Vol, veh/h | | 1761 | | | 1186 | | | 114 | | | 45 | |
| Approach Delay, s/veh | | 31.4 | | | 31.5 | | | 47.1 | | | 40.8 | |
| Approach LOS | | C | | | C | | | D | | | D | |

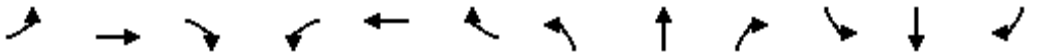
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.5 | 17.9 | 35.8 | 59.9 | 12.0 | 12.3 | 29.7 | 66.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 6.0 | * 6 | 6.0 | * 6 | 6.0 | 5.7 |
| Max Green Setting (Gmax), s | 6.0 | 24.0 | 37.0 | * 29 | 6.0 | * 25 | 6.0 | 60.3 |
| Max Q Clear Time (g_c+I1), s | 2.2 | 2.7 | 28.8 | 32.6 | 7.5 | 3.3 | 2.0 | 32.4 |
| Green Ext Time (p_c), s | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.1 | 0.0 | 6.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 32.2 |
| HCM 6th LOS | C |

**Notes**

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



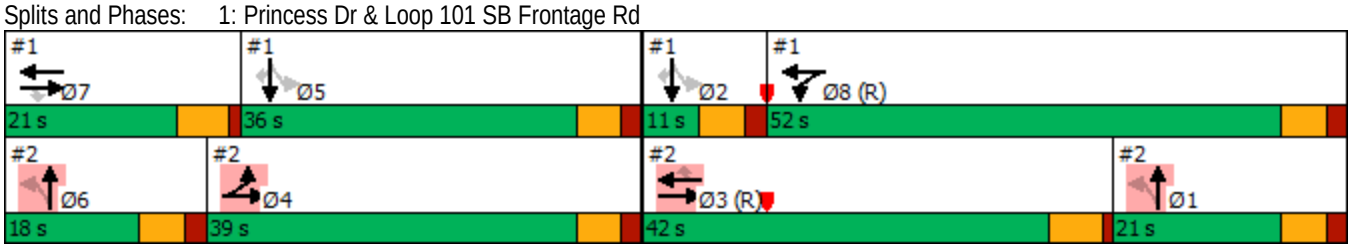
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 193 | 97 | 1351 | 476 | 0 | 0 | 0 | 0 | 719 | 870 | 262 |
| Future Volume (vph) | 0 | 193 | 97 | 1351 | 476 | 0 | 0 | 0 | 0 | 719 | 870 | 262 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 140 | | 245 | 240 | | 0 | 0 | | 0 | 355 | | 355 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 2 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 0.88 | 0.94 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.996 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.991 | |
| Satd. Flow (prot) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3162 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.991 | |
| Satd. Flow (perm) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3162 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 188 | | | | | | | | 2 | 262 |
| Link Speed (mph) | | 35 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 1345 | | | 409 | | | 1261 | | | 718 | |
| Travel Time (s) | | 26.2 | | | 6.2 | | | 28.7 | | | 10.9 | |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 214 | 108 | 1501 | 529 | 0 | 0 | 0 | 0 | 799 | 967 | 291 |
| Shared Lane Traffic (%) | | | | | | | | | | 27% | | 10% |
| Lane Group Flow (vph) | 0 | 214 | 108 | 1501 | 529 | 0 | 0 | 0 | 0 | 583 | 1212 | 262 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Right | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 36 | | | 36 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 2 5 | |
| Permitted Phases | | | 7 | | | | | | | 2 5 | | 2 5 |

| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | | | | | | |
| Future Volume (vph) | | | | | | |
| Ideal Flow (vphpl) | | | | | | |
| Storage Length (ft) | | | | | | |
| Storage Lanes | | | | | | |
| Taper Length (ft) | | | | | | |
| Lane Util. Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | | | | | | |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | | | | | | |
| Right Turn on Red | | | | | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | | | | | |
| Link Distance (ft) | | | | | | |
| Travel Time (s) | | | | | | |
| Peak Hour Factor | | | | | | |
| Adj. Flow (vph) | | | | | | |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | | | | | | |
| Enter Blocked Intersection | | | | | | |
| Lane Alignment | | | | | | |
| Median Width(ft) | | | | | | |
| Link Offset(ft) | | | | | | |
| Crosswalk Width(ft) | | | | | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | | | | | | |
| Turning Speed (mph) | | | | | | |
| Number of Detectors | | | | | | |
| Detector Template | | | | | | |
| Leading Detector (ft) | | | | | | |
| Trailing Detector (ft) | | | | | | |
| Detector 1 Position(ft) | | | | | | |
| Detector 1 Size(ft) | | | | | | |
| Detector 1 Type | | | | | | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | | | | | | |
| Detector 1 Queue (s) | | | | | | |
| Detector 1 Delay (s) | | | | | | |
| Detector 2 Position(ft) | | | | | | |
| Detector 2 Size(ft) | | | | | | |
| Detector 2 Type | | | | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | | | | |
| Turn Type | | | | | | |
| Protected Phases | 1 | 2 | 3 | 4 | 5 | 6 |
| Permitted Phases | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 7 | 7 | 8 | 7 8 | | | | | 2 5 | 2 5 | 2 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 7.0 | 7.0 | 5.0 | | | | | | | | |
| Minimum Split (s) | | 26.7 | 26.7 | 11.0 | | | | | | | | |
| Total Split (s) | | 21.0 | 21.0 | 52.0 | | | | | | | | |
| Total Split (%) | | 17.5% | 17.5% | 43.3% | | | | | | | | |
| Maximum Green (s) | | 15.3 | 15.3 | 46.0 | | | | | | | | |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | | | | | | | | |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | | | | | | | | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | | | | | | | | |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | | | | | | | | |
| Lead/Lag | | Lead | Lead | Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | | | | | | | | |
| Recall Mode | | None | None | C-Min | | | | | | | | |
| Walk Time (s) | | 4.0 | 4.0 | | | | | | | | | |
| Flash Dont Walk (s) | | 17.0 | 17.0 | | | | | | | | | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | | | | | | | | |
| Act Effct Green (s) | | 10.7 | 10.7 | 46.0 | 62.7 | | | | | 45.6 | 45.6 | 45.6 |
| Actuated g/C Ratio | | 0.09 | 0.09 | 0.38 | 0.52 | | | | | 0.38 | 0.38 | 0.38 |
| v/c Ratio | | 0.47 | 0.26 | 0.79 | 0.29 | | | | | 0.95 | 1.01 | 0.37 |
| Control Delay | | 54.8 | 1.5 | 20.1 | 2.0 | | | | | 64.1 | 65.6 | 4.8 |
| Queue Delay | | 0.0 | 0.0 | 30.1 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 54.8 | 1.5 | 50.2 | 2.0 | | | | | 64.1 | 65.6 | 4.8 |
| LOS | | D | A | D | A | | | | | E | E | A |
| Approach Delay | | 36.9 | | | 37.6 | | | | | | 57.5 | |
| Approach LOS | | D | | | D | | | | | | E | |

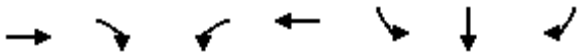
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 47 (39%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 140 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.01 | | | |
| Intersection Signal Delay: 46.8 | | Intersection LOS: D | |
| Intersection Capacity Utilization 87.3% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: Princess Dr & Loop 101 SB Frontage Rd



| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Detector Phase | | | | | | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 10.0 | 5.0 | 7.0 | 1.0 |
| Minimum Split (s) | 13.0 | 7.0 | 26.7 | 11.0 | 50.0 | 7.0 |
| Total Split (s) | 21.0 | 11.0 | 42.0 | 39.0 | 36.0 | 18.0 |
| Total Split (%) | 18% | 9% | 35% | 33% | 30% | 15% |
| Maximum Green (s) | 15.0 | 5.0 | 36.3 | 33.0 | 30.0 | 12.0 |
| Yellow Time (s) | 4.0 | 4.0 | 4.7 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | | | | | |
| Total Lost Time (s) | | | | | | |
| Lead/Lag | Lag | Lead | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 5.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | C-Min | None | None | None |
| Walk Time (s) | | | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | | 17.0 | | 40.0 | |
| Pedestrian Calls (#/hr) | | | 0 | | 0 | |
| Act Effct Green (s) | | | | | | |
| Actuated g/C Ratio | | | | | | |
| v/c Ratio | | | | | | |
| Control Delay | | | | | | |
| Queue Delay | | | | | | |
| Total Delay | | | | | | |
| LOS | | | | | | |
| Approach Delay | | | | | | |
| Approach LOS | | | | | | |

| Intersection Summary |
|---|

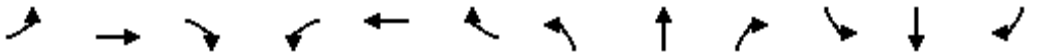


| Lane Group | EBT | EBR | WBL | WBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 214 | 108 | 1501 | 529 | 583 | 1212 | 262 |
| v/c Ratio | 0.47 | 0.26 | 0.79 | 0.29 | 0.95 | 1.01 | 0.37 |
| Control Delay | 54.8 | 1.5 | 20.1 | 2.0 | 64.1 | 65.6 | 4.8 |
| Queue Delay | 0.0 | 0.0 | 30.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 54.8 | 1.5 | 50.2 | 2.0 | 64.1 | 65.6 | 4.8 |
| Queue Length 50th (ft) | 58 | 0 | 394 | 3 | 474 | ~541 | 0 |
| Queue Length 95th (ft) | 83 | 0 | 462 | 6 | #781 | #775 | 62 |
| Internal Link Dist (ft) | 1265 | | | 329 | | 638 | |
| Turn Bay Length (ft) | | 245 | 240 | | 355 | | 355 |
| Base Capacity (vph) | 648 | 519 | 1912 | 1984 | 611 | 1201 | 709 |
| Starvation Cap Reductn | 0 | 0 | 491 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.33 | 0.21 | 1.06 | 0.27 | 0.95 | 1.01 | 0.37 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



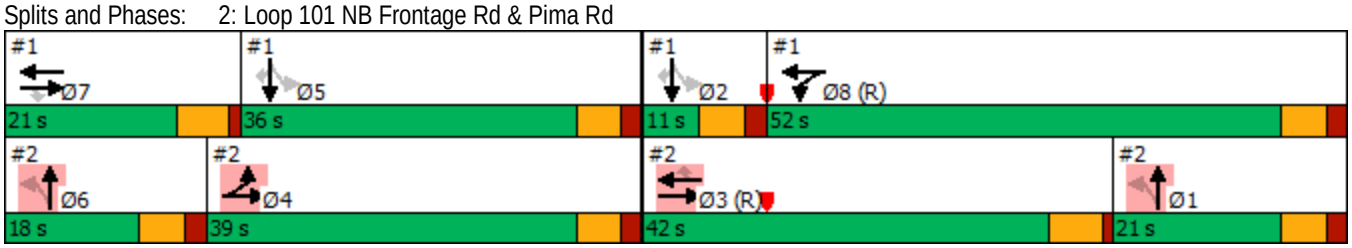
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 30 | 850 | 0 | 0 | 1461 | 370 | 414 | 517 | 1220 | 0 | 0 | 0 |
| Future Volume (vph) | 30 | 850 | 0 | 0 | 1461 | 370 | 414 | 517 | 1220 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 265 | | 0 | 350 | | 285 | 275 | | 275 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.81 | 1.00 | 0.91 | 0.91 | 0.88 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.991 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3360 | 2787 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.991 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3360 | 2787 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 411 | | | 777 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 409 | | | 1059 | | | 1024 | | | 527 | |
| Travel Time (s) | | 6.2 | | | 16.0 | | | 15.5 | | | 12.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 33 | 944 | 0 | 0 | 1623 | 411 | 460 | 574 | 1356 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 27% | | | | | |
| Lane Group Flow (vph) | 33 | 944 | 0 | 0 | 1623 | 411 | 336 | 698 | 1356 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | L NA | Right | Left | Left | Right | Left | Left | R NA | Left | Left | Right |
| Median Width(ft) | | 24 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | Free | | | |
| Protected Phases | 4 | 3 4 | | | 3 | | | 1 6 | | | | |
| Permitted Phases | | | | | | 3 | 1 6 | | Free | | | |

| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 | Ø8 |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | | | | | | |
| Future Volume (vph) | | | | | | |
| Ideal Flow (vphpl) | | | | | | |
| Storage Length (ft) | | | | | | |
| Storage Lanes | | | | | | |
| Taper Length (ft) | | | | | | |
| Lane Util. Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | | | | | | |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | | | | | | |
| Right Turn on Red | | | | | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | | | | | |
| Link Distance (ft) | | | | | | |
| Travel Time (s) | | | | | | |
| Peak Hour Factor | | | | | | |
| Adj. Flow (vph) | | | | | | |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | | | | | | |
| Enter Blocked Intersection | | | | | | |
| Lane Alignment | | | | | | |
| Median Width(ft) | | | | | | |
| Link Offset(ft) | | | | | | |
| Crosswalk Width(ft) | | | | | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | | | | | | |
| Turning Speed (mph) | | | | | | |
| Number of Detectors | | | | | | |
| Detector Template | | | | | | |
| Leading Detector (ft) | | | | | | |
| Trailing Detector (ft) | | | | | | |
| Detector 1 Position(ft) | | | | | | |
| Detector 1 Size(ft) | | | | | | |
| Detector 1 Type | | | | | | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | | | | | | |
| Detector 1 Queue (s) | | | | | | |
| Detector 1 Delay (s) | | | | | | |
| Detector 2 Position(ft) | | | | | | |
| Detector 2 Size(ft) | | | | | | |
| Detector 2 Type | | | | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | | | | |
| Turn Type | | | | | | |
| Protected Phases | 1 | 2 | 5 | 6 | 7 | 8 |
| Permitted Phases | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 4 | 3 4 | | | 3 | 3 | 1 6 | 1 6 | | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 10.0 | 10.0 | | | | | | |
| Minimum Split (s) | 11.0 | | | | 26.7 | 26.7 | | | | | | |
| Total Split (s) | 39.0 | | | | 42.0 | 42.0 | | | | | | |
| Total Split (%) | 32.5% | | | | 35.0% | 35.0% | | | | | | |
| Maximum Green (s) | 33.0 | | | | 36.3 | 36.3 | | | | | | |
| Yellow Time (s) | 4.0 | | | | 4.7 | 4.7 | | | | | | |
| All-Red Time (s) | 2.0 | | | | 1.0 | 1.0 | | | | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | 0.0 | | | | | | |
| Total Lost Time (s) | 6.0 | | | | 5.7 | 5.7 | | | | | | |
| Lead/Lag | Lag | | | | Lead | Lead | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 5.0 | 5.0 | | | | | | |
| Recall Mode | None | | | | C-Min | C-Min | | | | | | |
| Walk Time (s) | | | | | 4.0 | 4.0 | | | | | | |
| Flash Dont Walk (s) | | | | | 17.0 | 17.0 | | | | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | 0 | | | | | | |
| Act Effct Green (s) | 33.7 | 76.0 | | | 36.3 | 36.3 | 32.3 | 32.3 | 120.0 | | | |
| Actuated g/C Ratio | 0.28 | 0.63 | | | 0.30 | 0.30 | 0.27 | 0.27 | 1.00 | | | |
| v/c Ratio | 0.07 | 0.42 | | | 0.71 | 0.54 | 0.78 | 0.77 | 0.49 | | | |
| Control Delay | 25.9 | 2.9 | | | 33.1 | 7.4 | 54.0 | 47.0 | 0.6 | | | |
| Queue Delay | 0.0 | 1.5 | | | 1.8 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 25.9 | 4.4 | | | 34.9 | 7.4 | 54.0 | 47.0 | 0.6 | | | |
| LOS | C | A | | | C | A | D | D | A | | | |
| Approach Delay | | 5.1 | | | 29.4 | | | 21.7 | | | | |
| Approach LOS | | A | | | C | | | C | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 47 (39%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 140 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.01 | | | |
| Intersection Signal Delay: 21.6 | | Intersection LOS: C | |
| Intersection Capacity Utilization 87.3% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 2: Loop 101 NB Frontage Rd & Pima Rd



| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 | Ø8 |
|---|---|---|---|---|---|---|
| Detector Phase | | | | | | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 7.0 | 1.0 | 7.0 | 5.0 |
| Minimum Split (s) | 13.0 | 7.0 | 50.0 | 7.0 | 26.7 | 11.0 |
| Total Split (s) | 21.0 | 11.0 | 36.0 | 18.0 | 21.0 | 52.0 |
| Total Split (%) | 18% | 9% | 30% | 15% | 18% | 43% |
| Maximum Green (s) | 15.0 | 5.0 | 30.0 | 12.0 | 15.3 | 46.0 |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.7 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 |
| Lost Time Adjust (s) | | | | | | |
| Total Lost Time (s) | | | | | | |
| Lead/Lag | Lag | Lead | Lag | Lead | Lead | Lag |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | None | None | None | C-Min |
| Walk Time (s) | | | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | | 40.0 | | 17.0 | |
| Pedestrian Calls (#/hr) | | | 0 | | 0 | |
| Act Effct Green (s) | | | | | | |
| Actuated g/C Ratio | | | | | | |
| v/c Ratio | | | | | | |
| Control Delay | | | | | | |
| Queue Delay | | | | | | |
| Total Delay | | | | | | |
| LOS | | | | | | |
| Approach Delay | | | | | | |
| Approach LOS | | | | | | |

| Intersection Summary |
|---|

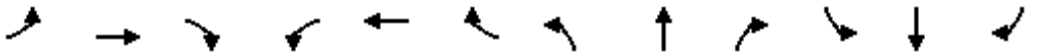
## 2: Loop 101 NB Frontage Rd & Pima Rd

| Lane Group | EBL | EBT | WBT | WBR | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 33 | 944 | 1623 | 411 | 336 | 698 | 1356 |
| v/c Ratio | 0.07 | 0.42 | 0.71 | 0.54 | 0.78 | 0.77 | 0.49 |
| Control Delay | 25.9 | 2.9 | 33.1 | 7.4 | 54.0 | 47.0 | 0.6 |
| Queue Delay | 0.0 | 1.5 | 1.8 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 25.9 | 4.4 | 34.9 | 7.4 | 54.0 | 47.0 | 0.6 |
| Queue Length 50th (ft) | 13 | 87 | 279 | 93 | 262 | 272 | 0 |
| Queue Length 95th (ft) | m19 | m91 | 315 | 163 | #397 | 347 | 0 |
| Internal Link Dist (ft) | | 329 | 979 | | | 944 | |
| Turn Bay Length (ft) | 265 | | | 285 | 275 | | 275 |
| Base Capacity (vph) | 497 | 2241 | 2282 | 765 | 442 | 924 | 2787 |
| Starvation Cap Reductn | 0 | 1045 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 466 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.07 | 0.79 | 0.89 | 0.54 | 0.76 | 0.76 | 0.49 |

Intersection Summary

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

m Volume for 95th percentile queue is metered by upstream signal.



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 354 | 126 | 568 | 541 | 0 | 0 | 0 | 0 | 823 | 166 | 44 |
| Future Volume (vph) | 0 | 354 | 126 | 568 | 541 | 0 | 0 | 0 | 0 | 823 | 166 | 44 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 240 | | 315 | 220 | | 0 | 0 | | 0 | 385 | | 385 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.999 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.966 | |
| Satd. Flow (prot) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3092 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.966 | |
| Satd. Flow (perm) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3092 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 148 | | | | | | | | | 92 |
| Link Speed (mph) | | 45 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 824 | | | 389 | | | 598 | | | 1243 | |
| Travel Time (s) | | 12.5 | | | 5.9 | | | 13.6 | | | 18.8 | |
| Peak Hour Factor | 0.25 | 0.85 | 0.85 | 0.89 | 0.89 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 416 | 148 | 638 | 608 | 0 | 0 | 0 | 0 | 914 | 184 | 49 |
| Shared Lane Traffic (%) | | | | | | | | | | 50% | | 10% |
| Lane Group Flow (vph) | 0 | 416 | 148 | 638 | 608 | 0 | 0 | 0 | 0 | 457 | 646 | 44 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | | | | | 2 | |
| Permitted Phases | | | 8 | | | | | | | 2 | | 2 |

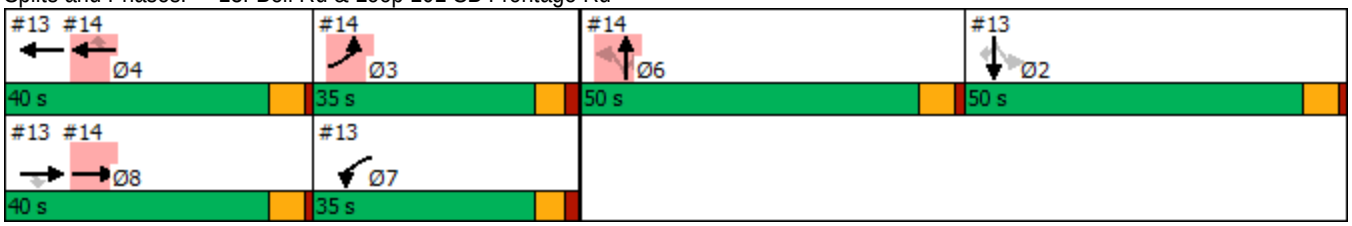
| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 3 | 6 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 8 | 8 | 7 | 4 | | | | | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 10.0 | 10.0 | 5.0 | 10.0 | | | | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | | 35.7 | 35.7 | 11.0 | 39.7 | | | | | 50.9 | 50.9 | 50.9 |
| Total Split (s) | | 40.0 | 40.0 | 35.0 | 40.0 | | | | | 50.0 | 50.0 | 50.0 |
| Total Split (%) | | 22.9% | 22.9% | 20.0% | 22.9% | | | | | 28.6% | 28.6% | 28.6% |
| Maximum Green (s) | | 34.3 | 34.3 | 29.0 | 34.3 | | | | | 44.1 | 44.1 | 44.1 |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | 4.7 | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | 1.0 | | | | | 1.2 | 1.2 | 1.2 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | 5.7 | | | | | 5.9 | 5.9 | 5.9 |
| Lead/Lag | | Lead | Lead | Lag | Lead | | | | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | 2.0 | 2.0 | 2.0 |
| Recall Mode | | Min | Min | None | None | | | | | None | None | None |
| Walk Time (s) | | 7.0 | 7.0 | | 8.0 | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 23.0 | 23.0 | | 26.0 | | | | | 38.0 | 38.0 | 38.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 34.3 | 34.3 | 29.0 | 33.3 | | | | | 44.1 | 44.1 | 44.1 |
| Actuated g/C Ratio | | 0.20 | 0.20 | 0.17 | 0.19 | | | | | 0.25 | 0.25 | 0.25 |
| v/c Ratio | | 0.41 | 0.34 | 1.11 | 0.90 | | | | | 1.12 | 1.12dl | 0.10 |
| Control Delay | | 62.5 | 10.1 | 127.5 | 46.7 | | | | | 137.1 | 71.0 | 0.5 |
| Queue Delay | | 1.1 | 0.0 | 1.1 | 1.3 | | | | | 4.6 | 50.5 | 0.0 |
| Total Delay | | 63.6 | 10.1 | 128.5 | 48.0 | | | | | 141.7 | 121.5 | 0.5 |
| LOS | | E | B | F | D | | | | | F | F | A |
| Approach Delay | | 49.6 | | | 89.2 | | | | | | 124.9 | |
| Approach LOS | | D | | | F | | | | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 173.4 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.84 | | | |
| Intersection Signal Delay: 95.5 | | Intersection LOS: F | |
| Intersection Capacity Utilization 85.0% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

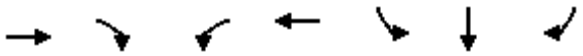
Splits and Phases: 13: Bell Rd & Loop 101 SB Frontage Rd



| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 5.0 | 7.0 |
| Minimum Split (s) | 11.0 | 48.0 |
| Total Split (s) | 35.0 | 50.0 |
| Total Split (%) | 20% | 29% |
| Maximum Green (s) | 29.0 | 44.0 |
| Yellow Time (s) | 4.0 | 4.7 |
| All-Red Time (s) | 2.0 | 1.3 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lead |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | Min | None |
| Walk Time (s) | | 7.0 |
| Flash Dont Walk (s) | | 35.0 |
| Pedestrian Calls (#/hr) | | 0 |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|

## 13: Bell Rd & Loop 101 SB Frontage Rd



| Lane Group | EBT | EBR | WBL | WBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 416 | 148 | 638 | 608 | 457 | 646 | 44 |
| v/c Ratio | 0.41 | 0.34 | 1.11 | 0.90 | 1.12 | 1.12dl | 0.10 |
| Control Delay | 62.5 | 10.1 | 127.5 | 46.7 | 137.1 | 71.0 | 0.5 |
| Queue Delay | 1.1 | 0.0 | 1.1 | 1.3 | 4.6 | 50.5 | 0.0 |
| Total Delay | 63.6 | 10.1 | 128.5 | 48.0 | 141.7 | 121.5 | 0.5 |
| Queue Length 50th (ft) | 155 | 0 | ~443 | 148 | ~663 | 411 | 0 |
| Queue Length 95th (ft) | 182 | 53 | m#554 | m#262 | #916 | 501 | 0 |
| Internal Link Dist (ft) | 744 | | | 309 | | 1163 | |
| Turn Bay Length (ft) | | 315 | 220 | | 385 | | 385 |
| Base Capacity (vph) | 1006 | 432 | 574 | 700 | 409 | 786 | 434 |
| Starvation Cap Reductn | 0 | 0 | 74 | 21 | 0 | 0 | 0 |
| Spillback Cap Reductn | 358 | 0 | 0 | 0 | 139 | 200 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.64 | 0.34 | 1.28 | 0.90 | 1.69 | 1.10 | 0.10 |

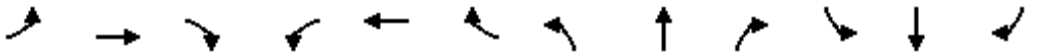
Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.



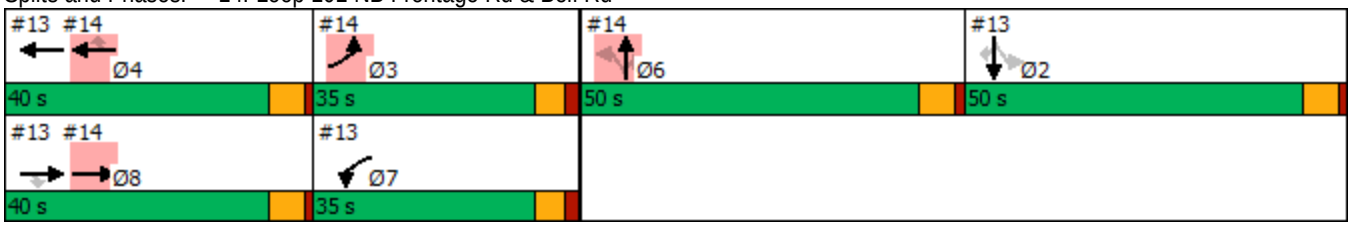
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 19 | 1158 | 0 | 0 | 708 | 387 | 402 | 301 | 577 | 0 | 0 | 0 |
| Future Volume (vph) | 19 | 1158 | 0 | 0 | 708 | 387 | 402 | 301 | 577 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 220 | | 0 | 235 | | 175 | 310 | | 310 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.86 | 1.00 | 0.91 | 0.86 | 0.91 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | 0.936 | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.995 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 2984 | 1441 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.995 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 2984 | 1441 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 381 | | 78 | 333 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 389 | | | 797 | | | 655 | | | 974 | |
| Travel Time (s) | | 5.9 | | | 12.1 | | | 9.9 | | | 22.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 21 | 1287 | 0 | 0 | 796 | 430 | 447 | 334 | 641 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 17% | | 48% | | | |
| Lane Group Flow (vph) | 21 | 1287 | 0 | 0 | 796 | 430 | 371 | 718 | 333 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | Perm | | | |
| Protected Phases | 3 | 8 | | | 4 | | | 6 | | | | |
| Permitted Phases | | | | | | 4 | 6 | | 6 | | | |

| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 2 | 7 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 3 | 8 | | | 4 | 4 | 6 | 6 | 6 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | | | 10.0 | 10.0 | 7.0 | 7.0 | 7.0 | | | |
| Minimum Split (s) | 11.0 | 35.7 | | | 39.7 | 39.7 | 48.0 | 48.0 | 48.0 | | | |
| Total Split (s) | 35.0 | 40.0 | | | 40.0 | 40.0 | 50.0 | 50.0 | 50.0 | | | |
| Total Split (%) | 20.0% | 22.9% | | | 22.9% | 22.9% | 28.6% | 28.6% | 28.6% | | | |
| Maximum Green (s) | 29.0 | 34.3 | | | 34.3 | 34.3 | 44.0 | 44.0 | 44.0 | | | |
| Yellow Time (s) | 4.0 | 4.7 | | | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 2.0 | 1.0 | | | 1.0 | 1.0 | 1.3 | 1.3 | 1.3 | | | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 6.0 | 5.7 | | | 5.7 | 5.7 | 6.0 | 6.0 | 6.0 | | | |
| Lead/Lag | Lag | Lead | | | Lead | Lead | Lead | Lead | Lead | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Recall Mode | Min | Min | | | None | None | None | None | None | | | |
| Walk Time (s) | | 7.0 | | | 8.0 | 8.0 | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | 23.0 | | | 26.0 | 26.0 | 35.0 | 35.0 | 35.0 | | | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 30.0 | 34.3 | | | 33.3 | 33.3 | 42.4 | 42.4 | 42.4 | | | |
| Actuated g/C Ratio | 0.17 | 0.20 | | | 0.19 | 0.19 | 0.24 | 0.24 | 0.24 | | | |
| v/c Ratio | 0.07 | 1.84 | | | 0.65 | 0.70 | 0.94 | 0.91 | 0.55 | | | |
| Control Delay | 53.3 | 405.2 | | | 67.4 | 16.0 | 97.0 | 73.1 | 8.4 | | | |
| Queue Delay | 0.0 | 0.0 | | | 4.5 | 0.0 | 0.0 | 0.5 | 0.0 | | | |
| Total Delay | 53.3 | 405.2 | | | 71.9 | 16.0 | 97.0 | 73.6 | 8.4 | | | |
| LOS | D | F | | | E | B | F | E | A | | | |
| Approach Delay | | 399.5 | | | 52.3 | | | 64.4 | | | | |
| Approach LOS | | F | | | D | | | E | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 173.4 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.84 | | | |
| Intersection Signal Delay: 171.5 | | Intersection LOS: F | |
| Intersection Capacity Utilization 85.0% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Loop 101 NB Frontage Rd & Bell Rd



| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 7.0 | 5.0 |
| Minimum Split (s) | 50.9 | 11.0 |
| Total Split (s) | 50.0 | 35.0 |
| Total Split (%) | 29% | 20% |
| Maximum Green (s) | 44.1 | 29.0 |
| Yellow Time (s) | 4.7 | 4.0 |
| All-Red Time (s) | 1.2 | 2.0 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lag |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | None | None |
| Walk Time (s) | 7.0 | |
| Flash Dont Walk (s) | 38.0 | |
| Pedestrian Calls (#/hr) | 0 | |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|

## 14: Loop 101 NB Frontage Rd & Bell Rd

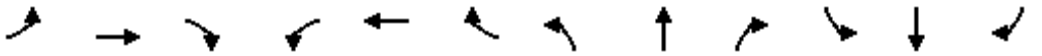
| Lane Group | EBL | EBT | WBT | WBR | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 21 | 1287 | 796 | 430 | 371 | 718 | 333 |
| v/c Ratio | 0.07 | 1.84 | 0.65 | 0.70 | 0.94 | 0.91 | 0.55 |
| Control Delay | 53.3 | 405.2 | 67.4 | 16.0 | 97.0 | 73.1 | 8.4 |
| Queue Delay | 0.0 | 0.0 | 4.5 | 0.0 | 0.0 | 0.5 | 0.0 |
| Total Delay | 53.3 | 405.2 | 71.9 | 16.0 | 97.0 | 73.6 | 8.4 |
| Queue Length 50th (ft) | 26 | ~1197 | 247 | 47 | 460 | 422 | 0 |
| Queue Length 95th (ft) | m37 | m#1235 | 283 | 181 | #683 | #541 | 98 |
| Internal Link Dist (ft) | | 309 | 717 | | | 575 | |
| Turn Bay Length (ft) | 220 | | | 175 | 310 | | 310 |
| Base Capacity (vph) | 306 | 700 | 1267 | 618 | 408 | 815 | 614 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 388 | 0 | 0 | 10 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.07 | 1.84 | 0.91 | 0.70 | 0.91 | 0.89 | 0.54 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.



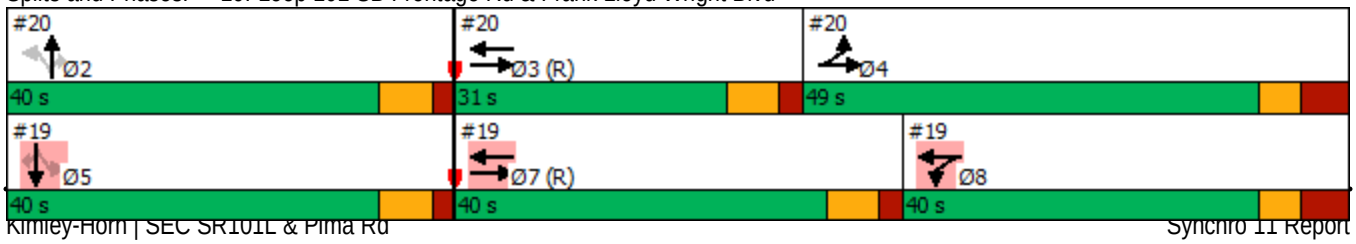
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1161 | 528 | 252 | 1287 | 0 | 0 | 0 | 0 | 867 | 668 | 563 |
| Future Volume (vph) | 0 | 1161 | 528 | 252 | 1287 | 0 | 0 | 0 | 0 | 867 | 668 | 563 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 185 | | 0 | 0 | | 0 | 0 | | 0 | 250 | | 250 |
| Storage Lanes | 2 | | 1 | 2 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.81 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 | 0.95 | 1.00 |
| Ped Bike Factor | | | 0.99 | 1.00 | | | | | | | | 0.99 |
| Frt | | | 0.850 | | | | | | | | | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 7192 | 1482 | 3019 | 4940 | 0 | 0 | 0 | 0 | 3183 | 3610 | 1538 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 7192 | 1463 | 3017 | 4940 | 0 | 0 | 0 | 0 | 3183 | 3610 | 1517 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 413 | | | | | | | | | 172 |
| Link Speed (mph) | | 45 | | | 45 | | | 30 | | | 30 | |
| Link Distance (ft) | | 675 | | | 322 | | | 835 | | | 832 | |
| Travel Time (s) | | 10.2 | | | 4.9 | | | 19.0 | | | 18.9 | |
| Confl. Peds. (#/hr) | 1 | | 1 | 1 | | | | | | | | 1 |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.85 | 0.85 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 0% | 7% | 9% | 16% | 5% | 0% | 0% | 0% | 0% | 10% | 0% | 5% |
| Adj. Flow (vph) | 0 | 1290 | 587 | 296 | 1514 | 0 | 0 | 0 | 0 | 963 | 742 | 626 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 1290 | 587 | 296 | 1514 | 0 | 0 | 0 | 0 | 963 | 742 | 626 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 60 | | 60 | 60 | | 60 | 60 | | 60 | 60 | | 60 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |

| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | | NA | Free | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 5 | |
| Permitted Phases | | | Free | | | | | | | 5 | | 5 |
| Detector Phase | | 7 | | 8 | 7 8 | | | | | 5 | 5 | 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 5.0 | | 6.0 | | | | | | 6.0 | 6.0 | 6.0 |
| Minimum Split (s) | | 24.8 | | 31.9 | | | | | | 29.7 | 29.7 | 29.7 |
| Total Split (s) | | 40.0 | | 40.0 | | | | | | 40.0 | 40.0 | 40.0 |
| Total Split (%) | | 33.3% | | 33.3% | | | | | | 33.3% | 33.3% | 33.3% |
| Maximum Green (s) | | 33.2 | | 31.7 | | | | | | 33.3 | 33.3 | 33.3 |
| Yellow Time (s) | | 4.7 | | 3.9 | | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 2.1 | | 4.4 | | | | | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.8 | | 8.3 | | | | | | 6.7 | 6.7 | 6.7 |
| Lead/Lag | | Lead | | Lag | | | | | | | | |
| Lead-Lag Optimize? | | Yes | | Yes | | | | | | | | |
| Vehicle Extension (s) | | 0.2 | | 0.2 | | | | | | 0.2 | 0.2 | 0.2 |
| Recall Mode | | C-Max | | None | | | | | | None | None | None |
| Walk Time (s) | | 7.0 | | | | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 11.0 | | | | | | | | 16.0 | 16.0 | 16.0 |
| Pedestrian Calls (#/hr) | | 0 | | | | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 33.2 | 120.0 | 21.6 | 63.1 | | | | | 43.4 | 43.4 | 43.4 |
| Actuated g/C Ratio | | 0.28 | 1.00 | 0.18 | 0.53 | | | | | 0.36 | 0.36 | 0.36 |
| v/c Ratio | | 0.65 | 0.40 | 0.55 | 0.58 | | | | | 0.84 | 0.57 | 0.95 |
| Control Delay | | 40.1 | 0.8 | 54.3 | 24.7 | | | | | 43.7 | 33.9 | 53.3 |
| Queue Delay | | 2.0 | 0.0 | 0.0 | 11.6 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 42.0 | 0.8 | 54.3 | 36.3 | | | | | 43.7 | 33.9 | 53.3 |
| LOS | | D | A | D | D | | | | | D | C | D |
| Approach Delay | | 29.1 | | | 39.2 | | | | | | 43.1 | |
| Approach LOS | | C | | | D | | | | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green | | | |
| Natural Cycle: 100 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.95 | | | |
| Intersection Signal Delay: 37.6 | | Intersection LOS: D | |
| Intersection Capacity Utilization 94.1% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

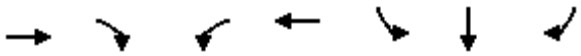
Splits and Phases: 19: Loop 101 SB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 2 | 3 | 4 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.7 | 24.8 | 13.3 |
| Total Split (s) | 40.0 | 31.0 | 49.0 |
| Total Split (%) | 33% | 26% | 41% |
| Maximum Green (s) | 33.3 | 24.2 | 40.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | Yes | Yes |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|

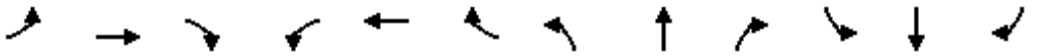
## 19: Loop 101 SB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | EBT | EBR | WBL | WBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 1290 | 587 | 296 | 1514 | 963 | 742 | 626 |
| v/c Ratio | 0.65 | 0.40 | 0.55 | 0.58 | 0.84 | 0.57 | 0.95 |
| Control Delay | 40.1 | 0.8 | 54.3 | 24.7 | 43.7 | 33.9 | 53.3 |
| Queue Delay | 2.0 | 0.0 | 0.0 | 11.6 | 0.0 | 0.0 | 0.0 |
| Total Delay | 42.0 | 0.8 | 54.3 | 36.3 | 43.7 | 33.9 | 53.3 |
| Queue Length 50th (ft) | 217 | 0 | 126 | 459 | 351 | 242 | 369 |
| Queue Length 95th (ft) | 252 | 0 | 163 | 479 | #527 | 333 | #672 |
| Internal Link Dist (ft) | 595 | | | 242 | | 752 | |
| Turn Bay Length (ft) | | | | | 250 | | 250 |
| Base Capacity (vph) | 1989 | 1463 | 797 | 3013 | 1151 | 1306 | 658 |
| Starvation Cap Reductn | 0 | 0 | 0 | 1493 | 0 | 0 | 0 |
| Spillback Cap Reductn | 515 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.88 | 0.40 | 0.37 | 1.00 | 0.84 | 0.57 | 0.95 |

Intersection Summary

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



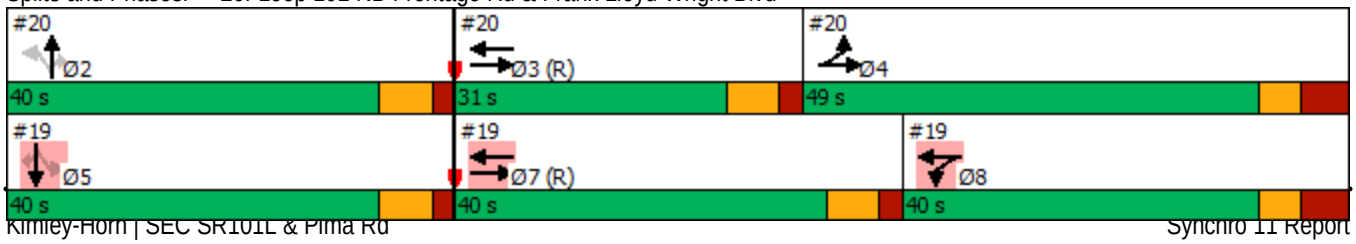
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 621 | 1407 | 0 | 0 | 832 | 1127 | 707 | 888 | 96 | 0 | 0 | 0 |
| Future Volume (vph) | 621 | 1407 | 0 | 0 | 832 | 1127 | 707 | 888 | 96 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 245 | | 150 | 250 | | 250 | 0 | | 0 |
| Storage Lanes | 2 | | 0 | 2 | | 2 | 2 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.81 | 0.88 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (prot) | 3183 | 4893 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (perm) | 3183 | 4893 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 561 | | | 172 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 45 | |
| Link Distance (ft) | | 322 | | | 1160 | | | 836 | | | 801 | |
| Travel Time (s) | | 4.9 | | | 17.6 | | | 12.7 | | | 12.1 | |
| Confl. Peds. (#/hr) | | | 1 | | | | | | | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.85 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Heavy Vehicles (%) | 10% | 6% | 0% | 0% | 6% | 14% | 2% | 0% | 2% | 0% | 0% | 0% |
| Adj. Flow (vph) | 690 | 1563 | 0 | 0 | 979 | 1252 | 786 | 987 | 107 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 690 | 1563 | 0 | 0 | 979 | 1252 | 786 | 987 | 107 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 60 | | 60 | 60 | | 60 | 60 | | 60 | 60 | | 60 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |

| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Prot | NA | | | NA | Free | Perm | NA | Perm | | | |
| Protected Phases | 4 | 3 4 | | | 3 | | | 2 | | | | |
| Permitted Phases | | | | | | Free | 2 | | 2 | | | |
| Detector Phase | 4 | 3 4 | | | 3 | | 2 | 2 | 2 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 5.0 | | 5.0 | 5.0 | 5.0 | | | |
| Minimum Split (s) | 13.3 | | | | 24.8 | | 24.7 | 24.7 | 24.7 | | | |
| Total Split (s) | 49.0 | | | | 31.0 | | 40.0 | 40.0 | 40.0 | | | |
| Total Split (%) | 40.8% | | | | 25.8% | | 33.3% | 33.3% | 33.3% | | | |
| Maximum Green (s) | 40.7 | | | | 24.2 | | 33.3 | 33.3 | 33.3 | | | |
| Yellow Time (s) | 3.9 | | | | 4.7 | | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 4.4 | | | | 2.1 | | 2.0 | 2.0 | 2.0 | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 8.3 | | | | 6.8 | | 6.7 | 6.7 | 6.7 | | | |
| Lead/Lag | Lag | | | | Lead | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 0.2 | | | | 0.2 | | 0.2 | 0.2 | 0.2 | | | |
| Recall Mode | None | | | | C-Max | | None | None | None | | | |
| Walk Time (s) | | | | | 7.0 | | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | | | | 11.0 | | 11.0 | 11.0 | 11.0 | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 30.6 | 63.1 | | | 24.2 | 120.0 | 43.4 | 43.4 | 43.4 | | | |
| Actuated g/C Ratio | 0.26 | 0.53 | | | 0.20 | 1.00 | 0.36 | 0.36 | 0.36 | | | |
| v/c Ratio | 0.85 | 0.61 | | | 0.67 | 0.50 | 0.63 | 0.53 | 0.16 | | | |
| Control Delay | 53.7 | 22.0 | | | 46.8 | 0.7 | 35.5 | 32.3 | 0.9 | | | |
| Queue Delay | 7.0 | 1.3 | | | 11.2 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 60.7 | 23.3 | | | 58.0 | 0.7 | 35.5 | 32.3 | 0.9 | | | |
| LOS | E | C | | | E | A | D | C | A | | | |
| Approach Delay | | 34.8 | | | 25.9 | | | 31.9 | | | | |
| Approach LOS | | C | | | C | | | C | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green | | | |
| Natural Cycle: 100 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.95 | | | |
| Intersection Signal Delay: 30.8 | | Intersection LOS: C | |
| Intersection Capacity Utilization 94.1% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 20: Loop 101 NB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 5 | 7 | 8 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 6.0 | 5.0 | 6.0 |
| Minimum Split (s) | 29.7 | 24.8 | 31.9 |
| Total Split (s) | 40.0 | 40.0 | 40.0 |
| Total Split (%) | 33% | 33% | 33% |
| Maximum Green (s) | 33.3 | 33.2 | 31.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | Yes | Yes |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 16.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|

## 20: Loop 101 NB Frontage Rd & Frank Lloyd Wright Blvd

| Lane Group | EBL | EBT | WBT | WBR | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 690 | 1563 | 979 | 1252 | 786 | 987 | 107 |
| v/c Ratio | 0.85 | 0.61 | 0.67 | 0.50 | 0.63 | 0.53 | 0.16 |
| Control Delay | 53.7 | 22.0 | 46.8 | 0.7 | 35.5 | 32.3 | 0.9 |
| Queue Delay | 7.0 | 1.3 | 11.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 60.7 | 23.3 | 58.0 | 0.7 | 35.5 | 32.3 | 0.9 |
| Queue Length 50th (ft) | 296 | 461 | 174 | 0 | 258 | 220 | 0 |
| Queue Length 95th (ft) | m357 | 521 | 193 | 0 | 356 | 289 | 4 |
| Internal Link Dist (ft) | | 242 | 1080 | | | 756 | |
| Turn Bay Length (ft) | | | | 150 | 250 | | 250 |
| Base Capacity (vph) | 1079 | 2984 | 1463 | 2493 | 1242 | 1876 | 682 |
| Starvation Cap Reductn | 338 | 1123 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 466 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.93 | 0.84 | 0.98 | 0.50 | 0.63 | 0.53 | 0.16 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# 2028 Total PM
# Traffic Capacity Analysis

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | ↑↑↑ | ↱ | | ↑↑↑ | | ↱ |
| Traffic Vol, veh/h | 1753 | 51 | 0 | 1768 | 0 | 13 |
| Future Vol, veh/h | 1753 | 51 | 0 | 1768 | 0 | 13 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1905 | 55 | 0 | 1922 | 0 | 14 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | - | - | - | 953 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | 7.14 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | 3.92 |
| Pot Cap-1 Maneuver | - | - | 0 | - | 0 | 223 |
| Stage 1 | - | - | 0 | - | 0 | - |
| Stage 2 | - | - | 0 | - | 0 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 223 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 22.2 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBT |
|---|---|---|---|---|
| Capacity (veh/h) | 223 | - | - | - |
| HCM Lane V/C Ratio | 0.063 | - | - | - |
| HCM Control Delay (s) | 22.2 | - | - | - |
| HCM Lane LOS | C | - | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | - |

| Phase Number | 2 | 4 | 5 | 6 |
|---|---|---|---|---|
| Movement | SBTL | WBL | SBL | NBT |
| Lead/Lag | | | Lead | Lag |
| Lead-Lag Optimize | | | Yes | Yes |
| Recall Mode | C-Max | Max | None | C-Max |
| Maximum Split (s) | 90 | 30 | 12 | 78 |
| Maximum Split (%) | 75.0% | 25.0% | 10.0% | 65.0% |
| Minimum Split (s) | 22.5 | 22.5 | 9.5 | 22.5 |
| Yellow Time (s) | 3.5 | 3.5 | 3.5 | 3.5 |
| All-Red Time (s) | 1 | 1 | 1 | 1 |
| Minimum Initial (s) | 5 | 5 | 5 | 5 |
| Vehicle Extension (s) | 3 | 3 | 3 | 3 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 |
| Walk Time (s) | 7 | 7 | | 7 |
| Flash Dont Walk (s) | 11 | 11 | | 11 |
| Dual Entry | Yes | Yes | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes |
| Start Time (s) | 108 | 78 | 108 | 0 |
| End Time (s) | 78 | 108 | 0 | 78 |
| Yield/Force Off (s) | 73.5 | 103.5 | 115.5 | 73.5 |
| Yield/Force Off 170(s) | 62.5 | 92.5 | 115.5 | 62.5 |
| Local Start Time (s) | 108 | 78 | 108 | 0 |
| Local Yield (s) | 73.5 | 103.5 | 115.5 | 73.5 |
| Local Yield 170(s) | 62.5 | 92.5 | 115.5 | 62.5 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 60 |
| Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of Green | |

Splits and Phases: 4: Pima Rd & Trailside View

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 103 | 58 | 1642 | 124 | 20 | 1651 |
| Future Volume (veh/h) | 103 | 58 | 1642 | 124 | 20 | 1651 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | No | | No | | | No |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 132 | 74 | 1785 | 135 | 24 | 1942 |
| Peak Hour Factor | 0.78 | 0.78 | 0.92 | 0.92 | 0.85 | 0.85 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 379 | 337 | 3329 | 1034 | 209 | 3638 |
| Arrive On Green | 0.21 | 0.21 | 0.65 | 0.65 | 0.02 | 0.71 |
| Sat Flow, veh/h | 1781 | 1585 | 5274 | 1585 | 1781 | 5274 |
| Grp Volume(v), veh/h | 132 | 74 | 1785 | 135 | 24 | 1942 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1585 | 1702 | 1585 | 1781 | 1702 |
| Q Serve(g_s), s | 7.6 | 4.6 | 22.4 | 3.9 | 0.5 | 21.2 |
| Cycle Q Clear(g_c), s | 7.6 | 4.6 | 22.4 | 3.9 | 0.5 | 21.2 |
| Prop In Lane | 1.00 | 1.00 | | 1.00 | 1.00 | |
| Lane Grp Cap(c), veh/h | 379 | 337 | 3329 | 1034 | 209 | 3638 |
| V/C Ratio(X) | 0.35 | 0.22 | 0.54 | 0.13 | 0.11 | 0.53 |
| Avail Cap(c_a), veh/h | 379 | 337 | 3329 | 1034 | 280 | 3638 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 40.2 | 39.0 | 11.2 | 7.9 | 8.6 | 8.0 |
| Incr Delay (d2), s/veh | 2.5 | 1.5 | 0.6 | 0.3 | 0.2 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 6.5 | 8.0 | 12.1 | 2.3 | 0.3 | 10.6 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 42.7 | 40.5 | 11.8 | 8.2 | 8.8 | 8.6 |
| LnGrp LOS | D | D | B | A | A | A |
| Approach Vol, veh/h | 206 | | 1920 | | | 1966 |
| Approach Delay, s/veh | 41.9 | | 11.5 | | | 8.6 |
| Approach LOS | D | | B | | | A |

| Timer - Assigned Phs | | 2 | | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | | 90.0 | | 30.0 | 7.3 | 82.7 |
| Change Period (Y+Rc), s | | 4.5 | | 4.5 | 4.5 | 4.5 |
| Max Green Setting (Gmax), s | | 85.5 | | 25.5 | 7.5 | 73.5 |
| Max Q Clear Time (g_c+I1), s | | 23.2 | | 9.6 | 2.5 | 24.4 |
| Green Ext Time (p_c), s | | 24.3 | | 0.5 | 0.0 | 20.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.6 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 9.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 9 | 71 | 87 | 1 | 61 | 1 | 87 | 6 | 1 | 1 | 2 | 6 |
| Future Vol, veh/h | 9 | 71 | 87 | 1 | 61 | 1 | 87 | 6 | 1 | 1 | 2 | 6 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | 125 | - | - | - | 150 | - | - | 160 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 80 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 11 | 89 | 109 | 1 | 76 | 1 | 109 | 8 | 1 | 1 | 3 | 8 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 274 | 236 | 7 | 335 | 240 | 9 | 11 | 0 | 0 | 9 | 0 | 0 |
| Stage 1 | 9 | 9 | - | 227 | 227 | - | - | - | - | - | - | - |
| Stage 2 | 265 | 227 | - | 108 | 13 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 678 | 665 | 1075 | 619 | 661 | 1073 | 1608 | - | - | 1611 | - | - |
| Stage 1 | 1012 | 888 | - | 776 | 716 | - | - | - | - | - | - | - |
| Stage 2 | 740 | 716 | - | 897 | 885 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 582 | 619 | 1075 | 470 | 615 | 1073 | 1608 | - | - | 1611 | - | - |
| Mov Cap-2 Maneuver | 582 | 619 | - | 470 | 615 | - | - | - | - | - | - | - |
| Stage 1 | 943 | 887 | - | 723 | 667 | - | - | - | - | - | - | - |
| Stage 2 | 610 | 667 | - | 725 | 884 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 10.3 | 11.7 | 6.8 | 0.8 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | EBLn2 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1608 | - | - | 615 | 1075 | 616 | 1611 | - | - |
| HCM Lane V/C Ratio | 0.068 | - | - | 0.163 | 0.101 | 0.128 | 0.001 | - | - |
| HCM Control Delay (s) | 7.4 | - | - | 12 | 8.7 | 11.7 | 7.2 | - | - |
| HCM Lane LOS | A | - | - | B | A | B | A | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0.6 | 0.3 | 0.4 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.8 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 190 | 844 | 31 | 0 | 0 |
| Future Vol, veh/h | 0 | 190 | 844 | 31 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | 100 | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 25 | 25 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 207 | 917 | 34 | 0 | 0 |

| Major/Minor | Minor1 | | Major1 | |
|---|---|---|---|---|
| Conflicting Flow All | - | 459 | 0 | 0 |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |
| Critical Hdwy | - | 6.94 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - |
| Follow-up Hdwy | - | 3.32 | - | - |
| Pot Cap-1 Maneuver | 0 | 549 | - | - |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 0 | - | - | - |
| Platoon blocked, % | | | - | - |
| Mov Cap-1 Maneuver | - | 549 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |

| Approach | WB | NB |
|---|---|---|
| HCM Control Delay, s | 15.5 | 0 |
| HCM LOS | C | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 |
|---|---|---|---|
| Capacity (veh/h) | - | - | 549 |
| HCM Lane V/C Ratio | - | - | 0.376 |
| HCM Control Delay (s) | - | - | 15.5 |
| HCM Lane LOS | - | - | C |
| HCM 95th %tile Q(veh) | - | - | 1.7 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.8 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 5 | 38 | 10 | 47 | 16 | 2 |
| Future Vol, veh/h | 5 | 38 | 10 | 47 | 16 | 2 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 150 | 0 | 50 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 5 | 41 | 11 | 51 | 17 | 2 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 91 | 18 | 19 | 0 | - | 0 |
| Stage 1 | 18 | - | - | - | - | - |
| Stage 2 | 73 | - | - | - | - | - |
| Critical Hdwy | 6.42 | 6.22 | 4.12 | - | - | - |
| Critical Hdwy Stg 1 | 5.42 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.42 | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 3.318 | 2.218 | - | - | - |
| Pot Cap-1 Maneuver | 909 | 1061 | 1597 | - | - | - |
| Stage 1 | 1005 | - | - | - | - | - |
| Stage 2 | 950 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 903 | 1061 | 1597 | - | - | - |
| Mov Cap-2 Maneuver | 853 | - | - | - | - | - |
| Stage 1 | 998 | - | - | - | - | - |
| Stage 2 | 950 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.6 | 1.3 | 0 |
| HCM LOS | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | EBLn2 | SBT | SBR |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1597 | - | 853 | 1061 | - | - |
| HCM Lane V/C Ratio | 0.007 | - | 0.006 | 0.039 | - | - |
| HCM Control Delay (s) | 7.3 | - | 9.2 | 8.5 | - | - |
| HCM Lane LOS | A | - | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 5 | 1286 | 16 | 5 | 1261 | 0 | 0 | 0 | 18 | 0 | 0 | 50 |
| Future Vol, veh/h | 5 | 1286 | 16 | 5 | 1261 | 0 | 0 | 0 | 18 | 0 | 0 | 50 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 150 | - | 150 | 60 | - | - | - | - | 0 | - | - | 0 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 81 | 81 | 81 | 79 | 79 | 79 | 52 | 52 | 52 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 6 | 1588 | 20 | 6 | 1596 | 0 | 0 | 0 | 35 | 0 | 0 | 54 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1596 | 0 | 0 | 1608 | 0 | 0 | - | - | 794 | - | - | 798 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | - | - | 6.94 | - | - | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | - | - | 3.32 | - | - | 3.32 |
| Pot Cap-1 Maneuver | 648 | - | - | 402 | - | - | 0 | 0 | 331 | 0 | 0 | *567 |
| Stage 1 | - | - | - | - | - | - | 0 | 0 | - | 0 | 0 | - |
| Stage 2 | - | - | - | - | - | - | 0 | 0 | - | 0 | 0 | - |
| Platoon blocked, % | 1 | - | - | | - | - | | | | | | 1 |
| Mov Cap-1 Maneuver | 648 | - | - | 402 | - | - | - | - | 331 | - | - | *567 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 17.1 | 12 |
| HCM LOS | | | C | B |

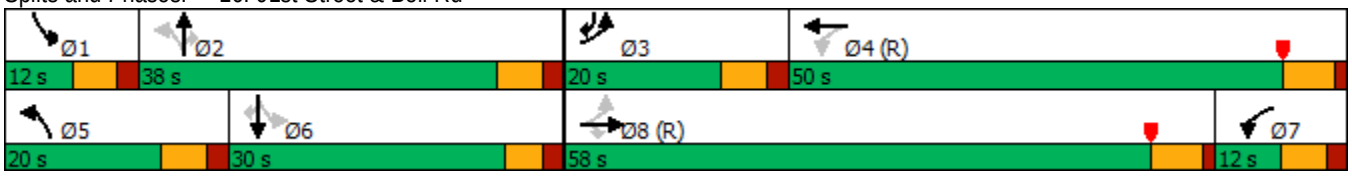
| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 331 | 648 | - | - | 402 | - | - | 567 |
| HCM Lane V/C Ratio | 0.105 | 0.01 | - | - | 0.016 | - | - | 0.096 |
| HCM Control Delay (s) | 17.1 | 10.6 | - | - | 14.1 | - | - | 12 |
| HCM Lane LOS | C | B | - | - | B | - | - | B |
| HCM 95th %tile Q(veh) | 0.3 | 0 | - | - | 0 | - | - | 0.3 |

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

| Phase Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Movement | SBL | NBTL | EBL | WBTL | NBL | SBTL | WBL | EBTL |
| Lead/Lag | Lead | Lag | Lead | Lag | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize | Yes | Yes | Yes | Yes | Yes | Yes | | |
| Recall Mode | None | None | None | C-Max | None | None | None | C-Max |
| Maximum Split (s) | 12 | 38 | 20 | 50 | 20 | 30 | 12 | 58 |
| Maximum Split (%) | 10.0% | 31.7% | 16.7% | 41.7% | 16.7% | 25.0% | 10.0% | 48.3% |
| Minimum Split (s) | 11 | 24 | 11 | 22.5 | 11 | 37.3 | 11 | 38.7 |
| Yellow Time (s) | 4 | 4 | 4 | 4.7 | 4 | 3.3 | 4 | 4.7 |
| All-Red Time (s) | 2 | 2 | 2 | 1.2 | 2 | 2 | 2 | 1 |
| Minimum Initial (s) | 5 | 5 | 5 | 10 | 5 | 7 | 5 | 10 |
| Vehicle Extension (s) | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 2 |
| Minimum Gap (s) | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Time Before Reduce (s) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Time To Reduce (s) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Walk Time (s) | | 7 | | | | 8 | | 8 |
| Flash Dont Walk (s) | | 11 | | | | 24 | | 24 |
| Dual Entry | No | Yes | No | Yes | No | Yes | No | Yes |
| Inhibit Max | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Start Time (s) | 4.7 | 16.7 | 54.7 | 74.7 | 4.7 | 24.7 | 112.7 | 54.7 |
| End Time (s) | 16.7 | 54.7 | 74.7 | 4.7 | 24.7 | 54.7 | 4.7 | 112.7 |
| Yield/Force Off (s) | 10.7 | 48.7 | 68.7 | 118.8 | 18.7 | 49.4 | 118.7 | 107 |
| Yield/Force Off 170(s) | 10.7 | 37.7 | 68.7 | 118.8 | 18.7 | 25.4 | 118.7 | 83 |
| Local Start Time (s) | 17.7 | 29.7 | 67.7 | 87.7 | 17.7 | 37.7 | 5.7 | 67.7 |
| Local Yield (s) | 23.7 | 61.7 | 81.7 | 11.8 | 31.7 | 62.4 | 11.7 | 0 |
| Local Yield 170(s) | 23.7 | 50.7 | 81.7 | 11.8 | 31.7 | 38.4 | 11.7 | 96 |

| Intersection Summary | |
|---|---|
| Cycle Length | 120 |
| Control Type | Actuated-Coordinated |
| Natural Cycle | 110 |
| Offset: 107 (89%), Referenced to phase 4:WBTL and 8:EBTL, Start of Yellow | |

Splits and Phases: 16: 91st Street & Bell Rd



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 80 | 1168 | 51 | 35 | 846 | 2 | 146 | 23 | 58 | 13 | 10 | 258 |
| Future Volume (veh/h) | 80 | 1168 | 51 | 35 | 846 | 2 | 146 | 23 | 58 | 13 | 10 | 258 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 |
| Adj Flow Rate, veh/h | 99 | 1442 | 44 | 41 | 995 | 2 | 247 | 39 | 69 | 14 | 11 | 140 |
| Peak Hour Factor | 0.81 | 0.81 | 0.81 | 0.85 | 0.85 | 0.85 | 0.59 | 0.59 | 0.59 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Cap, veh/h | 240 | 1549 | 691 | 338 | 1936 | 4 | 386 | 377 | 320 | 225 | 188 | 240 |
| Arrive On Green | 0.05 | 0.44 | 0.44 | 0.15 | 0.53 | 0.53 | 0.12 | 0.20 | 0.20 | 0.02 | 0.10 | 0.10 |
| Sat Flow, veh/h | 1781 | 3554 | 1585 | 1781 | 3639 | 7 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Grp Volume(v), veh/h | 99 | 1442 | 44 | 41 | 486 | 511 | 247 | 39 | 69 | 14 | 11 | 140 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1777 | 1585 | 1781 | 1777 | 1869 | 1781 | 1870 | 1585 | 1781 | 1870 | 1585 |
| Q Serve(g_s), s | 4.2 | 46.2 | 1.2 | 0.0 | 21.1 | 21.1 | 14.0 | 2.0 | 3.0 | 0.8 | 0.6 | 9.9 |
| Cycle Q Clear(g_c), s | 4.2 | 46.2 | 1.2 | 0.0 | 21.1 | 21.1 | 14.0 | 2.0 | 3.0 | 0.8 | 0.6 | 9.9 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 240 | 1549 | 691 | 338 | 945 | 994 | 386 | 377 | 320 | 225 | 188 | 240 |
| V/C Ratio(X) | 0.41 | 0.93 | 0.06 | 0.12 | 0.51 | 0.51 | 0.64 | 0.10 | 0.22 | 0.06 | 0.06 | 0.58 |
| Avail Cap(c_a), veh/h | 358 | 1549 | 691 | 338 | 945 | 994 | 386 | 499 | 423 | 287 | 385 | 407 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 25.4 | 32.1 | 7.6 | 42.8 | 18.1 | 18.1 | 41.1 | 39.1 | 18.9 | 47.3 | 48.8 | 47.4 |
| Incr Delay (d2), s/veh | 1.1 | 11.5 | 0.2 | 0.1 | 2.0 | 1.9 | 3.6 | 0.1 | 0.3 | 0.1 | 0.0 | 0.8 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(95%),veh/ln | 3.2 | 28.4 | 1.3 | 1.8 | 13.4 | 13.9 | 11.2 | 1.7 | 3.0 | 0.7 | 0.5 | 6.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 26.5 | 43.6 | 7.7 | 42.9 | 20.1 | 20.0 | 44.6 | 39.2 | 19.2 | 47.4 | 48.9 | 48.2 |
| LnGrp LOS | C | D | A | D | C | B | D | D | B | D | D | D |
| Approach Vol, veh/h | | 1585 | | | 1038 | | | 355 | | | 165 | |
| Approach Delay, s/veh | | 41.5 | | | 20.9 | | | 39.1 | | | 48.2 | |
| Approach LOS | | D | | | C | | | D | | | D | |

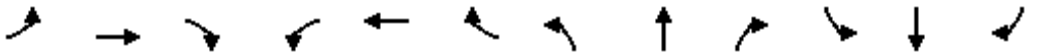
| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.9 | 30.2 | 12.1 | 69.8 | 20.0 | 18.1 | 23.9 | 58.0 |
| Change Period (Y+Rc), s | 6.0 | 6.0 | 6.0 | * 6 | 6.0 | * 6 | 6.0 | 5.7 |
| Max Green Setting (Gmax), s | 6.0 | 32.0 | 14.0 | * 44 | 14.0 | * 25 | 6.0 | 52.3 |
| Max Q Clear Time (g_c+I1), s | 2.8 | 5.0 | 6.2 | 23.1 | 16.0 | 11.9 | 2.0 | 48.2 |
| Green Ext Time (p_c), s | 0.0 | 0.4 | 0.1 | 3.6 | 0.0 | 0.2 | 0.0 | 2.5 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 34.8 |
| HCM 6th LOS | C |

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 416 | 379 | 1198 | 327 | 0 | 0 | 0 | 0 | 444 | 438 | 69 |
| Future Volume (vph) | 0 | 416 | 379 | 1198 | 327 | 0 | 0 | 0 | 0 | 444 | 438 | 69 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 140 | | 245 | 240 | | 0 | 0 | | 0 | 355 | | 355 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 2 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 0.88 | 0.94 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.998 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.987 | |
| Satd. Flow (prot) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3156 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.987 | |
| Satd. Flow (perm) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3156 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 188 | | | | | | | | 1 | 185 |
| Link Speed (mph) | | 35 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 1345 | | | 409 | | | 1261 | | | 718 | |
| Travel Time (s) | | 26.2 | | | 6.2 | | | 28.7 | | | 10.9 | |
| Peak Hour Factor | 0.25 | 0.85 | 0.85 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 489 | 446 | 1331 | 363 | 0 | 0 | 0 | 0 | 493 | 487 | 77 |
| Shared Lane Traffic (%) | | | | | | | | | | 35% | | 10% |
| Lane Group Flow (vph) | 0 | 489 | 446 | 1331 | 363 | 0 | 0 | 0 | 0 | 320 | 668 | 69 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Right | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 36 | | | 36 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 2 5 | |
| Permitted Phases | | | 7 | | | | | | | 2 5 | | 2 5 |

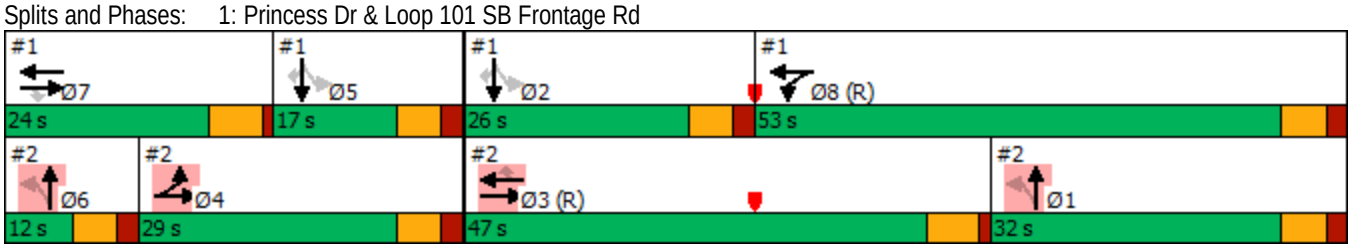
| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | | | | | | |
| Future Volume (vph) | | | | | | |
| Ideal Flow (vphpl) | | | | | | |
| Storage Length (ft) | | | | | | |
| Storage Lanes | | | | | | |
| Taper Length (ft) | | | | | | |
| Lane Util. Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | | | | | | |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | | | | | | |
| Right Turn on Red | | | | | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | | | | | |
| Link Distance (ft) | | | | | | |
| Travel Time (s) | | | | | | |
| Peak Hour Factor | | | | | | |
| Adj. Flow (vph) | | | | | | |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | | | | | | |
| Enter Blocked Intersection | | | | | | |
| Lane Alignment | | | | | | |
| Median Width(ft) | | | | | | |
| Link Offset(ft) | | | | | | |
| Crosswalk Width(ft) | | | | | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | | | | | | |
| Turning Speed (mph) | | | | | | |
| Number of Detectors | | | | | | |
| Detector Template | | | | | | |
| Leading Detector (ft) | | | | | | |
| Trailing Detector (ft) | | | | | | |
| Detector 1 Position(ft) | | | | | | |
| Detector 1 Size(ft) | | | | | | |
| Detector 1 Type | | | | | | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | | | | | | |
| Detector 1 Queue (s) | | | | | | |
| Detector 1 Delay (s) | | | | | | |
| Detector 2 Position(ft) | | | | | | |
| Detector 2 Size(ft) | | | | | | |
| Detector 2 Type | | | | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | | | | |
| Turn Type | | | | | | |
| Protected Phases | 1 | 2 | 3 | 4 | 5 | 6 |
| Permitted Phases | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 7 | 7 | 8 | 7 8 | | | | | 2 5 | 2 5 | 2 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 7.0 | 7.0 | 5.0 | | | | | | | | |
| Minimum Split (s) | | 26.7 | 26.7 | 11.0 | | | | | | | | |
| Total Split (s) | | 24.0 | 24.0 | 53.0 | | | | | | | | |
| Total Split (%) | | 20.0% | 20.0% | 44.2% | | | | | | | | |
| Maximum Green (s) | | 18.3 | 18.3 | 47.0 | | | | | | | | |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | | | | | | | | |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | | | | | | | | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | | | | | | | | |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | | | | | | | | |
| Lead/Lag | | Lead | Lead | Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | | | | | | | | |
| Recall Mode | | None | None | C-Min | | | | | | | | |
| Walk Time (s) | | 4.0 | 4.0 | | | | | | | | | |
| Flash Dont Walk (s) | | 17.0 | 17.0 | | | | | | | | | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | | | | | | | | |
| Act Effct Green (s) | | 17.0 | 17.0 | 50.8 | 73.8 | | | | | 34.5 | 34.5 | 34.5 |
| Actuated g/C Ratio | | 0.14 | 0.14 | 0.42 | 0.62 | | | | | 0.29 | 0.29 | 0.29 |
| v/c Ratio | | 0.68 | 0.80 | 0.63 | 0.17 | | | | | 0.69 | 0.74 | 0.13 |
| Control Delay | | 53.8 | 40.1 | 16.2 | 7.3 | | | | | 46.3 | 43.8 | 0.5 |
| Queue Delay | | 0.0 | 0.0 | 2.1 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 53.8 | 40.1 | 18.3 | 7.3 | | | | | 46.3 | 43.8 | 0.5 |
| LOS | | D | D | B | A | | | | | D | D | A |
| Approach Delay | | 47.3 | | | 15.9 | | | | | | 41.7 | |
| Approach LOS | | D | | | B | | | | | | D | |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 23 (19%), Referenced to phase 8:WBTL and 3:, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 31.3 Intersection LOS: C
Intersection Capacity Utilization 78.3% ICU Level of Service D
Analysis Period (min) 15

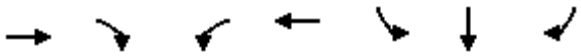
Splits and Phases: 1: Princess Dr & Loop 101 SB Frontage Rd



| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Detector Phase | | | | | | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 10.0 | 5.0 | 7.0 | 1.0 |
| Minimum Split (s) | 13.0 | 7.0 | 26.7 | 11.0 | 50.0 | 7.0 |
| Total Split (s) | 32.0 | 26.0 | 47.0 | 29.0 | 17.0 | 12.0 |
| Total Split (%) | 27% | 22% | 39% | 24% | 14% | 10% |
| Maximum Green (s) | 26.0 | 20.0 | 41.3 | 23.0 | 11.0 | 6.0 |
| Yellow Time (s) | 4.0 | 4.0 | 4.7 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | | | | | |
| Total Lost Time (s) | | | | | | |
| Lead/Lag | Lag | Lead | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 5.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | C-Min | None | None | None |
| Walk Time (s) | | | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | | 17.0 | | 40.0 | |
| Pedestrian Calls (#/hr) | | | 0 | | 0 | |
| Act Effct Green (s) | | | | | | |
| Actuated g/C Ratio | | | | | | |
| v/c Ratio | | | | | | |
| Control Delay | | | | | | |
| Queue Delay | | | | | | |
| Total Delay | | | | | | |
| LOS | | | | | | |
| Approach Delay | | | | | | |
| Approach LOS | | | | | | |

| Intersection Summary |
|---|

## 1: Princess Dr & Loop 101 SB Frontage Rd



| Lane Group | EBT | EBR | WBL | WBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 489 | 446 | 1331 | 363 | 320 | 668 | 69 |
| v/c Ratio | 0.68 | 0.80 | 0.63 | 0.17 | 0.69 | 0.74 | 0.13 |
| Control Delay | 53.8 | 40.1 | 16.2 | 7.3 | 46.3 | 43.8 | 0.5 |
| Queue Delay | 0.0 | 0.0 | 2.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 53.8 | 40.1 | 18.3 | 7.3 | 46.3 | 43.8 | 0.5 |
| Queue Length 50th (ft) | 131 | 110 | 343 | 81 | 234 | 262 | 0 |
| Queue Length 95th (ft) | 160 | 159 | m390 | m122 | 348 | 338 | 0 |
| Internal Link Dist (ft) | 1265 | | | 329 | | 638 | |
| Turn Bay Length (ft) | | 245 | 240 | | 355 | | 355 |
| Base Capacity (vph) | 775 | 584 | 2111 | 2214 | 513 | 1006 | 585 |
| Starvation Cap Reductn | 0 | 0 | 600 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.63 | 0.76 | 0.88 | 0.16 | 0.62 | 0.66 | 0.12 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

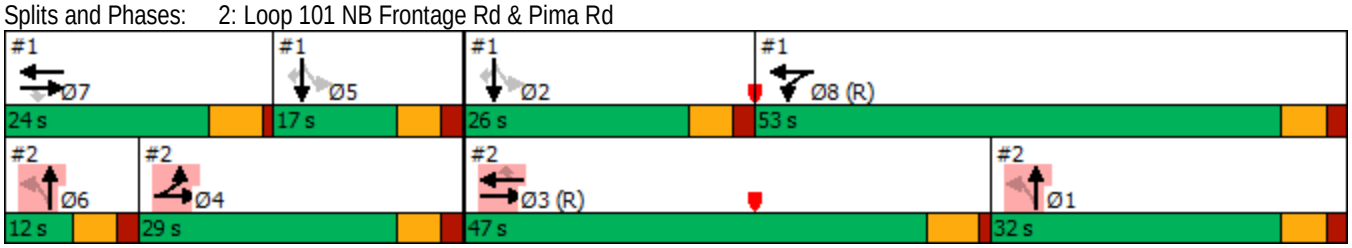
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 243 | 625 | 0 | 0 | 1290 | 478 | 237 | 862 | 1168 | 0 | 0 | 0 |
| Future Volume (vph) | 243 | 625 | 0 | 0 | 1290 | 478 | 237 | 862 | 1168 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 265 | | 0 | 350 | | 285 | 275 | | 275 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.81 | 1.00 | 0.91 | 0.91 | 0.88 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.999 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3387 | 2787 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.999 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3387 | 2787 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 188 | | | 792 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 409 | | | 1059 | | | 1024 | | | 527 | |
| Travel Time (s) | | 6.2 | | | 16.0 | | | 15.5 | | | 12.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 270 | 694 | 0 | 0 | 1433 | 531 | 263 | 958 | 1298 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 10% | | | | | |
| Lane Group Flow (vph) | 270 | 694 | 0 | 0 | 1433 | 531 | 237 | 984 | 1298 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | L NA | Right | Left | Left | Right | Left | Left | R NA | Left | Left | Right |
| Median Width(ft) | | 24 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | Free | | | |
| Protected Phases | 4 | 3 4 | | | 3 | | | 1 6 | | | | |
| Permitted Phases | | | | | | 3 | 1 6 | | Free | | | |

| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 | Ø8 |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | | | | | | |
| Future Volume (vph) | | | | | | |
| Ideal Flow (vphpl) | | | | | | |
| Storage Length (ft) | | | | | | |
| Storage Lanes | | | | | | |
| Taper Length (ft) | | | | | | |
| Lane Util. Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | | | | | | |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | | | | | | |
| Right Turn on Red | | | | | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | | | | | |
| Link Distance (ft) | | | | | | |
| Travel Time (s) | | | | | | |
| Peak Hour Factor | | | | | | |
| Adj. Flow (vph) | | | | | | |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | | | | | | |
| Enter Blocked Intersection | | | | | | |
| Lane Alignment | | | | | | |
| Median Width(ft) | | | | | | |
| Link Offset(ft) | | | | | | |
| Crosswalk Width(ft) | | | | | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | | | | | | |
| Turning Speed (mph) | | | | | | |
| Number of Detectors | | | | | | |
| Detector Template | | | | | | |
| Leading Detector (ft) | | | | | | |
| Trailing Detector (ft) | | | | | | |
| Detector 1 Position(ft) | | | | | | |
| Detector 1 Size(ft) | | | | | | |
| Detector 1 Type | | | | | | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | | | | | | |
| Detector 1 Queue (s) | | | | | | |
| Detector 1 Delay (s) | | | | | | |
| Detector 2 Position(ft) | | | | | | |
| Detector 2 Size(ft) | | | | | | |
| Detector 2 Type | | | | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | | | | |
| Turn Type | | | | | | |
| Protected Phases | 1 | 2 | 5 | 6 | 7 | 8 |
| Permitted Phases | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 4 | 3 4 | | | 3 | 3 | 1 6 | 1 6 | | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 10.0 | 10.0 | | | | | | |
| Minimum Split (s) | 11.0 | | | | 26.7 | 26.7 | | | | | | |
| Total Split (s) | 29.0 | | | | 47.0 | 47.0 | | | | | | |
| Total Split (%) | 24.2% | | | | 39.2% | 39.2% | | | | | | |
| Maximum Green (s) | 23.0 | | | | 41.3 | 41.3 | | | | | | |
| Yellow Time (s) | 4.0 | | | | 4.7 | 4.7 | | | | | | |
| All-Red Time (s) | 2.0 | | | | 1.0 | 1.0 | | | | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | 0.0 | | | | | | |
| Total Lost Time (s) | 6.0 | | | | 5.7 | 5.7 | | | | | | |
| Lead/Lag | Lag | | | | Lead | Lead | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 5.0 | 5.0 | | | | | | |
| Recall Mode | None | | | | C-Min | C-Min | | | | | | |
| Walk Time (s) | | | | | 4.0 | 4.0 | | | | | | |
| Flash Dont Walk (s) | | | | | 17.0 | 17.0 | | | | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | 0 | | | | | | |
| Act Effct Green (s) | 23.0 | 70.3 | | | 41.3 | 41.3 | 38.0 | 38.0 | 120.0 | | | |
| Actuated g/C Ratio | 0.19 | 0.59 | | | 0.34 | 0.34 | 0.32 | 0.32 | 1.00 | | | |
| v/c Ratio | 0.80 | 0.33 | | | 0.55 | 0.79 | 0.47 | 0.92 | 0.47 | | | |
| Control Delay | 54.4 | 3.2 | | | 28.5 | 26.3 | 36.5 | 53.6 | 0.6 | | | |
| Queue Delay | 0.0 | 0.5 | | | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | | | |
| Total Delay | 54.4 | 3.7 | | | 28.5 | 26.3 | 36.5 | 53.9 | 0.6 | | | |
| LOS | D | A | | | C | C | D | D | A | | | |
| Approach Delay | | 17.9 | | | 27.9 | | | 24.8 | | | | |
| Approach LOS | | B | | | C | | | C | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 23 (19%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.92 | | | |
| Intersection Signal Delay: 24.7 | | Intersection LOS: C | |
| Intersection Capacity Utilization 78.3% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 2: Loop 101 NB Frontage Rd & Pima Rd



| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 | Ø8 |
|---|---|---|---|---|---|---|
| Detector Phase | | | | | | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 7.0 | 1.0 | 7.0 | 5.0 |
| Minimum Split (s) | 13.0 | 7.0 | 50.0 | 7.0 | 26.7 | 11.0 |
| Total Split (s) | 32.0 | 26.0 | 17.0 | 12.0 | 24.0 | 53.0 |
| Total Split (%) | 27% | 22% | 14% | 10% | 20% | 44% |
| Maximum Green (s) | 26.0 | 20.0 | 11.0 | 6.0 | 18.3 | 47.0 |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.7 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 |
| Lost Time Adjust (s) | | | | | | |
| Total Lost Time (s) | | | | | | |
| Lead/Lag | Lag | Lead | Lag | Lead | Lead | Lag |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | None | None | None | C-Min |
| Walk Time (s) | | | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | | 40.0 | | 17.0 | |
| Pedestrian Calls (#/hr) | | | 0 | | 0 | |
| Act Effct Green (s) | | | | | | |
| Actuated g/C Ratio | | | | | | |
| v/c Ratio | | | | | | |
| Control Delay | | | | | | |
| Queue Delay | | | | | | |
| Total Delay | | | | | | |
| LOS | | | | | | |
| Approach Delay | | | | | | |
| Approach LOS | | | | | | |

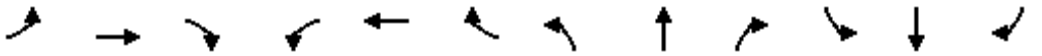
| Intersection Summary |
|---|

## 2: Loop 101 NB Frontage Rd & Pima Rd

| Lane Group | EBL | EBT | WBT | WBR | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 270 | 694 | 1433 | 531 | 237 | 984 | 1298 |
| v/c Ratio | 0.80 | 0.33 | 0.55 | 0.79 | 0.47 | 0.92 | 0.47 |
| Control Delay | 54.4 | 3.2 | 28.5 | 26.3 | 36.5 | 53.6 | 0.6 |
| Queue Delay | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 |
| Total Delay | 54.4 | 3.7 | 28.5 | 26.3 | 36.5 | 53.9 | 0.6 |
| Queue Length 50th (ft) | 201 | 141 | 160 | 140 | 161 | 402 | 0 |
| Queue Length 95th (ft) | #326 | 0 | 191 | 233 | 248 | #534 | 0 |
| Internal Link Dist (ft) | | 329 | 979 | | | 944 | |
| Turn Bay Length (ft) | 265 | | | 285 | 275 | | 275 |
| Base Capacity (vph) | 339 | 2073 | 2596 | 668 | 509 | 1072 | 2787 |
| Starvation Cap Reductn | 0 | 891 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 125 | 0 | 3 | 5 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.80 | 0.59 | 0.58 | 0.79 | 0.47 | 0.92 | 0.47 |

Intersection Summary

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



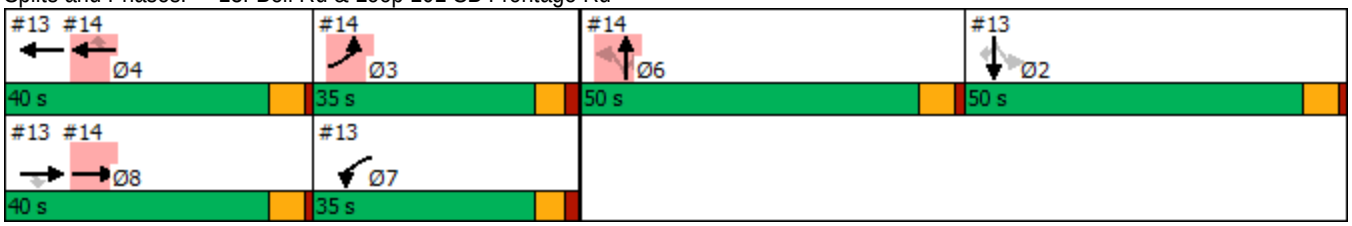
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 380 | 226 | 881 | 389 | 0 | 0 | 0 | 0 | 451 | 170 | 13 |
| Future Volume (vph) | 0 | 380 | 226 | 881 | 389 | 0 | 0 | 0 | 0 | 451 | 170 | 13 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 240 | | 315 | 220 | | 0 | 0 | | 0 | 385 | | 385 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 0.97 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.999 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.973 | |
| Satd. Flow (prot) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3114 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.973 | |
| Satd. Flow (perm) | 0 | 5085 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3114 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 251 | | | | | | | | | 92 |
| Link Speed (mph) | | 45 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 824 | | | 389 | | | 598 | | | 1243 | |
| Travel Time (s) | | 12.5 | | | 5.9 | | | 13.6 | | | 18.8 | |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.90 | 0.85 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.85 | 0.80 |
| Adj. Flow (vph) | 0 | 422 | 251 | 979 | 458 | 0 | 0 | 0 | 0 | 501 | 200 | 16 |
| Shared Lane Traffic (%) | | | | | | | | | | 50% | | 10% |
| Lane Group Flow (vph) | 0 | 422 | 251 | 979 | 458 | 0 | 0 | 0 | 0 | 250 | 453 | 14 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | | | | | 2 | |
| Permitted Phases | | | 8 | | | | | | | 2 | | 2 |

| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 3 | 6 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 8 | 8 | 7 | 4 | | | | | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 10.0 | 10.0 | 5.0 | 10.0 | | | | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | | 35.7 | 35.7 | 11.0 | 39.7 | | | | | 50.9 | 50.9 | 50.9 |
| Total Split (s) | | 40.0 | 40.0 | 35.0 | 40.0 | | | | | 50.0 | 50.0 | 50.0 |
| Total Split (%) | | 22.9% | 22.9% | 20.0% | 22.9% | | | | | 28.6% | 28.6% | 28.6% |
| Maximum Green (s) | | 34.3 | 34.3 | 29.0 | 34.3 | | | | | 44.1 | 44.1 | 44.1 |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | 4.7 | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | 1.0 | | | | | 1.2 | 1.2 | 1.2 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | 5.7 | | | | | 5.9 | 5.9 | 5.9 |
| Lead/Lag | | Lead | Lead | Lag | Lead | | | | | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | 2.0 | 2.0 | 2.0 |
| Recall Mode | | Min | Min | None | None | | | | | None | None | None |
| Walk Time (s) | | 7.0 | 7.0 | | 8.0 | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 23.0 | 23.0 | | 26.0 | | | | | 38.0 | 38.0 | 38.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 34.5 | 34.5 | 29.2 | 32.2 | | | | | 29.7 | 29.7 | 29.7 |
| Actuated g/C Ratio | | 0.22 | 0.22 | 0.18 | 0.20 | | | | | 0.19 | 0.19 | 0.19 |
| v/c Ratio | | 0.38 | 0.46 | 1.55 | 0.64 | | | | | 0.83 | 0.78 | 0.04 |
| Control Delay | | 55.4 | 9.0 | 291.0 | 28.6 | | | | | 84.6 | 70.8 | 0.2 |
| Queue Delay | | 0.6 | 0.0 | 1.0 | 0.6 | | | | | 0.9 | 0.3 | 0.0 |
| Total Delay | | 56.0 | 9.0 | 292.0 | 29.2 | | | | | 85.6 | 71.1 | 0.2 |
| LOS | | E | A | F | C | | | | | F | E | A |
| Approach Delay | | 38.5 | | | 208.2 | | | | | | 74.7 | |
| Approach LOS | | D | | | F | | | | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 158.2 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.55 | | | |
| Intersection Signal Delay: 133.9 | | Intersection LOS: F | |
| Intersection Capacity Utilization 68.6% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

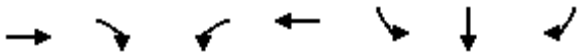
Splits and Phases: 13: Bell Rd & Loop 101 SB Frontage Rd



| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 5.0 | 7.0 |
| Minimum Split (s) | 11.0 | 48.0 |
| Total Split (s) | 35.0 | 50.0 |
| Total Split (%) | 20% | 29% |
| Maximum Green (s) | 29.0 | 44.0 |
| Yellow Time (s) | 4.0 | 4.7 |
| All-Red Time (s) | 2.0 | 1.3 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lead |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | Min | None |
| Walk Time (s) | | 7.0 |
| Flash Dont Walk (s) | | 35.0 |
| Pedestrian Calls (#/hr) | | 0 |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|

## 13: Bell Rd & Loop 101 SB Frontage Rd

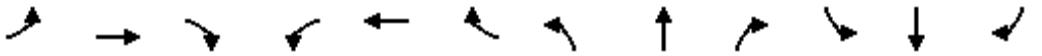


| Lane Group | EBT | EBR | WBL | WBT | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 422 | 251 | 979 | 458 | 250 | 453 | 14 |
| v/c Ratio | 0.38 | 0.46 | 1.55 | 0.64 | 0.83 | 0.78 | 0.04 |
| Control Delay | 55.4 | 9.0 | 291.0 | 28.6 | 84.6 | 70.8 | 0.2 |
| Queue Delay | 0.6 | 0.0 | 1.0 | 0.6 | 0.9 | 0.3 | 0.0 |
| Total Delay | 56.0 | 9.0 | 292.0 | 29.2 | 85.6 | 71.1 | 0.2 |
| Queue Length 50th (ft) | 141 | 0 | ~772 | 92 | 282 | 267 | 0 |
| Queue Length 95th (ft) | 193 | 82 | #992 | 129 | 398 | 315 | 0 |
| Internal Link Dist (ft) | 744 | | | 309 | | 1163 | |
| Turn Bay Length (ft) | | 315 | 220 | | 385 | | 385 |
| Base Capacity (vph) | 1108 | 541 | 632 | 771 | 451 | 872 | 470 |
| Starvation Cap Reductn | 0 | 0 | 79 | 89 | 0 | 0 | 0 |
| Spillback Cap Reductn | 358 | 0 | 0 | 0 | 60 | 87 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.56 | 0.46 | 1.77 | 0.67 | 0.64 | 0.58 | 0.03 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



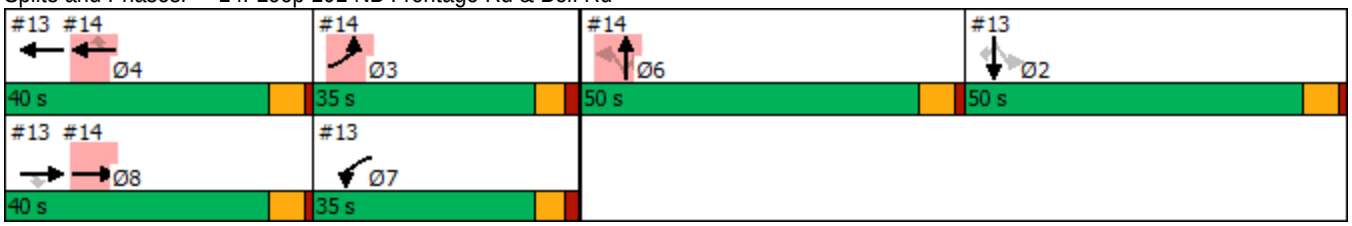
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 47 | 784 | 0 | 0 | 852 | 506 | 418 | 357 | 511 | 0 | 0 | 0 |
| Future Volume (vph) | 47 | 784 | 0 | 0 | 852 | 506 | 418 | 357 | 511 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 220 | | 0 | 235 | | 175 | 310 | | 310 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.86 | 1.00 | 0.91 | 0.86 | 0.91 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | 0.951 | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.993 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3026 | 1441 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.993 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 6408 | 1583 | 1610 | 3026 | 1441 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 395 | | 35 | 329 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 389 | | | 797 | | | 655 | | | 974 | |
| Travel Time (s) | | 5.9 | | | 12.1 | | | 9.9 | | | 22.1 | |
| Peak Hour Factor | 0.80 | 0.90 | 0.25 | 0.25 | 0.85 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 59 | 871 | 0 | 0 | 1002 | 562 | 464 | 397 | 568 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 21% | | 42% | | | |
| Lane Group Flow (vph) | 59 | 871 | 0 | 0 | 1002 | 562 | 367 | 733 | 329 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | Perm | | | |
| Protected Phases | 3 | 8 | | | 4 | | | 6 | | | | |
| Permitted Phases | | | | | | 4 | 6 | | 6 | | | |

| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 2 | 7 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 3 | 8 | | | 4 | 4 | 6 | 6 | 6 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | | | 10.0 | 10.0 | 7.0 | 7.0 | 7.0 | | | |
| Minimum Split (s) | 11.0 | 35.7 | | | 39.7 | 39.7 | 48.0 | 48.0 | 48.0 | | | |
| Total Split (s) | 35.0 | 40.0 | | | 40.0 | 40.0 | 50.0 | 50.0 | 50.0 | | | |
| Total Split (%) | 20.0% | 22.9% | | | 22.9% | 22.9% | 28.6% | 28.6% | 28.6% | | | |
| Maximum Green (s) | 29.0 | 34.3 | | | 34.3 | 34.3 | 44.0 | 44.0 | 44.0 | | | |
| Yellow Time (s) | 4.0 | 4.7 | | | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 2.0 | 1.0 | | | 1.0 | 1.0 | 1.3 | 1.3 | 1.3 | | | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 6.0 | 5.7 | | | 5.7 | 5.7 | 6.0 | 6.0 | 6.0 | | | |
| Lead/Lag | Lag | Lead | | | Lead | Lead | Lead | Lead | Lead | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Recall Mode | Min | Min | | | None | None | None | None | None | | | |
| Walk Time (s) | | 7.0 | | | 8.0 | 8.0 | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | 23.0 | | | 26.0 | 26.0 | 35.0 | 35.0 | 35.0 | | | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 31.5 | 34.5 | | | 32.2 | 32.2 | 41.2 | 41.2 | 41.2 | | | |
| Actuated g/C Ratio | 0.20 | 0.22 | | | 0.20 | 0.20 | 0.26 | 0.26 | 0.26 | | | |
| v/c Ratio | 0.17 | 1.13 | | | 0.77 | 0.88 | 0.88 | 0.90 | 0.53 | | | |
| Control Delay | 48.7 | 98.3 | | | 64.7 | 34.6 | 78.6 | 69.2 | 7.9 | | | |
| Queue Delay | 0.0 | 0.0 | | | 50.0 | 0.0 | 0.0 | 0.1 | 0.0 | | | |
| Total Delay | 48.7 | 98.3 | | | 114.7 | 34.6 | 78.6 | 69.3 | 7.9 | | | |
| LOS | D | F | | | F | C | E | E | A | | | |
| Approach Delay | | 95.2 | | | 85.9 | | | 57.6 | | | | |
| Approach LOS | | F | | | F | | | E | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 175 | | | |
| Actuated Cycle Length: 158.2 | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 1.55 | | | |
| Intersection Signal Delay: 77.8 | | Intersection LOS: E | |
| Intersection Capacity Utilization 68.6% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Loop 101 NB Frontage Rd & Bell Rd



| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 7.0 | 5.0 |
| Minimum Split (s) | 50.9 | 11.0 |
| Total Split (s) | 50.0 | 35.0 |
| Total Split (%) | 29% | 20% |
| Maximum Green (s) | 44.1 | 29.0 |
| Yellow Time (s) | 4.7 | 4.0 |
| All-Red Time (s) | 1.2 | 2.0 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | Lag |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | None | None |
| Walk Time (s) | 7.0 | |
| Flash Dont Walk (s) | 38.0 | |
| Pedestrian Calls (#/hr) | 0 | |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|

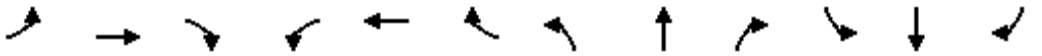
## 14: Loop 101 NB Frontage Rd & Bell Rd

| Lane Group | EBL | EBT | WBT | WBR | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 59 | 871 | 1002 | 562 | 367 | 733 | 329 |
| v/c Ratio | 0.17 | 1.13 | 0.77 | 0.88 | 0.88 | 0.90 | 0.53 |
| Control Delay | 48.7 | 98.3 | 64.7 | 34.6 | 78.6 | 69.2 | 7.9 |
| Queue Delay | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| Total Delay | 48.7 | 98.3 | 114.7 | 34.6 | 78.6 | 69.3 | 7.9 |
| Queue Length 50th (ft) | 65 | ~576 | 289 | 192 | 402 | 411 | 0 |
| Queue Length 95th (ft) | 113 | #790 | 336 | #441 | #653 | #585 | 97 |
| Internal Link Dist (ft) | | 309 | 717 | | | 575 | |
| Turn Bay Length (ft) | 220 | | | 175 | 310 | | 310 |
| Base Capacity (vph) | 352 | 771 | 1396 | 654 | 450 | 871 | 639 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 521 | 0 | 0 | 5 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.17 | 1.13 | 1.15 | 0.86 | 0.82 | 0.85 | 0.51 |

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1651 | 873 | 363 | 1220 | 0 | 0 | 0 | 0 | 839 | 887 | 377 |
| Future Volume (vph) | 0 | 1651 | 873 | 363 | 1220 | 0 | 0 | 0 | 0 | 839 | 887 | 377 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 185 | | 0 | 0 | | 0 | 0 | | 0 | 250 | | 250 |
| Storage Lanes | 2 | | 1 | 2 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.81 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 | 0.95 | 1.00 |
| Ped Bike Factor | | | 0.99 | 1.00 | | | | | | | | 0.99 |
| Frt | | | 0.850 | | | | | | | | | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 7192 | 1482 | 3019 | 4940 | 0 | 0 | 0 | 0 | 3183 | 3610 | 1538 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 7192 | 1463 | 3018 | 4940 | 0 | 0 | 0 | 0 | 3183 | 3610 | 1517 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 416 | | | | | | | | | 172 |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 45 | |
| Link Distance (ft) | | 675 | | | 322 | | | 835 | | | 832 | |
| Travel Time (s) | | 10.2 | | | 4.9 | | | 12.7 | | | 12.6 | |
| Confl. Peds. (#/hr) | 1 | | 1 | 1 | | | | | | | | 1 |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.88 | 0.88 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 0% | 7% | 9% | 16% | 5% | 0% | 0% | 0% | 0% | 10% | 0% | 5% |
| Adj. Flow (vph) | 0 | 1834 | 970 | 413 | 1386 | 0 | 0 | 0 | 0 | 932 | 986 | 419 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 1834 | 970 | 413 | 1386 | 0 | 0 | 0 | 0 | 932 | 986 | 419 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |

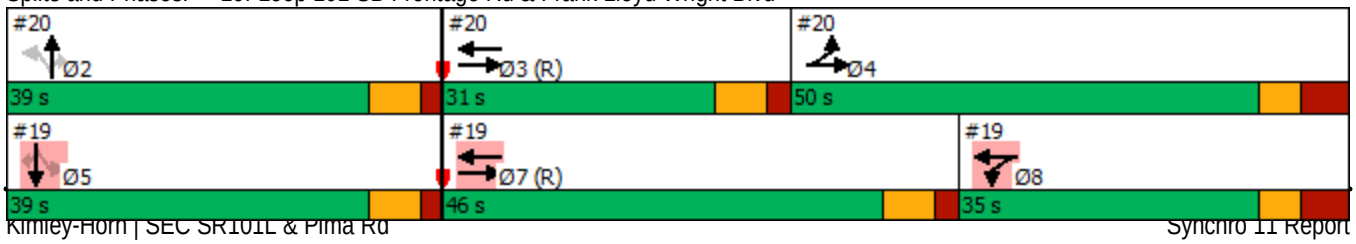
| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | | NA | Free | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 5 | |
| Permitted Phases | | | Free | | | | | | | 5 | | 5 |
| Detector Phase | | 7 | | 8 | 7 8 | | | | | 5 | 5 | 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 5.0 | | 6.0 | | | | | | 6.0 | 6.0 | 6.0 |
| Minimum Split (s) | | 24.8 | | 31.9 | | | | | | 29.7 | 29.7 | 29.7 |
| Total Split (s) | | 46.0 | | 35.0 | | | | | | 39.0 | 39.0 | 39.0 |
| Total Split (%) | | 38.3% | | 29.2% | | | | | | 32.5% | 32.5% | 32.5% |
| Maximum Green (s) | | 39.2 | | 26.7 | | | | | | 32.3 | 32.3 | 32.3 |
| Yellow Time (s) | | 4.7 | | 3.9 | | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 2.1 | | 4.4 | | | | | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.8 | | 8.3 | | | | | | 6.7 | 6.7 | 6.7 |
| Lead/Lag | | Lead | | Lag | | | | | | | | |
| Lead-Lag Optimize? | | Yes | | Yes | | | | | | | | |
| Vehicle Extension (s) | | 0.2 | | 0.2 | | | | | | 0.2 | 0.2 | 0.2 |
| Recall Mode | | C-Max | | None | | | | | | None | None | None |
| Walk Time (s) | | 7.0 | | | | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 11.0 | | | | | | | | 16.0 | 16.0 | 16.0 |
| Pedestrian Calls (#/hr) | | 0 | | | | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 39.2 | 120.0 | 19.9 | 67.4 | | | | | 39.1 | 39.1 | 39.1 |
| Actuated g/C Ratio | | 0.33 | 1.00 | 0.17 | 0.56 | | | | | 0.33 | 0.33 | 0.33 |
| v/c Ratio | | 0.78 | 0.66 | 0.83 | 0.50 | | | | | 0.90 | 0.84 | 0.69 |
| Control Delay | | 39.4 | 2.4 | 70.3 | 22.7 | | | | | 51.7 | 45.8 | 27.8 |
| Queue Delay | | 14.9 | 0.0 | 0.3 | 11.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 54.2 | 2.4 | 70.6 | 33.8 | | | | | 51.7 | 45.8 | 27.8 |
| LOS | | D | A | E | C | | | | | D | D | C |
| Approach Delay | | 36.3 | | | 42.2 | | | | | | 44.9 | |
| Approach LOS | | D | | | D | | | | | | D | |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 40.7 Intersection LOS: D
Intersection Capacity Utilization 89.4% ICU Level of Service E
Analysis Period (min) 15

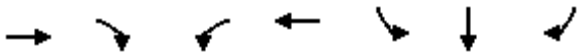
Splits and Phases: 19: Loop 101 SB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 2 | 3 | 4 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.7 | 24.8 | 13.3 |
| Total Split (s) | 39.0 | 31.0 | 50.0 |
| Total Split (%) | 33% | 26% | 42% |
| Maximum Green (s) | 32.3 | 24.2 | 41.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | Yes | Yes |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|

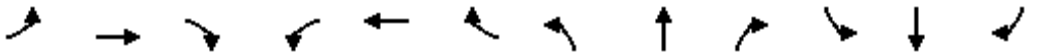
## 19: Loop 101 SB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | EBT | EBR | WBL | WBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 1834 | 970 | 413 | 1386 | 932 | 986 | 419 |
| v/c Ratio | 0.78 | 0.66 | 0.83 | 0.50 | 0.90 | 0.84 | 0.69 |
| Control Delay | 39.4 | 2.4 | 70.3 | 22.7 | 51.7 | 45.8 | 27.8 |
| Queue Delay | 14.9 | 0.0 | 0.3 | 11.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 54.2 | 2.4 | 70.6 | 33.8 | 51.7 | 45.8 | 27.8 |
| Queue Length 50th (ft) | 315 | 0 | 177 | 418 | 354 | 372 | 168 |
| Queue Length 95th (ft) | 354 | 0 | 224 | 460 | #534 | #542 | 312 |
| Internal Link Dist (ft) | 595 | | | 242 | | 752 | |
| Turn Bay Length (ft) | | | | | 250 | | 250 |
| Base Capacity (vph) | 2349 | 1463 | 671 | 3054 | 1037 | 1177 | 610 |
| Starvation Cap Reductn | 0 | 0 | 34 | 1655 | 0 | 0 | 0 |
| Spillback Cap Reductn | 543 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.02 | 0.66 | 0.65 | 0.99 | 0.90 | 0.84 | 0.69 |

Intersection Summary

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



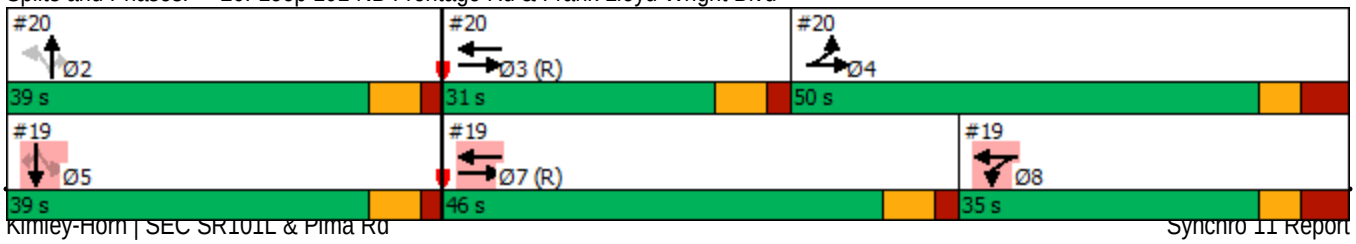
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 663 | 1826 | 0 | 0 | 811 | 988 | 772 | 670 | 151 | 0 | 0 | 0 |
| Future Volume (vph) | 663 | 1826 | 0 | 0 | 811 | 988 | 772 | 670 | 151 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 245 | | 150 | 250 | | 250 | 0 | | 0 |
| Storage Lanes | 2 | | 0 | 2 | | 2 | 2 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 0.81 | 0.88 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (prot) | 3183 | 4893 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (perm) | 3183 | 4893 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 567 | | | 172 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 45 | |
| Link Distance (ft) | | 322 | | | 1160 | | | 836 | | | 801 | |
| Travel Time (s) | | 4.9 | | | 17.6 | | | 12.7 | | | 12.1 | |
| Confl. Peds. (#/hr) | | | 1 | | | | | | | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.88 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Heavy Vehicles (%) | 10% | 6% | 0% | 0% | 6% | 14% | 2% | 0% | 2% | 0% | 0% | 0% |
| Adj. Flow (vph) | 737 | 2029 | 0 | 0 | 922 | 1098 | 858 | 744 | 168 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 737 | 2029 | 0 | 0 | 922 | 1098 | 858 | 744 | 168 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |

| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Prot | NA | | | NA | Free | Perm | NA | Perm | | | |
| Protected Phases | 4 | 3 4 | | | 3 | | | 2 | | | | |
| Permitted Phases | | | | | | Free | 2 | | 2 | | | |
| Detector Phase | 4 | 3 4 | | | 3 | | 2 | 2 | 2 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 5.0 | | 5.0 | 5.0 | 5.0 | | | |
| Minimum Split (s) | 13.3 | | | | 24.8 | | 24.7 | 24.7 | 24.7 | | | |
| Total Split (s) | 50.0 | | | | 31.0 | | 39.0 | 39.0 | 39.0 | | | |
| Total Split (%) | 41.7% | | | | 25.8% | | 32.5% | 32.5% | 32.5% | | | |
| Maximum Green (s) | 41.7 | | | | 24.2 | | 32.3 | 32.3 | 32.3 | | | |
| Yellow Time (s) | 3.9 | | | | 4.7 | | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 4.4 | | | | 2.1 | | 2.0 | 2.0 | 2.0 | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 8.3 | | | | 6.8 | | 6.7 | 6.7 | 6.7 | | | |
| Lead/Lag | Lag | | | | Lead | | | | | | | |
| Lead-Lag Optimize? | Yes | | | | Yes | | | | | | | |
| Vehicle Extension (s) | 0.2 | | | | 0.2 | | 0.2 | 0.2 | 0.2 | | | |
| Recall Mode | None | | | | C-Max | | None | None | None | | | |
| Walk Time (s) | | | | | 7.0 | | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | | | | 11.0 | | 11.0 | 11.0 | 11.0 | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 34.9 | 67.4 | | | 24.2 | 120.0 | 39.1 | 39.1 | 39.1 | | | |
| Actuated g/C Ratio | 0.29 | 0.56 | | | 0.20 | 1.00 | 0.33 | 0.33 | 0.33 | | | |
| v/c Ratio | 0.80 | 0.74 | | | 0.63 | 0.44 | 0.77 | 0.44 | 0.27 | | | |
| Control Delay | 43.3 | 20.3 | | | 46.0 | 0.6 | 42.6 | 33.5 | 5.6 | | | |
| Queue Delay | 51.6 | 15.7 | | | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 94.9 | 36.0 | | | 50.5 | 0.6 | 42.6 | 33.5 | 5.6 | | | |
| LOS | F | D | | | D | A | D | C | A | | | |
| Approach Delay | | 51.7 | | | 23.4 | | | 35.3 | | | | |
| Approach LOS | | D | | | C | | | D | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green | | | |
| Natural Cycle: 100 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.90 | | | |
| Intersection Signal Delay: 38.6 | | Intersection LOS: D | |
| Intersection Capacity Utilization 89.4% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 20: Loop 101 NB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 5 | 7 | 8 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 6.0 | 5.0 | 6.0 |
| Minimum Split (s) | 29.7 | 24.8 | 31.9 |
| Total Split (s) | 39.0 | 46.0 | 35.0 |
| Total Split (%) | 33% | 38% | 29% |
| Maximum Green (s) | 32.3 | 39.2 | 26.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | Yes | Yes |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 16.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|

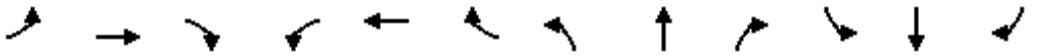
## 20: Loop 101 NB Frontage Rd & Frank Lloyd Wright Blvd

| Lane Group | EBL | EBT | WBT | WBR | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 737 | 2029 | 922 | 1098 | 858 | 744 | 168 |
| v/c Ratio | 0.80 | 0.74 | 0.63 | 0.44 | 0.77 | 0.44 | 0.27 |
| Control Delay | 43.3 | 20.3 | 46.0 | 0.6 | 42.6 | 33.5 | 5.6 |
| Queue Delay | 51.6 | 15.7 | 4.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 94.9 | 36.0 | 50.5 | 0.6 | 42.6 | 33.5 | 5.6 |
| Queue Length 50th (ft) | 317 | 617 | 162 | 0 | 307 | 165 | 0 |
| Queue Length 95th (ft) | m371 | 669 | 189 | 0 | #442 | 220 | 50 |
| Internal Link Dist (ft) | | 242 | 1080 | | | 756 | |
| Turn Bay Length (ft) | | | | 150 | 250 | | 250 |
| Base Capacity (vph) | 1106 | 3025 | 1463 | 2493 | 1119 | 1691 | 632 |
| Starvation Cap Reductn | 437 | 1033 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 456 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.10 | 1.02 | 0.92 | 0.44 | 0.77 | 0.44 | 0.27 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

# 2028 Total Alternative Scenario
# Traffic Capacity Analysis



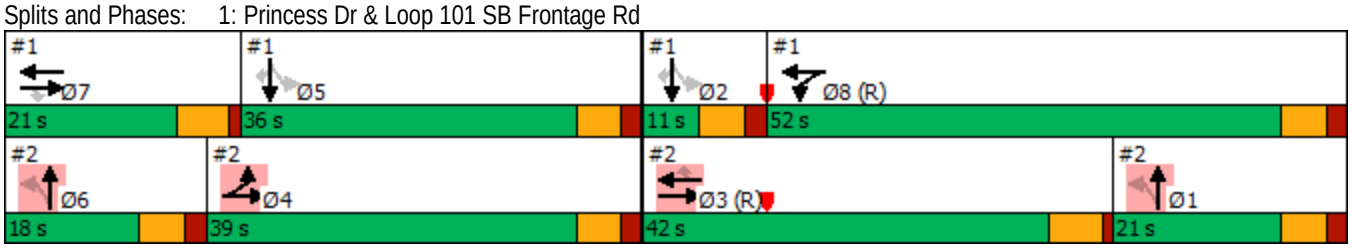
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 193 | 97 | 1351 | 476 | 0 | 0 | 0 | 0 | 719 | 870 | 262 |
| Future Volume (vph) | 0 | 193 | 97 | 1351 | 476 | 0 | 0 | 0 | 0 | 719 | 870 | 262 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 140 | | 245 | 240 | | 0 | 0 | | 0 | 355 | | 355 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 0.88 | 0.94 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.86 | 0.81 | 0.86 |
| Frt | | | 0.850 | | | | | | | | 0.997 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.987 | |
| Satd. Flow (prot) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1522 | 4454 | 1362 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.987 | |
| Satd. Flow (perm) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1522 | 4454 | 1362 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 188 | | | | | | | | 2 | 262 |
| Link Speed (mph) | | 35 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 1345 | | | 409 | | | 1261 | | | 718 | |
| Travel Time (s) | | 26.2 | | | 6.2 | | | 28.7 | | | 10.9 | |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 214 | 108 | 1501 | 529 | 0 | 0 | 0 | 0 | 799 | 967 | 291 |
| Shared Lane Traffic (%) | | | | | | | | | | 45% | | 10% |
| Lane Group Flow (vph) | 0 | 214 | 108 | 1501 | 529 | 0 | 0 | 0 | 0 | 439 | 1356 | 262 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Right | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 36 | | | 36 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 2 5 | |
| Permitted Phases | | | 7 | | | | | | | 2 5 | | 2 5 |

| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | | | | | | |
| Future Volume (vph) | | | | | | |
| Ideal Flow (vphpl) | | | | | | |
| Storage Length (ft) | | | | | | |
| Storage Lanes | | | | | | |
| Taper Length (ft) | | | | | | |
| Lane Util. Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | | | | | | |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | | | | | | |
| Right Turn on Red | | | | | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | | | | | |
| Link Distance (ft) | | | | | | |
| Travel Time (s) | | | | | | |
| Peak Hour Factor | | | | | | |
| Adj. Flow (vph) | | | | | | |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | | | | | | |
| Enter Blocked Intersection | | | | | | |
| Lane Alignment | | | | | | |
| Median Width(ft) | | | | | | |
| Link Offset(ft) | | | | | | |
| Crosswalk Width(ft) | | | | | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | | | | | | |
| Turning Speed (mph) | | | | | | |
| Number of Detectors | | | | | | |
| Detector Template | | | | | | |
| Leading Detector (ft) | | | | | | |
| Trailing Detector (ft) | | | | | | |
| Detector 1 Position(ft) | | | | | | |
| Detector 1 Size(ft) | | | | | | |
| Detector 1 Type | | | | | | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | | | | | | |
| Detector 1 Queue (s) | | | | | | |
| Detector 1 Delay (s) | | | | | | |
| Detector 2 Position(ft) | | | | | | |
| Detector 2 Size(ft) | | | | | | |
| Detector 2 Type | | | | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | | | | |
| Turn Type | | | | | | |
| Protected Phases | 1 | 2 | 3 | 4 | 5 | 6 |
| Permitted Phases | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 7 | 7 | 8 | 7 8 | | | | | 2 5 | 2 5 | 2 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 7.0 | 7.0 | 5.0 | | | | | | | | |
| Minimum Split (s) | | 26.7 | 26.7 | 11.0 | | | | | | | | |
| Total Split (s) | | 21.0 | 21.0 | 52.0 | | | | | | | | |
| Total Split (%) | | 17.5% | 17.5% | 43.3% | | | | | | | | |
| Maximum Green (s) | | 15.3 | 15.3 | 46.0 | | | | | | | | |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | | | | | | | | |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | | | | | | | | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | | | | | | | | |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | | | | | | | | |
| Lead/Lag | | Lead | Lead | Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | | | | | | | | |
| Recall Mode | | None | None | C-Min | | | | | | | | |
| Walk Time (s) | | 4.0 | 4.0 | | | | | | | | | |
| Flash Dont Walk (s) | | 17.0 | 17.0 | | | | | | | | | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | | | | | | | | |
| Act Effct Green (s) | | 10.7 | 10.7 | 46.0 | 62.7 | | | | | 45.6 | 45.6 | 45.6 |
| Actuated g/C Ratio | | 0.09 | 0.09 | 0.38 | 0.52 | | | | | 0.38 | 0.38 | 0.38 |
| v/c Ratio | | 0.47 | 0.26 | 0.79 | 0.29 | | | | | 0.76 | 0.80 | 0.39 |
| Control Delay | | 54.8 | 1.5 | 20.7 | 2.4 | | | | | 43.2 | 38.0 | 5.0 |
| Queue Delay | | 0.0 | 0.0 | 30.1 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 54.8 | 1.5 | 50.9 | 2.4 | | | | | 43.2 | 38.0 | 5.0 |
| LOS | | D | A | D | A | | | | | D | D | A |
| Approach Delay | | 36.9 | | | 38.2 | | | | | | 34.9 | |
| Approach LOS | | D | | | D | | | | | | C | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 47 (39%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 140 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.80 | | | |
| Intersection Signal Delay: 36.6 | | Intersection LOS: D | |
| Intersection Capacity Utilization 80.5% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

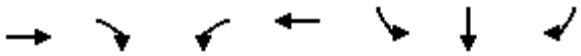
Splits and Phases: 1: Princess Dr & Loop 101 SB Frontage Rd



| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Detector Phase | | | | | | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 10.0 | 5.0 | 7.0 | 1.0 |
| Minimum Split (s) | 13.0 | 7.0 | 26.7 | 11.0 | 50.0 | 7.0 |
| Total Split (s) | 21.0 | 11.0 | 42.0 | 39.0 | 36.0 | 18.0 |
| Total Split (%) | 18% | 9% | 35% | 33% | 30% | 15% |
| Maximum Green (s) | 15.0 | 5.0 | 36.3 | 33.0 | 30.0 | 12.0 |
| Yellow Time (s) | 4.0 | 4.0 | 4.7 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | | | | | |
| Total Lost Time (s) | | | | | | |
| Lead/Lag | Lag | Lead | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 5.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | C-Min | None | None | None |
| Walk Time (s) | | | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | | 17.0 | | 40.0 | |
| Pedestrian Calls (#/hr) | | | 0 | | 0 | |
| Act Effct Green (s) | | | | | | |
| Actuated g/C Ratio | | | | | | |
| v/c Ratio | | | | | | |
| Control Delay | | | | | | |
| Queue Delay | | | | | | |
| Total Delay | | | | | | |
| LOS | | | | | | |
| Approach Delay | | | | | | |
| Approach LOS | | | | | | |

| Intersection Summary |
|---|

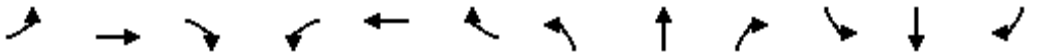
## 1: Princess Dr & Loop 101 SB Frontage Rd



| Lane Group | EBT | EBR | WBL | WBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 214 | 108 | 1501 | 529 | 439 | 1356 | 262 |
| v/c Ratio | 0.47 | 0.26 | 0.79 | 0.29 | 0.76 | 0.80 | 0.39 |
| Control Delay | 54.8 | 1.5 | 20.7 | 2.4 | 43.2 | 38.0 | 5.0 |
| Queue Delay | 0.0 | 0.0 | 30.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 54.8 | 1.5 | 50.9 | 2.4 | 43.2 | 38.0 | 5.0 |
| Queue Length 50th (ft) | 58 | 0 | 394 | 3 | 339 | 378 | 0 |
| Queue Length 95th (ft) | 83 | 0 | 462 | 6 | #562 | 476 | 66 |
| Internal Link Dist (ft) | 1265 | | | 329 | | 638 | |
| Turn Bay Length (ft) | | 245 | 240 | | 355 | | 355 |
| Base Capacity (vph) | 648 | 519 | 1912 | 1984 | 577 | 1692 | 679 |
| Starvation Cap Reductn | 0 | 0 | 491 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.33 | 0.21 | 1.06 | 0.27 | 0.76 | 0.80 | 0.39 |

Intersection Summary

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



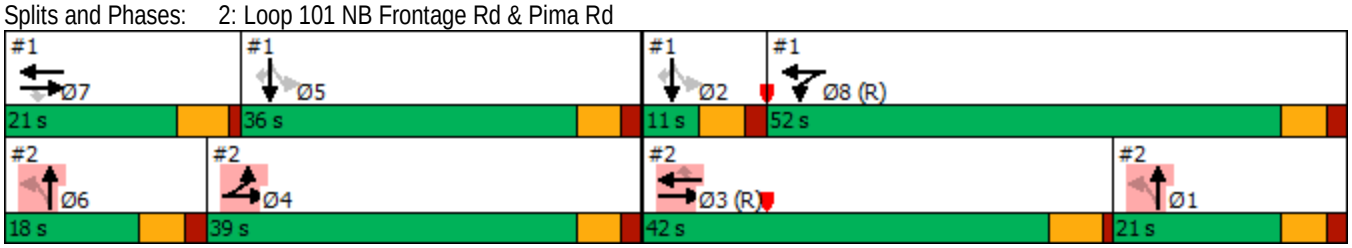
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 30 | 850 | 0 | 0 | 1461 | 370 | 414 | 517 | 1220 | 0 | 0 | 0 |
| Future Volume (vph) | 30 | 850 | 0 | 0 | 1461 | 370 | 414 | 517 | 1220 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 265 | | 0 | 350 | | 285 | 275 | | 275 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.81 | 1.00 | 0.91 | 0.91 | 0.88 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.991 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3360 | 2787 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.991 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3360 | 2787 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 411 | | | 777 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 409 | | | 1059 | | | 1024 | | | 527 | |
| Travel Time (s) | | 6.2 | | | 16.0 | | | 15.5 | | | 12.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 33 | 944 | 0 | 0 | 1623 | 411 | 460 | 574 | 1356 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 27% | | | | | |
| Lane Group Flow (vph) | 33 | 944 | 0 | 0 | 1623 | 411 | 336 | 698 | 1356 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | L NA | Right | Left | Left | Right | Left | Left | R NA | Left | Left | Right |
| Median Width(ft) | | 24 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | Free | | | |
| Protected Phases | 4 | 3 4 | | | 3 | | | 1 6 | | | | |
| Permitted Phases | | | | | | 3 | 1 6 | | Free | | | |

| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 | Ø8 |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | | | | | | |
| Future Volume (vph) | | | | | | |
| Ideal Flow (vphpl) | | | | | | |
| Storage Length (ft) | | | | | | |
| Storage Lanes | | | | | | |
| Taper Length (ft) | | | | | | |
| Lane Util. Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | | | | | | |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | | | | | | |
| Right Turn on Red | | | | | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | | | | | |
| Link Distance (ft) | | | | | | |
| Travel Time (s) | | | | | | |
| Peak Hour Factor | | | | | | |
| Adj. Flow (vph) | | | | | | |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | | | | | | |
| Enter Blocked Intersection | | | | | | |
| Lane Alignment | | | | | | |
| Median Width(ft) | | | | | | |
| Link Offset(ft) | | | | | | |
| Crosswalk Width(ft) | | | | | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | | | | | | |
| Turning Speed (mph) | | | | | | |
| Number of Detectors | | | | | | |
| Detector Template | | | | | | |
| Leading Detector (ft) | | | | | | |
| Trailing Detector (ft) | | | | | | |
| Detector 1 Position(ft) | | | | | | |
| Detector 1 Size(ft) | | | | | | |
| Detector 1 Type | | | | | | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | | | | | | |
| Detector 1 Queue (s) | | | | | | |
| Detector 1 Delay (s) | | | | | | |
| Detector 2 Position(ft) | | | | | | |
| Detector 2 Size(ft) | | | | | | |
| Detector 2 Type | | | | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | | | | |
| Turn Type | | | | | | |
| Protected Phases | 1 | 2 | 5 | 6 | 7 | 8 |
| Permitted Phases | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 4 | 3 4 | | | 3 | 3 | 1 6 | 1 6 | | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 10.0 | 10.0 | | | | | | |
| Minimum Split (s) | 11.0 | | | | 26.7 | 26.7 | | | | | | |
| Total Split (s) | 39.0 | | | | 42.0 | 42.0 | | | | | | |
| Total Split (%) | 32.5% | | | | 35.0% | 35.0% | | | | | | |
| Maximum Green (s) | 33.0 | | | | 36.3 | 36.3 | | | | | | |
| Yellow Time (s) | 4.0 | | | | 4.7 | 4.7 | | | | | | |
| All-Red Time (s) | 2.0 | | | | 1.0 | 1.0 | | | | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | 0.0 | | | | | | |
| Total Lost Time (s) | 6.0 | | | | 5.7 | 5.7 | | | | | | |
| Lead/Lag | Lag | | | | Lead | Lead | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 5.0 | 5.0 | | | | | | |
| Recall Mode | None | | | | C-Min | C-Min | | | | | | |
| Walk Time (s) | | | | | 4.0 | 4.0 | | | | | | |
| Flash Dont Walk (s) | | | | | 17.0 | 17.0 | | | | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | 0 | | | | | | |
| Act Effct Green (s) | 32.5 | 76.0 | | | 37.5 | 37.5 | 32.3 | 32.3 | 120.0 | | | |
| Actuated g/C Ratio | 0.27 | 0.63 | | | 0.31 | 0.31 | 0.27 | 0.27 | 1.00 | | | |
| v/c Ratio | 0.07 | 0.42 | | | 0.69 | 0.53 | 0.78 | 0.77 | 0.49 | | | |
| Control Delay | 22.5 | 3.1 | | | 32.1 | 7.2 | 54.0 | 47.0 | 0.6 | | | |
| Queue Delay | 0.0 | 1.0 | | | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 22.5 | 4.1 | | | 33.3 | 7.2 | 54.0 | 47.0 | 0.6 | | | |
| LOS | C | A | | | C | A | D | D | A | | | |
| Approach Delay | | 4.7 | | | 28.0 | | | 21.7 | | | | |
| Approach LOS | | A | | | C | | | C | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 47 (39%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 140 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.80 | | | |
| Intersection Signal Delay: 21.0 | | Intersection LOS: C | |
| Intersection Capacity Utilization 80.5% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 2: Loop 101 NB Frontage Rd & Pima Rd



| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 | Ø8 |
|---|---|---|---|---|---|---|
| Detector Phase | | | | | | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 7.0 | 1.0 | 7.0 | 5.0 |
| Minimum Split (s) | 13.0 | 7.0 | 50.0 | 7.0 | 26.7 | 11.0 |
| Total Split (s) | 21.0 | 11.0 | 36.0 | 18.0 | 21.0 | 52.0 |
| Total Split (%) | 18% | 9% | 30% | 15% | 18% | 43% |
| Maximum Green (s) | 15.0 | 5.0 | 30.0 | 12.0 | 15.3 | 46.0 |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.7 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 |
| Lost Time Adjust (s) | | | | | | |
| Total Lost Time (s) | | | | | | |
| Lead/Lag | Lag | Lead | Lag | Lead | Lead | Lag |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | None | None | None | C-Min |
| Walk Time (s) | | | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | | 40.0 | | 17.0 | |
| Pedestrian Calls (#/hr) | | | 0 | | 0 | |
| Act Effct Green (s) | | | | | | |
| Actuated g/C Ratio | | | | | | |
| v/c Ratio | | | | | | |
| Control Delay | | | | | | |
| Queue Delay | | | | | | |
| Total Delay | | | | | | |
| LOS | | | | | | |
| Approach Delay | | | | | | |
| Approach LOS | | | | | | |

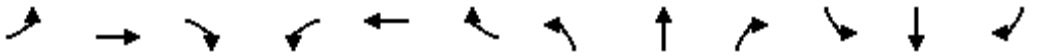
| Intersection Summary |
|---|

## 2: Loop 101 NB Frontage Rd & Pima Rd

| Lane Group | EBL | EBT | WBT | WBR | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 33 | 944 | 1623 | 411 | 336 | 698 | 1356 |
| v/c Ratio | 0.07 | 0.42 | 0.69 | 0.53 | 0.78 | 0.77 | 0.49 |
| Control Delay | 22.5 | 3.1 | 32.1 | 7.2 | 54.0 | 47.0 | 0.6 |
| Queue Delay | 0.0 | 1.0 | 1.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 22.5 | 4.1 | 33.3 | 7.2 | 54.0 | 47.0 | 0.6 |
| Queue Length 50th (ft) | 10 | 87 | 279 | 93 | 262 | 272 | 0 |
| Queue Length 95th (ft) | m22 | 101 | 315 | 163 | #397 | 347 | 0 |
| Internal Link Dist (ft) | | 329 | 979 | | | 944 | |
| Turn Bay Length (ft) | 265 | | | 285 | 275 | | 275 |
| Base Capacity (vph) | 486 | 2221 | 2356 | 777 | 442 | 924 | 2787 |
| Starvation Cap Reductn | 0 | 948 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 466 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.07 | 0.74 | 0.86 | 0.53 | 0.76 | 0.76 | 0.49 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 354 | 126 | 568 | 541 | 0 | 0 | 0 | 0 | 823 | 166 | 44 |
| Future Volume (vph) | 0 | 354 | 126 | 568 | 541 | 0 | 0 | 0 | 0 | 823 | 166 | 44 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 240 | | 315 | 220 | | 0 | 0 | | 0 | 385 | | 385 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.86 | 1.00 | 0.97 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.999 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.966 | |
| Satd. Flow (prot) | 0 | 6408 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3092 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.966 | |
| Satd. Flow (perm) | 0 | 6408 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3092 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 148 | | | | | | | | 1 | 76 |
| Link Speed (mph) | | 45 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 824 | | | 389 | | | 598 | | | 1243 | |
| Travel Time (s) | | 12.5 | | | 5.9 | | | 13.6 | | | 18.8 | |
| Peak Hour Factor | 0.25 | 0.85 | 0.85 | 0.89 | 0.89 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 416 | 148 | 638 | 608 | 0 | 0 | 0 | 0 | 914 | 184 | 49 |
| Shared Lane Traffic (%) | | | | | | | | | | 50% | | 10% |
| Lane Group Flow (vph) | 0 | 416 | 148 | 638 | 608 | 0 | 0 | 0 | 0 | 457 | 646 | 44 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | | | | | 2 | |
| Permitted Phases | | | 8 | | | | | | | 2 | | 2 |

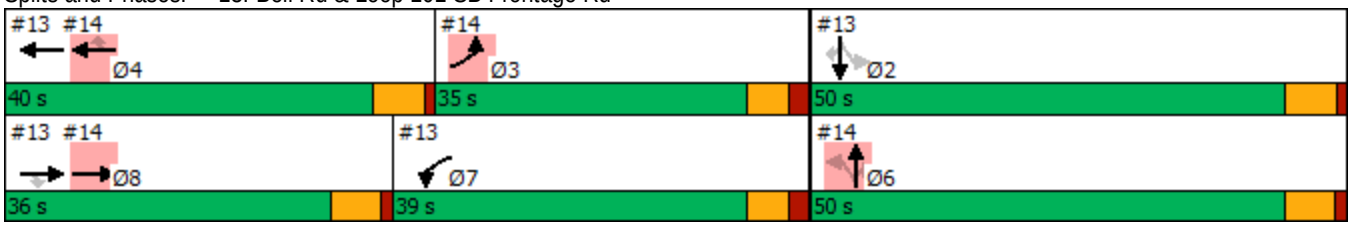
| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 3 | 6 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 8 | 8 | 7 | 4 | | | | | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 10.0 | 10.0 | 5.0 | 10.0 | | | | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | | 35.7 | 35.7 | 11.0 | 39.7 | | | | | 50.9 | 50.9 | 50.9 |
| Total Split (s) | | 36.0 | 36.0 | 39.0 | 40.0 | | | | | 50.0 | 50.0 | 50.0 |
| Total Split (%) | | 28.8% | 28.8% | 31.2% | 32.0% | | | | | 40.0% | 40.0% | 40.0% |
| Maximum Green (s) | | 30.3 | 30.3 | 33.0 | 34.3 | | | | | 44.1 | 44.1 | 44.1 |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | 4.7 | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | 1.0 | | | | | 1.2 | 1.2 | 1.2 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | 5.7 | | | | | 5.9 | 5.9 | 5.9 |
| Lead/Lag | | Lead | Lead | Lag | Lead | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | 2.0 | 2.0 | 2.0 |
| Recall Mode | | Min | Min | None | None | | | | | None | None | None |
| Walk Time (s) | | 7.0 | 7.0 | | 8.0 | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 23.0 | 23.0 | | 26.0 | | | | | 38.0 | 38.0 | 38.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 30.8 | 30.8 | 24.6 | 27.4 | | | | | 35.6 | 35.6 | 35.6 |
| Actuated g/C Ratio | | 0.28 | 0.28 | 0.23 | 0.25 | | | | | 0.33 | 0.33 | 0.33 |
| v/c Ratio | | 0.23 | 0.27 | 0.82 | 0.68 | | | | | 0.87 | 0.87dl | 0.08 |
| Control Delay | | 32.6 | 7.3 | 54.7 | 17.7 | | | | | 53.0 | 34.5 | 2.0 |
| Queue Delay | | 0.2 | 0.0 | 0.2 | 0.0 | | | | | 0.1 | 0.0 | 0.0 |
| Total Delay | | 32.8 | 7.3 | 54.9 | 17.8 | | | | | 53.1 | 34.5 | 2.0 |
| LOS | | C | A | D | B | | | | | D | C | A |
| Approach Delay | | 26.1 | | | 36.8 | | | | | | 40.7 | |
| Approach LOS | | C | | | D | | | | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 125 | | | |
| Actuated Cycle Length: 108.9 | | | |
| Natural Cycle: 105 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.89 | | | |
| Intersection Signal Delay: 36.3 | | Intersection LOS: D | |
| Intersection Capacity Utilization 60.3% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

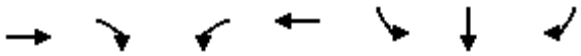
Splits and Phases: 13: Bell Rd & Loop 101 SB Frontage Rd



| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 5.0 | 7.0 |
| Minimum Split (s) | 11.0 | 48.0 |
| Total Split (s) | 35.0 | 50.0 |
| Total Split (%) | 28% | 40% |
| Maximum Green (s) | 29.0 | 44.0 |
| Yellow Time (s) | 4.0 | 4.7 |
| All-Red Time (s) | 2.0 | 1.3 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lag | |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | Min | None |
| Walk Time (s) | | 7.0 |
| Flash Dont Walk (s) | | 35.0 |
| Pedestrian Calls (#/hr) | | 0 |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|

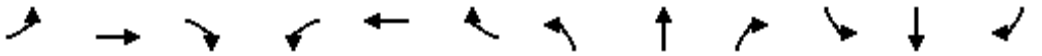
## 13: Bell Rd & Loop 101 SB Frontage Rd



| Lane Group | EBT | EBR | WBL | WBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 416 | 148 | 638 | 608 | 457 | 646 | 44 |
| v/c Ratio | 0.23 | 0.27 | 0.82 | 0.68 | 0.87 | 0.87dl | 0.08 |
| Control Delay | 32.6 | 7.3 | 54.7 | 17.7 | 53.0 | 34.5 | 2.0 |
| Queue Delay | 0.2 | 0.0 | 0.2 | 0.0 | 0.1 | 0.0 | 0.0 |
| Total Delay | 32.8 | 7.3 | 54.9 | 17.8 | 53.1 | 34.5 | 2.0 |
| Queue Length 50th (ft) | 66 | 0 | 253 | 96 | 326 | 220 | 0 |
| Queue Length 95th (ft) | 98 | 44 | 342 | 131 | #548 | 316 | 9 |
| Internal Link Dist (ft) | 744 | | | 309 | | 1163 | |
| Turn Bay Length (ft) | | 315 | 220 | | 385 | | 385 |
| Base Capacity (vph) | 1813 | 554 | 1058 | 1133 | 663 | 1274 | 638 |
| Starvation Cap Reductn | 0 | 0 | 71 | 28 | 0 | 0 | 0 |
| Spillback Cap Reductn | 681 | 0 | 0 | 0 | 8 | 10 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.37 | 0.27 | 0.65 | 0.55 | 0.70 | 0.51 | 0.07 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.



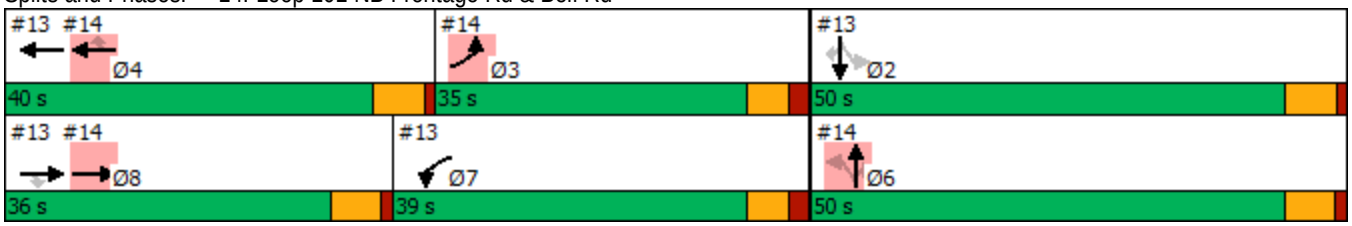
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 19 | 1158 | 0 | 0 | 708 | 387 | 402 | 301 | 577 | 0 | 0 | 0 |
| Future Volume (vph) | 19 | 1158 | 0 | 0 | 708 | 387 | 402 | 301 | 577 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 220 | | 0 | 235 | | 175 | 310 | | 310 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 0.86 | 1.00 | 0.91 | 0.86 | 0.91 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | 0.936 | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.995 | | | | |
| Satd. Flow (prot) | 1770 | 5085 | 0 | 0 | 6408 | 1583 | 1610 | 2984 | 1441 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.995 | | | | |
| Satd. Flow (perm) | 1770 | 5085 | 0 | 0 | 6408 | 1583 | 1610 | 2984 | 1441 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 430 | | 126 | 333 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 389 | | | 797 | | | 655 | | | 974 | |
| Travel Time (s) | | 5.9 | | | 12.1 | | | 9.9 | | | 22.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.89 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 21 | 1287 | 0 | 0 | 796 | 430 | 447 | 334 | 641 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 17% | | 48% | | | |
| Lane Group Flow (vph) | 21 | 1287 | 0 | 0 | 796 | 430 | 371 | 718 | 333 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | Perm | | | |
| Protected Phases | 3 | 8 | | | 4 | | | 6 | | | | |
| Permitted Phases | | | | | | 4 | 6 | | 6 | | | |

| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 2 | 7 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 3 | 8 | | | 4 | 4 | 6 | 6 | 6 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | | | 10.0 | 10.0 | 7.0 | 7.0 | 7.0 | | | |
| Minimum Split (s) | 11.0 | 35.7 | | | 39.7 | 39.7 | 48.0 | 48.0 | 48.0 | | | |
| Total Split (s) | 35.0 | 36.0 | | | 40.0 | 40.0 | 50.0 | 50.0 | 50.0 | | | |
| Total Split (%) | 28.0% | 28.8% | | | 32.0% | 32.0% | 40.0% | 40.0% | 40.0% | | | |
| Maximum Green (s) | 29.0 | 30.3 | | | 34.3 | 34.3 | 44.0 | 44.0 | 44.0 | | | |
| Yellow Time (s) | 4.0 | 4.7 | | | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 2.0 | 1.0 | | | 1.0 | 1.0 | 1.3 | 1.3 | 1.3 | | | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 6.0 | 5.7 | | | 5.7 | 5.7 | 6.0 | 6.0 | 6.0 | | | |
| Lead/Lag | Lag | Lead | | | Lead | Lead | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Recall Mode | Min | Min | | | None | None | None | None | None | | | |
| Walk Time (s) | | 7.0 | | | 8.0 | 8.0 | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | 23.0 | | | 26.0 | 26.0 | 35.0 | 35.0 | 35.0 | | | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 28.1 | 30.8 | | | 27.4 | 27.4 | 35.4 | 35.4 | 35.4 | | | |
| Actuated g/C Ratio | 0.26 | 0.28 | | | 0.25 | 0.25 | 0.33 | 0.33 | 0.33 | | | |
| v/c Ratio | 0.05 | 0.89 | | | 0.49 | 0.60 | 0.71 | 0.68 | 0.48 | | | |
| Control Delay | 53.9 | 36.8 | | | 36.2 | 7.1 | 40.8 | 29.5 | 5.5 | | | |
| Queue Delay | 0.0 | 3.3 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 53.9 | 40.1 | | | 36.3 | 7.1 | 40.8 | 29.6 | 5.5 | | | |
| LOS | D | D | | | D | A | D | C | A | | | |
| Approach Delay | | 40.4 | | | 26.0 | | | 26.9 | | | | |
| Approach LOS | | D | | | C | | | C | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 125 | | | |
| Actuated Cycle Length: 108.9 | | | |
| Natural Cycle: 105 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.89 | | | |
| Intersection Signal Delay: 31.1 | | Intersection LOS: C | |
| Intersection Capacity Utilization 60.3% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Loop 101 NB Frontage Rd & Bell Rd



| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 7.0 | 5.0 |
| Minimum Split (s) | 50.9 | 11.0 |
| Total Split (s) | 50.0 | 39.0 |
| Total Split (%) | 40% | 31% |
| Maximum Green (s) | 44.1 | 33.0 |
| Yellow Time (s) | 4.7 | 4.0 |
| All-Red Time (s) | 1.2 | 2.0 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | | Lag |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | None | None |
| Walk Time (s) | 7.0 | |
| Flash Dont Walk (s) | 38.0 | |
| Pedestrian Calls (#/hr) | 0 | |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

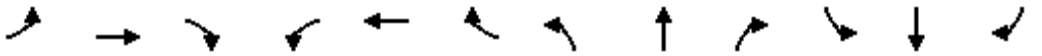
| Intersection Summary |
|---|

## 14: Loop 101 NB Frontage Rd & Bell Rd

| Lane Group | EBL | EBT | WBT | WBR | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 21 | 1287 | 796 | 430 | 371 | 718 | 333 |
| v/c Ratio | 0.05 | 0.89 | 0.49 | 0.60 | 0.71 | 0.68 | 0.48 |
| Control Delay | 53.9 | 36.8 | 36.2 | 7.1 | 40.8 | 29.5 | 5.5 |
| Queue Delay | 0.0 | 3.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 53.9 | 40.1 | 36.3 | 7.1 | 40.8 | 29.6 | 5.5 |
| Queue Length 50th (ft) | 16 | 353 | 140 | 0 | 247 | 207 | 0 |
| Queue Length 95th (ft) | m36 | #522 | 186 | 83 | 400 | 308 | 71 |
| Internal Link Dist (ft) | | 309 | 717 | | | 575 | |
| Turn Bay Length (ft) | 220 | | | 175 | 310 | | 310 |
| Base Capacity (vph) | 479 | 1438 | 2052 | 799 | 661 | 1300 | 788 |
| Starvation Cap Reductn | 0 | 89 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 165 | 0 | 0 | 6 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.04 | 0.95 | 0.42 | 0.54 | 0.56 | 0.55 | 0.42 |

Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | 6 | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1161 | 528 | 252 | 1287 | 0 | 0 | 0 | 0 | 867 | 668 | 563 |
| Future Volume (vph) | 0 | 1161 | 528 | 252 | 1287 | 0 | 0 | 0 | 0 | 867 | 668 | 563 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 185 | | 0 | 0 | | 0 | 0 | | 0 | 250 | | 250 |
| Storage Lanes | 2 | | 1 | 2 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.76 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 0.94 | 0.95 | 1.00 |
| Ped Bike Factor | | | 0.99 | 1.00 | | | | | | | | 0.99 |
| Frt | | | 0.850 | | | | | | | | | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 8097 | 1482 | 3019 | 4940 | 0 | 0 | 0 | 0 | 4627 | 3610 | 1538 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 8097 | 1463 | 3017 | 4940 | 0 | 0 | 0 | 0 | 4627 | 3610 | 1517 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 423 | | | | | | | | | 110 |
| Link Speed (mph) | | 45 | | | 45 | | | 30 | | | 30 | |
| Link Distance (ft) | | 675 | | | 322 | | | 835 | | | 832 | |
| Travel Time (s) | | 10.2 | | | 4.9 | | | 19.0 | | | 18.9 | |
| Confl. Peds. (#/hr) | 1 | | 1 | 1 | | | | | | | | 1 |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.85 | 0.85 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 0% | 7% | 9% | 16% | 5% | 0% | 0% | 0% | 0% | 10% | 0% | 5% |
| Adj. Flow (vph) | 0 | 1290 | 587 | 296 | 1514 | 0 | 0 | 0 | 0 | 963 | 742 | 626 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 1290 | 587 | 296 | 1514 | 0 | 0 | 0 | 0 | 963 | 742 | 626 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 36 | | | 36 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 60 | | 60 | 60 | | 60 | 60 | | 60 | 60 | | 60 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |

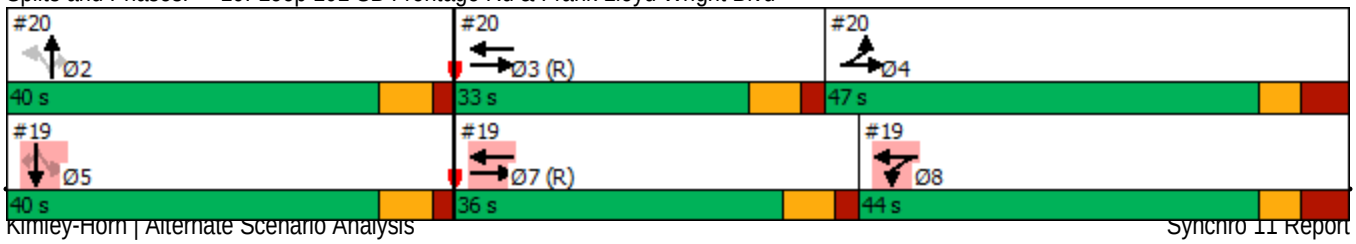
| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | | NA | Free | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 5 | |
| Permitted Phases | | | Free | | | | | | | 5 | | 5 |
| Detector Phase | | 7 | | 8 | 7 8 | | | | | 5 | 5 | 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 5.0 | | 6.0 | | | | | | 6.0 | 6.0 | 6.0 |
| Minimum Split (s) | | 24.8 | | 31.9 | | | | | | 29.7 | 29.7 | 29.7 |
| Total Split (s) | | 36.0 | | 44.0 | | | | | | 40.0 | 40.0 | 40.0 |
| Total Split (%) | | 30.0% | | 36.7% | | | | | | 33.3% | 33.3% | 33.3% |
| Maximum Green (s) | | 29.2 | | 35.7 | | | | | | 33.3 | 33.3 | 33.3 |
| Yellow Time (s) | | 4.7 | | 3.9 | | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 2.1 | | 4.4 | | | | | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.8 | | 8.3 | | | | | | 6.7 | 6.7 | 6.7 |
| Lead/Lag | | Lead | | Lag | | | | | | | | |
| Lead-Lag Optimize? | | Yes | | Yes | | | | | | | | |
| Vehicle Extension (s) | | 0.2 | | 0.2 | | | | | | 0.2 | 0.2 | 0.2 |
| Recall Mode | | C-Max | | None | | | | | | None | None | None |
| Walk Time (s) | | 7.0 | | | | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 11.0 | | | | | | | | 16.0 | 16.0 | 16.0 |
| Pedestrian Calls (#/hr) | | 0 | | | | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 29.2 | 120.0 | 19.4 | 56.9 | | | | | 49.6 | 49.6 | 49.6 |
| Actuated g/C Ratio | | 0.24 | 1.00 | 0.16 | 0.47 | | | | | 0.41 | 0.41 | 0.41 |
| v/c Ratio | | 0.65 | 0.40 | 0.61 | 0.65 | | | | | 0.50 | 0.50 | 0.91 |
| Control Delay | | 42.7 | 0.8 | 54.3 | 27.5 | | | | | 27.8 | 28.1 | 46.2 |
| Queue Delay | | 0.6 | 0.0 | 0.0 | 1.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 43.3 | 0.8 | 54.3 | 28.5 | | | | | 27.8 | 28.1 | 46.2 |
| LOS | | D | A | D | C | | | | | C | C | D |
| Approach Delay | | 30.0 | | | 32.7 | | | | | | 32.8 | |
| Approach LOS | | C | | | C | | | | | | C | |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 31.9 Intersection LOS: C
Intersection Capacity Utilization 94.1% ICU Level of Service F
Analysis Period (min) 15

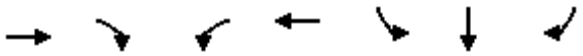
Splits and Phases: 19: Loop 101 SB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 2 | 3 | 4 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.7 | 24.8 | 13.3 |
| Total Split (s) | 40.0 | 33.0 | 47.0 |
| Total Split (%) | 33% | 28% | 39% |
| Maximum Green (s) | 33.3 | 26.2 | 38.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | | |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|

## 19: Loop 101 SB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | EBT | EBR | WBL | WBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 1290 | 587 | 296 | 1514 | 963 | 742 | 626 |
| v/c Ratio | 0.65 | 0.40 | 0.61 | 0.65 | 0.50 | 0.50 | 0.91 |
| Control Delay | 42.7 | 0.8 | 54.3 | 27.5 | 27.8 | 28.1 | 46.2 |
| Queue Delay | 0.6 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 43.3 | 0.8 | 54.3 | 28.5 | 27.8 | 28.1 | 46.2 |
| Queue Length 50th (ft) | 198 | 0 | 126 | 458 | 193 | 221 | 387 |
| Queue Length 95th (ft) | 228 | 0 | 164 | 480 | 252 | 299 | #672 |
| Internal Link Dist (ft) | 595 | | | 242 | | 752 | |
| Turn Bay Length (ft) | | | | | 250 | | 250 |
| Base Capacity (vph) | 1970 | 1463 | 898 | 3013 | 1913 | 1493 | 691 |
| Starvation Cap Reductn | 0 | 0 | 0 | 1131 | 0 | 0 | 0 |
| Spillback Cap Reductn | 313 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.78 | 0.40 | 0.33 | 0.80 | 0.50 | 0.50 | 0.91 |

Intersection Summary

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

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 621 | 1407 | 0 | 0 | 832 | 1127 | 707 | 888 | 96 | 0 | 0 | 0 |
| Future Volume (vph) | 621 | 1407 | 0 | 0 | 832 | 1127 | 707 | 888 | 96 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 245 | | 150 | 250 | | 250 | 0 | | 0 |
| Storage Lanes | 3 | | 0 | 2 | | 2 | 2 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.94 | 0.86 | 1.00 | 1.00 | 0.81 | 0.88 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (prot) | 4627 | 6166 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (perm) | 4627 | 6166 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 575 | | | 110 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 45 | |
| Link Distance (ft) | | 322 | | | 1160 | | | 836 | | | 801 | |
| Travel Time (s) | | 4.9 | | | 17.6 | | | 12.7 | | | 12.1 | |
| Confl. Peds. (#/hr) | | | 1 | | | | | | | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.85 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Heavy Vehicles (%) | 10% | 6% | 0% | 0% | 6% | 14% | 2% | 0% | 2% | 0% | 0% | 0% |
| Adj. Flow (vph) | 690 | 1563 | 0 | 0 | 979 | 1252 | 786 | 987 | 107 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 690 | 1563 | 0 | 0 | 979 | 1252 | 786 | 987 | 107 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 36 | | | 36 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 60 | | 60 | 60 | | 60 | 60 | | 60 | 60 | | 60 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |

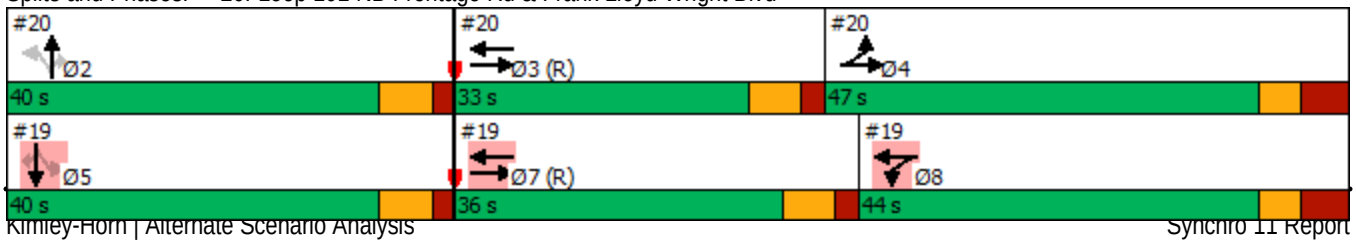
| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Prot | NA | | | NA | Free | Perm | NA | Perm | | | |
| Protected Phases | 4 | 3 4 | | | 3 | | | 2 | | | | |
| Permitted Phases | | | | | | Free | 2 | | 2 | | | |
| Detector Phase | 4 | 3 4 | | | 3 | | 2 | 2 | 2 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 5.0 | | 5.0 | 5.0 | 5.0 | | | |
| Minimum Split (s) | 13.3 | | | | 24.8 | | 24.7 | 24.7 | 24.7 | | | |
| Total Split (s) | 47.0 | | | | 33.0 | | 40.0 | 40.0 | 40.0 | | | |
| Total Split (%) | 39.2% | | | | 27.5% | | 33.3% | 33.3% | 33.3% | | | |
| Maximum Green (s) | 38.7 | | | | 26.2 | | 33.3 | 33.3 | 33.3 | | | |
| Yellow Time (s) | 3.9 | | | | 4.7 | | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 4.4 | | | | 2.1 | | 2.0 | 2.0 | 2.0 | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 8.3 | | | | 6.8 | | 6.7 | 6.7 | 6.7 | | | |
| Lead/Lag | Lag | | | | Lead | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 0.2 | | | | 0.2 | | 0.2 | 0.2 | 0.2 | | | |
| Recall Mode | None | | | | C-Max | | None | None | None | | | |
| Walk Time (s) | | | | | 7.0 | | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | | | | 11.0 | | 11.0 | 11.0 | 11.0 | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 22.4 | 56.9 | | | 26.2 | 120.0 | 49.6 | 49.6 | 49.6 | | | |
| Actuated g/C Ratio | 0.19 | 0.47 | | | 0.22 | 1.00 | 0.41 | 0.41 | 0.41 | | | |
| v/c Ratio | 0.80 | 0.54 | | | 0.62 | 0.50 | 0.55 | 0.46 | 0.15 | | | |
| Control Delay | 54.8 | 22.4 | | | 44.3 | 0.7 | 29.3 | 26.9 | 4.8 | | | |
| Queue Delay | 0.1 | 0.3 | | | 2.7 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 54.9 | 22.7 | | | 47.1 | 0.7 | 29.3 | 26.9 | 4.8 | | | |
| LOS | D | C | | | D | A | C | C | A | | | |
| Approach Delay | | 32.6 | | | 21.1 | | | 26.6 | | | | |
| Approach LOS | | C | | | C | | | C | | | | |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 26.8 Intersection LOS: C
Intersection Capacity Utilization 94.1% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 20: Loop 101 NB Frontage Rd & Frank Lloyd Wright Blvd



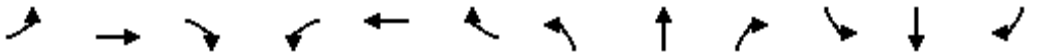
| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 5 | 7 | 8 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 6.0 | 5.0 | 6.0 |
| Minimum Split (s) | 29.7 | 24.8 | 31.9 |
| Total Split (s) | 40.0 | 36.0 | 44.0 |
| Total Split (%) | 33% | 30% | 37% |
| Maximum Green (s) | 33.3 | 29.2 | 35.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | Yes | Yes |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 16.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|

## 20: Loop 101 NB Frontage Rd & Frank Lloyd Wright Blvd

| Lane Group | EBL | EBT | WBT | WBR | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 690 | 1563 | 979 | 1252 | 786 | 987 | 107 |
| v/c Ratio | 0.80 | 0.54 | 0.62 | 0.50 | 0.55 | 0.46 | 0.15 |
| Control Delay | 54.8 | 22.4 | 44.3 | 0.7 | 29.3 | 26.9 | 4.8 |
| Queue Delay | 0.1 | 0.3 | 2.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 54.9 | 22.7 | 47.1 | 0.7 | 29.3 | 26.9 | 4.8 |
| Queue Length 50th (ft) | 203 | 358 | 170 | 0 | 236 | 200 | 0 |
| Queue Length 95th (ft) | 246 | 403 | 189 | 0 | 319 | 259 | 35 |
| Internal Link Dist (ft) | | 242 | 1080 | | | 756 | |
| Turn Bay Length (ft) | | | | 150 | 250 | | 250 |
| Base Capacity (vph) | 1492 | 3761 | 1584 | 2493 | 1420 | 2145 | 719 |
| Starvation Cap Reductn | 126 | 1332 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 469 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.51 | 0.64 | 0.88 | 0.50 | 0.55 | 0.46 | 0.15 |

Intersection Summary



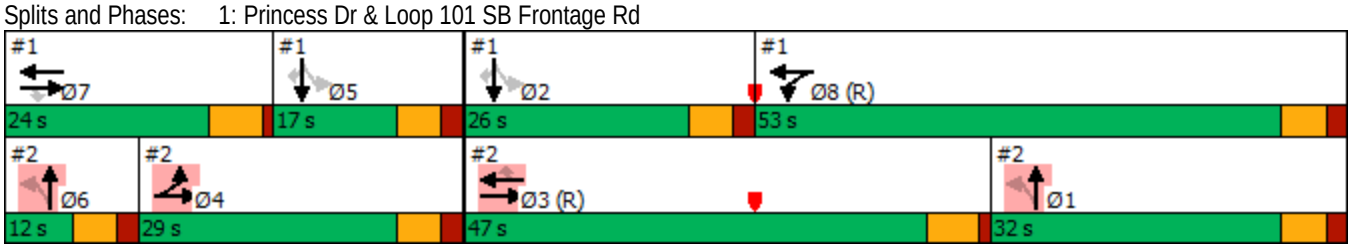
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 416 | 379 | 1198 | 327 | 0 | 0 | 0 | 0 | 444 | 438 | 69 |
| Future Volume (vph) | 0 | 416 | 379 | 1198 | 327 | 0 | 0 | 0 | 0 | 444 | 438 | 69 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 140 | | 245 | 240 | | 0 | 0 | | 0 | 355 | | 355 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 0.88 | 0.94 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.86 | 0.81 | 0.86 |
| Frt | | | 0.850 | | | | | | | | 0.998 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.984 | |
| Satd. Flow (prot) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1522 | 4445 | 1362 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.984 | |
| Satd. Flow (perm) | 0 | 5085 | 2787 | 4990 | 3539 | 0 | 0 | 0 | 0 | 1522 | 4445 | 1362 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 188 | | | | | | | | 1 | 185 |
| Link Speed (mph) | | 35 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 1345 | | | 409 | | | 1261 | | | 718 | |
| Travel Time (s) | | 26.2 | | | 6.2 | | | 28.7 | | | 10.9 | |
| Peak Hour Factor | 0.25 | 0.85 | 0.85 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 489 | 446 | 1331 | 363 | 0 | 0 | 0 | 0 | 493 | 487 | 77 |
| Shared Lane Traffic (%) | | | | | | | | | | 50% | | 10% |
| Lane Group Flow (vph) | 0 | 489 | 446 | 1331 | 363 | 0 | 0 | 0 | 0 | 246 | 742 | 69 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Right | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 36 | | | 36 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 2 5 | |
| Permitted Phases | | | 7 | | | | | | | 2 5 | | 2 5 |

| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | | | | | | |
| Future Volume (vph) | | | | | | |
| Ideal Flow (vphpl) | | | | | | |
| Storage Length (ft) | | | | | | |
| Storage Lanes | | | | | | |
| Taper Length (ft) | | | | | | |
| Lane Util. Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | | | | | | |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | | | | | | |
| Right Turn on Red | | | | | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | | | | | |
| Link Distance (ft) | | | | | | |
| Travel Time (s) | | | | | | |
| Peak Hour Factor | | | | | | |
| Adj. Flow (vph) | | | | | | |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | | | | | | |
| Enter Blocked Intersection | | | | | | |
| Lane Alignment | | | | | | |
| Median Width(ft) | | | | | | |
| Link Offset(ft) | | | | | | |
| Crosswalk Width(ft) | | | | | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | | | | | | |
| Turning Speed (mph) | | | | | | |
| Number of Detectors | | | | | | |
| Detector Template | | | | | | |
| Leading Detector (ft) | | | | | | |
| Trailing Detector (ft) | | | | | | |
| Detector 1 Position(ft) | | | | | | |
| Detector 1 Size(ft) | | | | | | |
| Detector 1 Type | | | | | | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | | | | | | |
| Detector 1 Queue (s) | | | | | | |
| Detector 1 Delay (s) | | | | | | |
| Detector 2 Position(ft) | | | | | | |
| Detector 2 Size(ft) | | | | | | |
| Detector 2 Type | | | | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | | | | |
| Turn Type | | | | | | |
| Protected Phases | 1 | 2 | 3 | 4 | 5 | 6 |
| Permitted Phases | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 7 | 7 | 8 | 7 8 | | | | | 2 5 | 2 5 | 2 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 7.0 | 7.0 | 5.0 | | | | | | | | |
| Minimum Split (s) | | 26.7 | 26.7 | 11.0 | | | | | | | | |
| Total Split (s) | | 24.0 | 24.0 | 53.0 | | | | | | | | |
| Total Split (%) | | 20.0% | 20.0% | 44.2% | | | | | | | | |
| Maximum Green (s) | | 18.3 | 18.3 | 47.0 | | | | | | | | |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | | | | | | | | |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | | | | | | | | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | | | | | | | | |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | | | | | | | | |
| Lead/Lag | | Lead | Lead | Lag | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | | | | | | | | |
| Recall Mode | | None | None | C-Min | | | | | | | | |
| Walk Time (s) | | 4.0 | 4.0 | | | | | | | | | |
| Flash Dont Walk (s) | | 17.0 | 17.0 | | | | | | | | | |
| Pedestrian Calls (#/hr) | | 0 | 0 | | | | | | | | | |
| Act Effct Green (s) | | 17.0 | 17.0 | 53.2 | 76.3 | | | | | 32.0 | 32.0 | 32.0 |
| Actuated g/C Ratio | | 0.14 | 0.14 | 0.44 | 0.64 | | | | | 0.27 | 0.27 | 0.27 |
| v/c Ratio | | 0.68 | 0.80 | 0.60 | 0.16 | | | | | 0.61 | 0.63 | 0.14 |
| Control Delay | | 53.8 | 40.1 | 14.0 | 6.0 | | | | | 44.8 | 40.8 | 0.6 |
| Queue Delay | | 0.0 | 0.0 | 2.7 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 53.8 | 40.1 | 16.6 | 6.0 | | | | | 44.8 | 40.8 | 0.6 |
| LOS | | D | D | B | A | | | | | D | D | A |
| Approach Delay | | 47.3 | | | 14.4 | | | | | | 39.1 | |
| Approach LOS | | D | | | B | | | | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 23 (19%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.92 | | | |
| Intersection Signal Delay: 29.8 | | Intersection LOS: C | |
| Intersection Capacity Utilization 78.3% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

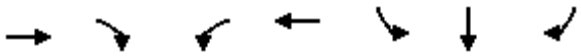
Splits and Phases: 1: Princess Dr & Loop 101 SB Frontage Rd



| Lane Group | Ø1 | Ø2 | Ø3 | Ø4 | Ø5 | Ø6 |
|---|---|---|---|---|---|---|
| Detector Phase | | | | | | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 10.0 | 5.0 | 7.0 | 1.0 |
| Minimum Split (s) | 13.0 | 7.0 | 26.7 | 11.0 | 50.0 | 7.0 |
| Total Split (s) | 32.0 | 26.0 | 47.0 | 29.0 | 17.0 | 12.0 |
| Total Split (%) | 27% | 22% | 39% | 24% | 14% | 10% |
| Maximum Green (s) | 26.0 | 20.0 | 41.3 | 23.0 | 11.0 | 6.0 |
| Yellow Time (s) | 4.0 | 4.0 | 4.7 | 4.0 | 4.0 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | | | | | |
| Total Lost Time (s) | | | | | | |
| Lead/Lag | Lag | Lead | Lead | Lag | Lag | Lead |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 5.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | C-Min | None | None | None |
| Walk Time (s) | | | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | | 17.0 | | 40.0 | |
| Pedestrian Calls (#/hr) | | | 0 | | 0 | |
| Act Effct Green (s) | | | | | | |
| Actuated g/C Ratio | | | | | | |
| v/c Ratio | | | | | | |
| Control Delay | | | | | | |
| Queue Delay | | | | | | |
| Total Delay | | | | | | |
| LOS | | | | | | |
| Approach Delay | | | | | | |
| Approach LOS | | | | | | |

| Intersection Summary |
|---|

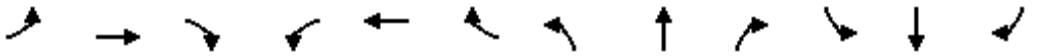
## 1: Princess Dr & Loop 101 SB Frontage Rd



| Lane Group | EBT | EBR | WBL | WBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 489 | 446 | 1331 | 363 | 246 | 742 | 69 |
| v/c Ratio | 0.68 | 0.80 | 0.60 | 0.16 | 0.61 | 0.63 | 0.14 |
| Control Delay | 53.8 | 40.1 | 14.0 | 6.0 | 44.8 | 40.8 | 0.6 |
| Queue Delay | 0.0 | 0.0 | 2.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 53.8 | 40.1 | 16.6 | 6.0 | 44.8 | 40.8 | 0.6 |
| Queue Length 50th (ft) | 131 | 110 | 298 | 74 | 194 | 208 | 0 |
| Queue Length 95th (ft) | 160 | 159 | m390 | m122 | 280 | 243 | 0 |
| Internal Link Dist (ft) | 1265 | | | 329 | | 638 | |
| Turn Bay Length (ft) | | 245 | 240 | | 355 | | 355 |
| Base Capacity (vph) | 775 | 584 | 2213 | 2286 | 485 | 1418 | 559 |
| Starvation Cap Reductn | 0 | 0 | 733 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.63 | 0.76 | 0.90 | 0.16 | 0.51 | 0.52 | 0.12 |

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.



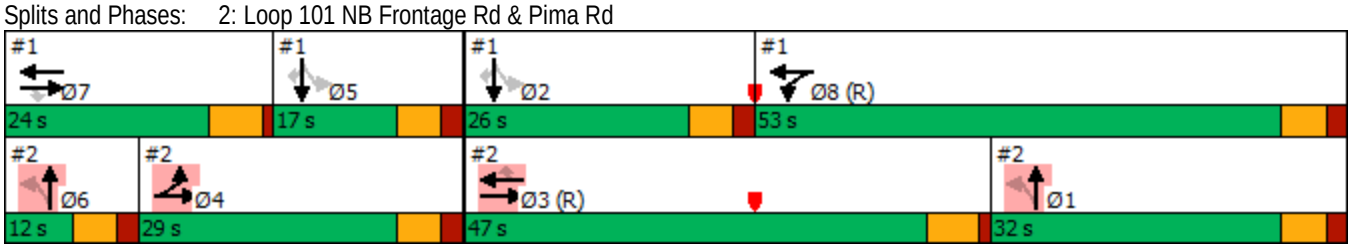
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 243 | 625 | 0 | 0 | 1290 | 478 | 237 | 862 | 1168 | 0 | 0 | 0 |
| Future Volume (vph) | 243 | 625 | 0 | 0 | 1290 | 478 | 237 | 862 | 1168 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 265 | | 0 | 350 | | 285 | 275 | | 275 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 0.81 | 1.00 | 0.91 | 0.91 | 0.88 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.999 | | | | |
| Satd. Flow (prot) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3387 | 2787 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.999 | | | | |
| Satd. Flow (perm) | 1770 | 3539 | 0 | 0 | 7544 | 1583 | 1610 | 3387 | 2787 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 188 | | | 792 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 409 | | | 1059 | | | 1024 | | | 527 | |
| Travel Time (s) | | 6.2 | | | 16.0 | | | 15.5 | | | 12.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 270 | 694 | 0 | 0 | 1433 | 531 | 263 | 958 | 1298 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 10% | | | | | |
| Lane Group Flow (vph) | 270 | 694 | 0 | 0 | 1433 | 531 | 237 | 984 | 1298 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | L NA | Right | Left | Left | Right | Left | Left | R NA | Left | Left | Right |
| Median Width(ft) | | 24 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | Free | | | |
| Protected Phases | 4 | 3 4 | | | 3 | | | 1 6 | | | | |
| Permitted Phases | | | | | | 3 | 1 6 | | Free | | | |

| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 | Ø8 |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | | | | | | |
| Future Volume (vph) | | | | | | |
| Ideal Flow (vphpl) | | | | | | |
| Storage Length (ft) | | | | | | |
| Storage Lanes | | | | | | |
| Taper Length (ft) | | | | | | |
| Lane Util. Factor | | | | | | |
| Frt | | | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | | | | | | |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | | | | | | |
| Right Turn on Red | | | | | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | | | | | |
| Link Distance (ft) | | | | | | |
| Travel Time (s) | | | | | | |
| Peak Hour Factor | | | | | | |
| Adj. Flow (vph) | | | | | | |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | | | | | | |
| Enter Blocked Intersection | | | | | | |
| Lane Alignment | | | | | | |
| Median Width(ft) | | | | | | |
| Link Offset(ft) | | | | | | |
| Crosswalk Width(ft) | | | | | | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | | | | | | |
| Turning Speed (mph) | | | | | | |
| Number of Detectors | | | | | | |
| Detector Template | | | | | | |
| Leading Detector (ft) | | | | | | |
| Trailing Detector (ft) | | | | | | |
| Detector 1 Position(ft) | | | | | | |
| Detector 1 Size(ft) | | | | | | |
| Detector 1 Type | | | | | | |
| Detector 1 Channel | | | | | | |
| Detector 1 Extend (s) | | | | | | |
| Detector 1 Queue (s) | | | | | | |
| Detector 1 Delay (s) | | | | | | |
| Detector 2 Position(ft) | | | | | | |
| Detector 2 Size(ft) | | | | | | |
| Detector 2 Type | | | | | | |
| Detector 2 Channel | | | | | | |
| Detector 2 Extend (s) | | | | | | |
| Turn Type | | | | | | |
| Protected Phases | 1 | 2 | 5 | 6 | 7 | 8 |
| Permitted Phases | | | | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 4 | 3 4 | | | 3 | 3 | 1 6 | 1 6 | | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 10.0 | 10.0 | | | | | | |
| Minimum Split (s) | 11.0 | | | | 26.7 | 26.7 | | | | | | |
| Total Split (s) | 29.0 | | | | 47.0 | 47.0 | | | | | | |
| Total Split (%) | 24.2% | | | | 39.2% | 39.2% | | | | | | |
| Maximum Green (s) | 23.0 | | | | 41.3 | 41.3 | | | | | | |
| Yellow Time (s) | 4.0 | | | | 4.7 | 4.7 | | | | | | |
| All-Red Time (s) | 2.0 | | | | 1.0 | 1.0 | | | | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | 0.0 | | | | | | |
| Total Lost Time (s) | 6.0 | | | | 5.7 | 5.7 | | | | | | |
| Lead/Lag | Lag | | | | Lead | Lead | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | | | | 5.0 | 5.0 | | | | | | |
| Recall Mode | None | | | | C-Min | C-Min | | | | | | |
| Walk Time (s) | | | | | 4.0 | 4.0 | | | | | | |
| Flash Dont Walk (s) | | | | | 17.0 | 17.0 | | | | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | 0 | | | | | | |
| Act Effct Green (s) | 23.0 | 70.3 | | | 41.3 | 41.3 | 38.0 | 38.0 | 120.0 | | | |
| Actuated g/C Ratio | 0.19 | 0.59 | | | 0.34 | 0.34 | 0.32 | 0.32 | 1.00 | | | |
| v/c Ratio | 0.80 | 0.33 | | | 0.55 | 0.79 | 0.47 | 0.92 | 0.47 | | | |
| Control Delay | 53.2 | 3.2 | | | 28.5 | 26.3 | 36.5 | 53.6 | 0.6 | | | |
| Queue Delay | 0.0 | 0.5 | | | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | | | |
| Total Delay | 53.2 | 3.7 | | | 28.5 | 26.3 | 36.5 | 53.8 | 0.6 | | | |
| LOS | D | A | | | C | C | D | D | A | | | |
| Approach Delay | | 17.5 | | | 27.9 | | | 24.7 | | | | |
| Approach LOS | | B | | | C | | | C | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 23 (19%), Referenced to phase 8:WBTL and 3:, Start of Green | | | |
| Natural Cycle: 150 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.92 | | | |
| Intersection Signal Delay: 24.6 | | Intersection LOS: C | |
| Intersection Capacity Utilization 78.3% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 2: Loop 101 NB Frontage Rd & Pima Rd



| Lane Group | Ø1 | Ø2 | Ø5 | Ø6 | Ø7 | Ø8 |
|---|---|---|---|---|---|---|
| Detector Phase | | | | | | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 1.0 | 7.0 | 1.0 | 7.0 | 5.0 |
| Minimum Split (s) | 13.0 | 7.0 | 50.0 | 7.0 | 26.7 | 11.0 |
| Total Split (s) | 32.0 | 26.0 | 17.0 | 12.0 | 24.0 | 53.0 |
| Total Split (%) | 27% | 22% | 14% | 10% | 20% | 44% |
| Maximum Green (s) | 26.0 | 20.0 | 11.0 | 6.0 | 18.3 | 47.0 |
| Yellow Time (s) | 4.0 | 4.0 | 4.0 | 4.0 | 4.7 | 4.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 |
| Lost Time Adjust (s) | | | | | | |
| Total Lost Time (s) | | | | | | |
| Lead/Lag | Lag | Lead | Lag | Lead | Lead | Lag |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Recall Mode | None | None | None | None | None | C-Min |
| Walk Time (s) | | | 4.0 | | 4.0 | |
| Flash Dont Walk (s) | | | 40.0 | | 17.0 | |
| Pedestrian Calls (#/hr) | | | 0 | | 0 | |
| Act Effct Green (s) | | | | | | |
| Actuated g/C Ratio | | | | | | |
| v/c Ratio | | | | | | |
| Control Delay | | | | | | |
| Queue Delay | | | | | | |
| Total Delay | | | | | | |
| LOS | | | | | | |
| Approach Delay | | | | | | |
| Approach LOS | | | | | | |

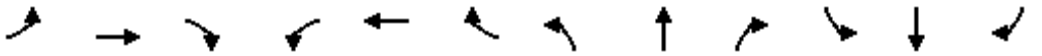
| Intersection Summary |
|---|

## 2: Loop 101 NB Frontage Rd & Pima Rd

| Lane Group | EBL | EBT | WBT | WBR | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 270 | 694 | 1433 | 531 | 237 | 984 | 1298 |
| v/c Ratio | 0.80 | 0.33 | 0.55 | 0.79 | 0.47 | 0.92 | 0.47 |
| Control Delay | 53.2 | 3.2 | 28.5 | 26.3 | 36.5 | 53.6 | 0.6 |
| Queue Delay | 0.0 | 0.5 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 |
| Total Delay | 53.2 | 3.7 | 28.5 | 26.3 | 36.5 | 53.8 | 0.6 |
| Queue Length 50th (ft) | 195 | 141 | 160 | 140 | 161 | 402 | 0 |
| Queue Length 95th (ft) | #321 | 0 | 191 | 233 | 248 | #534 | 0 |
| Internal Link Dist (ft) | | 329 | 979 | | | 944 | |
| Turn Bay Length (ft) | 265 | | | 285 | 275 | | 275 |
| Base Capacity (vph) | 339 | 2073 | 2596 | 668 | 509 | 1072 | 2787 |
| Starvation Cap Reductn | 0 | 854 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 125 | 0 | 2 | 4 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.80 | 0.57 | 0.58 | 0.79 | 0.47 | 0.92 | 0.47 |

Intersection Summary

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



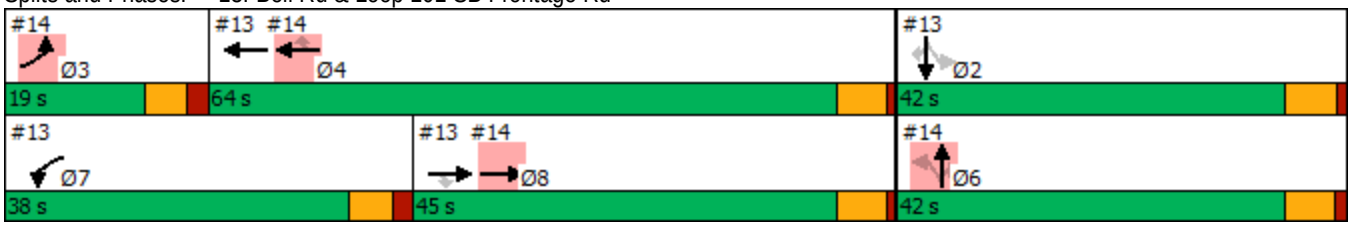
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 380 | 226 | 881 | 389 | 0 | 0 | 0 | 0 | 451 | 170 | 13 |
| Future Volume (vph) | 0 | 380 | 226 | 881 | 389 | 0 | 0 | 0 | 0 | 451 | 170 | 13 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 240 | | 315 | 220 | | 0 | 0 | | 0 | 385 | | 385 |
| Storage Lanes | 1 | | 1 | 0 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.86 | 1.00 | 0.97 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.86 | 0.91 |
| Frt | | | 0.850 | | | | | | | | 0.999 | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | 0.973 | |
| Satd. Flow (prot) | 0 | 6408 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3114 | 1441 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | 0.973 | |
| Satd. Flow (perm) | 0 | 6408 | 1583 | 3433 | 3539 | 0 | 0 | 0 | 0 | 1610 | 3114 | 1441 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 251 | | | | | | | | | 128 |
| Link Speed (mph) | | 45 | | | 45 | | | 30 | | | 45 | |
| Link Distance (ft) | | 824 | | | 389 | | | 598 | | | 1243 | |
| Travel Time (s) | | 12.5 | | | 5.9 | | | 13.6 | | | 18.8 | |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.90 | 0.85 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.85 | 0.80 |
| Adj. Flow (vph) | 0 | 422 | 251 | 979 | 458 | 0 | 0 | 0 | 0 | 501 | 200 | 16 |
| Shared Lane Traffic (%) | | | | | | | | | | 50% | | 10% |
| Lane Group Flow (vph) | 0 | 422 | 251 | 979 | 458 | 0 | 0 | 0 | 0 | 250 | 453 | 14 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |
| Turn Type | | NA | Perm | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 8 | | 7 | 4 | | | | | | 2 | |
| Permitted Phases | | | 8 | | | | | | | 2 | | 2 |

| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 3 | 6 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | | 8 | 8 | 7 | 4 | | | | | 2 | 2 | 2 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 10.0 | 10.0 | 5.0 | 10.0 | | | | | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | | 35.7 | 35.7 | 11.0 | 39.7 | | | | | 50.9 | 50.9 | 50.9 |
| Total Split (s) | | 45.0 | 45.0 | 38.0 | 64.0 | | | | | 42.0 | 42.0 | 42.0 |
| Total Split (%) | | 36.0% | 36.0% | 30.4% | 51.2% | | | | | 33.6% | 33.6% | 33.6% |
| Maximum Green (s) | | 39.3 | 39.3 | 32.0 | 58.3 | | | | | 36.1 | 36.1 | 36.1 |
| Yellow Time (s) | | 4.7 | 4.7 | 4.0 | 4.7 | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 1.0 | 1.0 | 2.0 | 1.0 | | | | | 1.2 | 1.2 | 1.2 |
| Lost Time Adjust (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 5.7 | 5.7 | 6.0 | 5.7 | | | | | 5.9 | 5.9 | 5.9 |
| Lead/Lag | | Lag | Lag | Lead | Lag | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | 2.0 | 2.0 | 2.0 | 2.0 | | | | | 2.0 | 2.0 | 2.0 |
| Recall Mode | | Min | Min | None | None | | | | | None | None | None |
| Walk Time (s) | | 7.0 | 7.0 | | 8.0 | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 23.0 | 23.0 | | 26.0 | | | | | 38.0 | 38.0 | 38.0 |
| Pedestrian Calls (#/hr) | | 0 | 0 | | 0 | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 26.5 | 26.5 | 32.4 | 50.8 | | | | | 30.4 | 30.4 | 30.4 |
| Actuated g/C Ratio | | 0.25 | 0.25 | 0.30 | 0.47 | | | | | 0.28 | 0.28 | 0.28 |
| v/c Ratio | | 0.27 | 0.43 | 0.94 | 0.27 | | | | | 0.55 | 0.51 | 0.03 |
| Control Delay | | 33.0 | 6.5 | 50.8 | 13.9 | | | | | 38.4 | 34.9 | 0.1 |
| Queue Delay | | 0.0 | 0.0 | 3.5 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 33.0 | 6.5 | 54.3 | 13.9 | | | | | 38.4 | 34.9 | 0.1 |
| LOS | | C | A | D | B | | | | | D | C | A |
| Approach Delay | | 23.1 | | | 41.4 | | | | | | 35.4 | |
| Approach LOS | | C | | | D | | | | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 125 | | | |
| Actuated Cycle Length: 107.1 | | | |
| Natural Cycle: 125 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.94 | | | |
| Intersection Signal Delay: 35.5 | | Intersection LOS: D | |
| Intersection Capacity Utilization 68.6% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

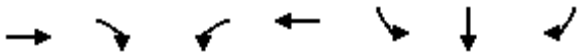
Splits and Phases: 13: Bell Rd & Loop 101 SB Frontage Rd



| Lane Group | Ø3 | Ø6 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 5.0 | 7.0 |
| Minimum Split (s) | 11.0 | 48.0 |
| Total Split (s) | 19.0 | 42.0 |
| Total Split (%) | 15% | 34% |
| Maximum Green (s) | 13.0 | 36.0 |
| Yellow Time (s) | 4.0 | 4.7 |
| All-Red Time (s) | 2.0 | 1.3 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | Lead | |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | Min | None |
| Walk Time (s) | | 7.0 |
| Flash Dont Walk (s) | | 35.0 |
| Pedestrian Calls (#/hr) | | 0 |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

| Intersection Summary |
|---|

## 13: Bell Rd & Loop 101 SB Frontage Rd



| Lane Group | EBT | EBR | WBL | WBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 422 | 251 | 979 | 458 | 250 | 453 | 14 |
| v/c Ratio | 0.27 | 0.43 | 0.94 | 0.27 | 0.55 | 0.51 | 0.03 |
| Control Delay | 33.0 | 6.5 | 50.8 | 13.9 | 38.4 | 34.9 | 0.1 |
| Queue Delay | 0.0 | 0.0 | 3.5 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 33.0 | 6.5 | 54.3 | 13.9 | 38.4 | 34.9 | 0.1 |
| Queue Length 50th (ft) | 69 | 0 | 235 | 64 | 159 | 150 | 0 |
| Queue Length 95th (ft) | 95 | 61 | #538 | 85 | 273 | 213 | 0 |
| Internal Link Dist (ft) | 744 | | | 309 | | 1163 | |
| Turn Bay Length (ft) | | 315 | 220 | | 385 | | 385 |
| Base Capacity (vph) | 2381 | 745 | 1038 | 1951 | 549 | 1062 | 576 |
| Starvation Cap Reductn | 0 | 0 | 31 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.18 | 0.34 | 0.97 | 0.23 | 0.46 | 0.43 | 0.02 |

Intersection Summary

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

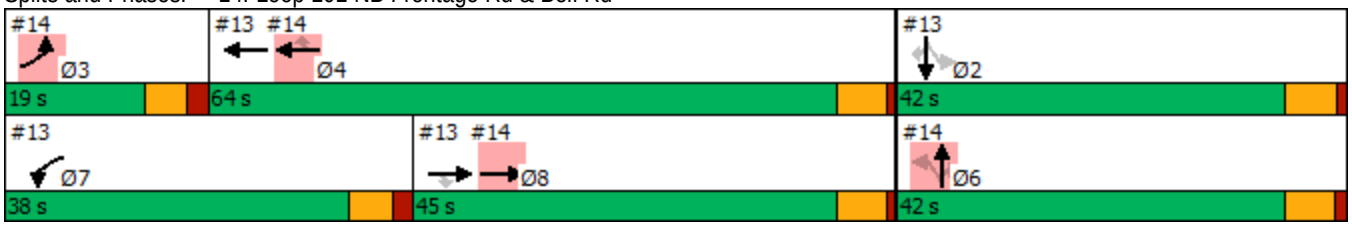
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 47 | 784 | 0 | 0 | 852 | 506 | 418 | 357 | 511 | 0 | 0 | 0 |
| Future Volume (vph) | 47 | 784 | 0 | 0 | 852 | 506 | 418 | 357 | 511 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 220 | | 0 | 235 | | 175 | 310 | | 310 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 2 | | 1 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 0.86 | 1.00 | 0.91 | 0.86 | 0.91 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.850 | | 0.951 | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | 0.993 | | | | |
| Satd. Flow (prot) | 1770 | 5085 | 0 | 0 | 6408 | 1583 | 1610 | 3026 | 1441 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | 0.993 | | | | |
| Satd. Flow (perm) | 1770 | 5085 | 0 | 0 | 6408 | 1583 | 1610 | 3026 | 1441 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 271 | | 52 | 329 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 30 | |
| Link Distance (ft) | | 389 | | | 797 | | | 655 | | | 974 | |
| Travel Time (s) | | 5.9 | | | 12.1 | | | 9.9 | | | 22.1 | |
| Peak Hour Factor | 0.80 | 0.90 | 0.25 | 0.25 | 0.85 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Adj. Flow (vph) | 59 | 871 | 0 | 0 | 1002 | 562 | 464 | 397 | 568 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | 21% | | 42% | | | |
| Lane Group Flow (vph) | 59 | 871 | 0 | 0 | 1002 | 562 | 367 | 733 | 329 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |
| Turn Type | Prot | NA | | | NA | Perm | Perm | NA | Perm | | | |
| Protected Phases | 3 | 8 | | | 4 | | | 6 | | | | |
| Permitted Phases | | | | | | 4 | 6 | | 6 | | | |

| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Lane Configurations | | |
| Traffic Volume (vph) | | |
| Future Volume (vph) | | |
| Ideal Flow (vphpl) | | |
| Storage Length (ft) | | |
| Storage Lanes | | |
| Taper Length (ft) | | |
| Lane Util. Factor | | |
| Frt | | |
| Flt Protected | | |
| Satd. Flow (prot) | | |
| Flt Permitted | | |
| Satd. Flow (perm) | | |
| Right Turn on Red | | |
| Satd. Flow (RTOR) | | |
| Link Speed (mph) | | |
| Link Distance (ft) | | |
| Travel Time (s) | | |
| Peak Hour Factor | | |
| Adj. Flow (vph) | | |
| Shared Lane Traffic (%) | | |
| Lane Group Flow (vph) | | |
| Enter Blocked Intersection | | |
| Lane Alignment | | |
| Median Width(ft) | | |
| Link Offset(ft) | | |
| Crosswalk Width(ft) | | |
| Two way Left Turn Lane | | |
| Headway Factor | | |
| Turning Speed (mph) | | |
| Number of Detectors | | |
| Detector Template | | |
| Leading Detector (ft) | | |
| Trailing Detector (ft) | | |
| Detector 1 Position(ft) | | |
| Detector 1 Size(ft) | | |
| Detector 1 Type | | |
| Detector 1 Channel | | |
| Detector 1 Extend (s) | | |
| Detector 1 Queue (s) | | |
| Detector 1 Delay (s) | | |
| Detector 2 Position(ft) | | |
| Detector 2 Size(ft) | | |
| Detector 2 Type | | |
| Detector 2 Channel | | |
| Detector 2 Extend (s) | | |
| Turn Type | | |
| Protected Phases | 2 | 7 |
| Permitted Phases | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Detector Phase | 3 | 8 | | | 4 | 4 | 6 | 6 | 6 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | 10.0 | | | 10.0 | 10.0 | 7.0 | 7.0 | 7.0 | | | |
| Minimum Split (s) | 11.0 | 35.7 | | | 39.7 | 39.7 | 48.0 | 48.0 | 48.0 | | | |
| Total Split (s) | 19.0 | 45.0 | | | 64.0 | 64.0 | 42.0 | 42.0 | 42.0 | | | |
| Total Split (%) | 15.2% | 36.0% | | | 51.2% | 51.2% | 33.6% | 33.6% | 33.6% | | | |
| Maximum Green (s) | 13.0 | 39.3 | | | 58.3 | 58.3 | 36.0 | 36.0 | 36.0 | | | |
| Yellow Time (s) | 4.0 | 4.7 | | | 4.7 | 4.7 | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 2.0 | 1.0 | | | 1.0 | 1.0 | 1.3 | 1.3 | 1.3 | | | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 6.0 | 5.7 | | | 5.7 | 5.7 | 6.0 | 6.0 | 6.0 | | | |
| Lead/Lag | Lead | Lag | | | Lag | Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 2.0 | 2.0 | | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | | | |
| Recall Mode | Min | Min | | | None | None | None | None | None | | | |
| Walk Time (s) | | 7.0 | | | 8.0 | 8.0 | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | 23.0 | | | 26.0 | 26.0 | 35.0 | 35.0 | 35.0 | | | |
| Pedestrian Calls (#/hr) | | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 8.1 | 26.5 | | | 50.8 | 50.8 | 30.3 | 30.3 | 30.3 | | | |
| Actuated g/C Ratio | 0.08 | 0.25 | | | 0.47 | 0.47 | 0.28 | 0.28 | 0.28 | | | |
| v/c Ratio | 0.44 | 0.69 | | | 0.33 | 0.63 | 0.81 | 0.82 | 0.51 | | | |
| Control Delay | 54.9 | 42.7 | | | 18.6 | 14.6 | 51.3 | 42.3 | 6.5 | | | |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.8 | 0.5 | 0.0 | | | |
| Total Delay | 54.9 | 42.7 | | | 18.6 | 14.6 | 52.0 | 42.8 | 6.5 | | | |
| LOS | D | D | | | B | B | D | D | A | | | |
| Approach Delay | | 43.5 | | | 17.2 | | | 36.8 | | | | |
| Approach LOS | | D | | | B | | | D | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 125 | | | |
| Actuated Cycle Length: 107.1 | | | |
| Natural Cycle: 125 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.94 | | | |
| Intersection Signal Delay: 30.6 | | Intersection LOS: C | |
| Intersection Capacity Utilization 68.6% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 14: Loop 101 NB Frontage Rd & Bell Rd



| Lane Group | Ø2 | Ø7 |
|---|---|---|
| Detector Phase | | |
| Switch Phase | | |
| Minimum Initial (s) | 7.0 | 5.0 |
| Minimum Split (s) | 50.9 | 11.0 |
| Total Split (s) | 42.0 | 38.0 |
| Total Split (%) | 34% | 30% |
| Maximum Green (s) | 36.1 | 32.0 |
| Yellow Time (s) | 4.7 | 4.0 |
| All-Red Time (s) | 1.2 | 2.0 |
| Lost Time Adjust (s) | | |
| Total Lost Time (s) | | |
| Lead/Lag | | Lead |
| Lead-Lag Optimize? | | |
| Vehicle Extension (s) | 2.0 | 2.0 |
| Recall Mode | None | None |
| Walk Time (s) | 7.0 | |
| Flash Dont Walk (s) | 38.0 | |
| Pedestrian Calls (#/hr) | 0 | |
| Act Effct Green (s) | | |
| Actuated g/C Ratio | | |
| v/c Ratio | | |
| Control Delay | | |
| Queue Delay | | |
| Total Delay | | |
| LOS | | |
| Approach Delay | | |
| Approach LOS | | |

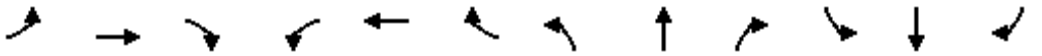
| Intersection Summary |
|---|

## 14: Loop 101 NB Frontage Rd & Bell Rd

| Lane Group | EBL | EBT | WBT | WBR | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 59 | 871 | 1002 | 562 | 367 | 733 | 329 |
| v/c Ratio | 0.44 | 0.69 | 0.33 | 0.63 | 0.81 | 0.82 | 0.51 |
| Control Delay | 54.9 | 42.7 | 18.6 | 14.6 | 51.3 | 42.3 | 6.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.8 | 0.5 | 0.0 |
| Total Delay | 54.9 | 42.7 | 18.6 | 14.6 | 52.0 | 42.8 | 6.5 |
| Queue Length 50th (ft) | 44 | 138 | 125 | 147 | 256 | 253 | 0 |
| Queue Length 95th (ft) | 87 | 293 | 158 | 295 | #431 | 373 | 78 |
| Internal Link Dist (ft) | | 309 | 717 | | | 575 | |
| Turn Bay Length (ft) | 220 | | | 175 | 310 | | 310 |
| Base Capacity (vph) | 217 | 1889 | 3532 | 994 | 548 | 1064 | 707 |
| Starvation Cap Reductn | 0 | 89 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 11 | 0 | 42 | 81 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.27 | 0.48 | 0.28 | 0.57 | 0.73 | 0.75 | 0.47 |

Intersection Summary

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



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | 6 | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 1651 | 873 | 363 | 1220 | 0 | 0 | 0 | 0 | 839 | 887 | 377 |
| Future Volume (vph) | 0 | 1651 | 873 | 363 | 1220 | 0 | 0 | 0 | 0 | 839 | 887 | 377 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 185 | | 0 | 0 | | 0 | 0 | | 0 | 250 | | 250 |
| Storage Lanes | 2 | | 1 | 2 | | 0 | 0 | | 0 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.76 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 0.94 | 0.95 | 1.00 |
| Ped Bike Factor | | | 0.99 | 1.00 | | | | | | | | 0.99 |
| Frt | | | 0.850 | | | | | | | | | 0.850 |
| Flt Protected | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 8097 | 1482 | 3019 | 4940 | 0 | 0 | 0 | 0 | 4627 | 3610 | 1538 |
| Flt Permitted | | | | 0.950 | | | | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 8097 | 1463 | 3018 | 4940 | 0 | 0 | 0 | 0 | 4627 | 3610 | 1517 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | 323 | | | | | | | | | 110 |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 45 | |
| Link Distance (ft) | | 675 | | | 322 | | | 835 | | | 832 | |
| Travel Time (s) | | 10.2 | | | 4.9 | | | 12.7 | | | 12.6 | |
| Confl. Peds. (#/hr) | 1 | | 1 | 1 | | | | | | | | 1 |
| Peak Hour Factor | 0.25 | 0.90 | 0.90 | 0.88 | 0.88 | 0.25 | 0.25 | 0.25 | 0.25 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 0% | 7% | 9% | 16% | 5% | 0% | 0% | 0% | 0% | 10% | 0% | 5% |
| Adj. Flow (vph) | 0 | 1834 | 970 | 413 | 1386 | 0 | 0 | 0 | 0 | 932 | 986 | 419 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 1834 | 970 | 413 | 1386 | 0 | 0 | 0 | 0 | 932 | 986 | 419 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 36 | | | 36 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | | 2 | 1 | 1 | 2 | | | | | 1 | 2 | 1 |
| Detector Template | | Thru | Right | Left | Thru | | | | | Left | Thru | Right |
| Leading Detector (ft) | | 100 | 20 | 20 | 100 | | | | | 20 | 100 | 20 |
| Trailing Detector (ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Position(ft) | | 0 | 0 | 0 | 0 | | | | | 0 | 0 | 0 |
| Detector 1 Size(ft) | | 6 | 20 | 20 | 6 | | | | | 20 | 6 | 20 |
| Detector 1 Type | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | | | Cl+Ex | Cl+Ex | Cl+Ex |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Queue (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 1 Delay (s) | | 0.0 | 0.0 | 0.0 | 0.0 | | | | | 0.0 | 0.0 | 0.0 |
| Detector 2 Position(ft) | | 94 | | | 94 | | | | | | 94 | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | | | | 6 | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | | | | Cl+Ex | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | | | | 0.0 | |

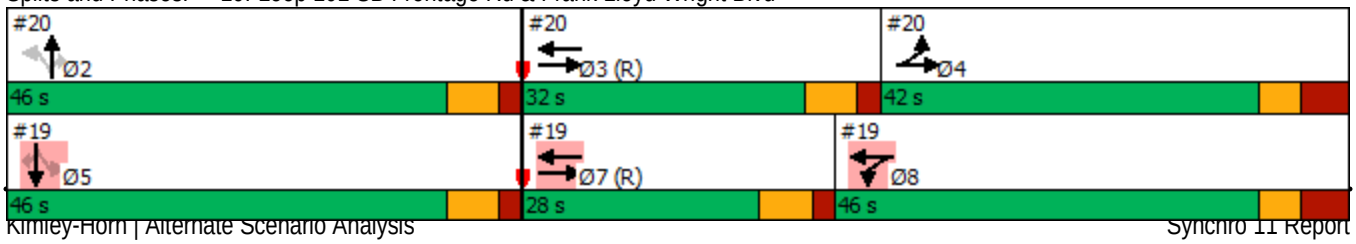
| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | | NA | Free | Prot | NA | | | | | Perm | NA | Perm |
| Protected Phases | | 7 | | 8 | 7 8 | | | | | | 5 | |
| Permitted Phases | | | Free | | | | | | | 5 | | 5 |
| Detector Phase | | 7 | | 8 | 7 8 | | | | | 5 | 5 | 5 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | 5.0 | | 6.0 | | | | | | 6.0 | 6.0 | 6.0 |
| Minimum Split (s) | | 24.8 | | 31.9 | | | | | | 29.7 | 29.7 | 29.7 |
| Total Split (s) | | 28.0 | | 46.0 | | | | | | 46.0 | 46.0 | 46.0 |
| Total Split (%) | | 23.3% | | 38.3% | | | | | | 38.3% | 38.3% | 38.3% |
| Maximum Green (s) | | 21.2 | | 37.7 | | | | | | 39.3 | 39.3 | 39.3 |
| Yellow Time (s) | | 4.7 | | 3.9 | | | | | | 4.7 | 4.7 | 4.7 |
| All-Red Time (s) | | 2.1 | | 4.4 | | | | | | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | | | | | | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | | 6.8 | | 8.3 | | | | | | 6.7 | 6.7 | 6.7 |
| Lead/Lag | | Lead | | Lag | | | | | | | | |
| Lead-Lag Optimize? | | Yes | | Yes | | | | | | | | |
| Vehicle Extension (s) | | 0.2 | | 0.2 | | | | | | 0.2 | 0.2 | 0.2 |
| Recall Mode | | C-Max | | None | | | | | | None | None | None |
| Walk Time (s) | | 7.0 | | | | | | | | 7.0 | 7.0 | 7.0 |
| Flash Dont Walk (s) | | 11.0 | | | | | | | | 16.0 | 16.0 | 16.0 |
| Pedestrian Calls (#/hr) | | 0 | | | | | | | | 0 | 0 | 0 |
| Act Effct Green (s) | | 33.2 | 120.0 | 28.1 | 69.6 | | | | | 36.9 | 36.9 | 36.9 |
| Actuated g/C Ratio | | 0.28 | 1.00 | 0.23 | 0.58 | | | | | 0.31 | 0.31 | 0.31 |
| v/c Ratio | | 0.82 | 0.66 | 0.58 | 0.48 | | | | | 0.65 | 0.89 | 0.77 |
| Control Delay | | 45.2 | 2.4 | 53.3 | 21.6 | | | | | 37.9 | 49.8 | 37.2 |
| Queue Delay | | 6.2 | 0.0 | 0.5 | 0.5 | | | | | 0.0 | 0.0 | 0.0 |
| Total Delay | | 51.4 | 2.4 | 53.8 | 22.0 | | | | | 37.9 | 49.8 | 37.2 |
| LOS | | D | A | D | C | | | | | D | D | D |
| Approach Delay | | 34.5 | | | 29.3 | | | | | | 42.8 | |
| Approach LOS | | C | | | C | | | | | | D | |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 35.9 Intersection LOS: D
Intersection Capacity Utilization 86.2% ICU Level of Service E
Analysis Period (min) 15

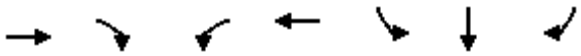
Splits and Phases: 19: Loop 101 SB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | Ø2 | Ø3 | Ø4 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 2 | 3 | 4 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 5.0 | 5.0 | 5.0 |
| Minimum Split (s) | 24.7 | 24.8 | 13.3 |
| Total Split (s) | 46.0 | 32.0 | 42.0 |
| Total Split (%) | 38% | 27% | 35% |
| Maximum Green (s) | 39.3 | 25.2 | 33.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | | |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 11.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|

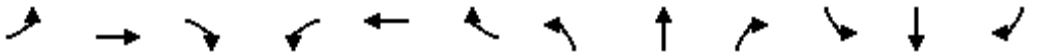
## 19: Loop 101 SB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | EBT | EBR | WBL | WBT | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 1834 | 970 | 413 | 1386 | 932 | 986 | 419 |
| v/c Ratio | 0.82 | 0.66 | 0.58 | 0.48 | 0.65 | 0.89 | 0.77 |
| Control Delay | 45.2 | 2.4 | 53.3 | 21.6 | 37.9 | 49.8 | 37.2 |
| Queue Delay | 6.2 | 0.0 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 |
| Total Delay | 51.4 | 2.4 | 53.8 | 22.0 | 37.9 | 49.8 | 37.2 |
| Queue Length 50th (ft) | 292 | 0 | 177 | 391 | 220 | 380 | 221 |
| Queue Length 95th (ft) | #453 | 0 | 224 | 460 | 246 | 430 | 323 |
| Internal Link Dist (ft) | 595 | | | 242 | | 752 | |
| Turn Bay Length (ft) | | | | | 250 | | 250 |
| Base Capacity (vph) | 2240 | 1463 | 948 | 3260 | 1552 | 1211 | 581 |
| Starvation Cap Reductn | 0 | 0 | 205 | 1232 | 0 | 0 | 0 |
| Spillback Cap Reductn | 364 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.98 | 0.66 | 0.56 | 0.68 | 0.60 | 0.81 | 0.72 |

Intersection Summary

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



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 663 | 1826 | 0 | 0 | 811 | 988 | 772 | 670 | 151 | 0 | 0 | 0 |
| Future Volume (vph) | 663 | 1826 | 0 | 0 | 811 | 988 | 772 | 670 | 151 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 245 | | 150 | 250 | | 250 | 0 | | 0 |
| Storage Lanes | 3 | | 0 | 2 | | 2 | 2 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.94 | 0.86 | 1.00 | 1.00 | 0.81 | 0.88 | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Ped Bike Factor | | | | | | | | | | | | |
| Frt | | | | | | 0.850 | | | 0.850 | | | |
| Flt Protected | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (prot) | 4627 | 6166 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | | 0.950 | | | | | |
| Satd. Flow (perm) | 4627 | 6166 | 0 | 0 | 7259 | 2493 | 3433 | 5187 | 1583 | 0 | 0 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | | | | | 490 | | | 110 | | | |
| Link Speed (mph) | | 45 | | | 45 | | | 45 | | | 45 | |
| Link Distance (ft) | | 322 | | | 1160 | | | 836 | | | 801 | |
| Travel Time (s) | | 4.9 | | | 17.6 | | | 12.7 | | | 12.1 | |
| Confl. Peds. (#/hr) | | | 1 | | | | | | | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.25 | 0.25 | 0.88 | 0.90 | 0.90 | 0.90 | 0.90 | 0.25 | 0.25 | 0.25 |
| Heavy Vehicles (%) | 10% | 6% | 0% | 0% | 6% | 14% | 2% | 0% | 2% | 0% | 0% | 0% |
| Adj. Flow (vph) | 737 | 2029 | 0 | 0 | 922 | 1098 | 858 | 744 | 168 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 737 | 2029 | 0 | 0 | 922 | 1098 | 858 | 744 | 168 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 36 | | | 36 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Number of Detectors | 1 | 2 | | | 2 | 1 | 1 | 2 | 1 | | | |
| Detector Template | Left | Thru | | | Thru | Right | Left | Thru | Right | | | |
| Leading Detector (ft) | 20 | 100 | | | 100 | 20 | 20 | 100 | 20 | | | |
| Trailing Detector (ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Position(ft) | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | | | |
| Detector 1 Size(ft) | 20 | 6 | | | 6 | 20 | 20 | 6 | 20 | | | |
| Detector 1 Type | Cl+Ex | Cl+Ex | | | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | | | |
| Detector 1 Channel | | | | | | | | | | | | |
| Detector 1 Extend (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Queue (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 1 Delay (s) | 0.0 | 0.0 | | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Detector 2 Position(ft) | | 94 | | | 94 | | | 94 | | | | |
| Detector 2 Size(ft) | | 6 | | | 6 | | | 6 | | | | |
| Detector 2 Type | | Cl+Ex | | | Cl+Ex | | | Cl+Ex | | | | |
| Detector 2 Channel | | | | | | | | | | | | |
| Detector 2 Extend (s) | | 0.0 | | | 0.0 | | | 0.0 | | | | |

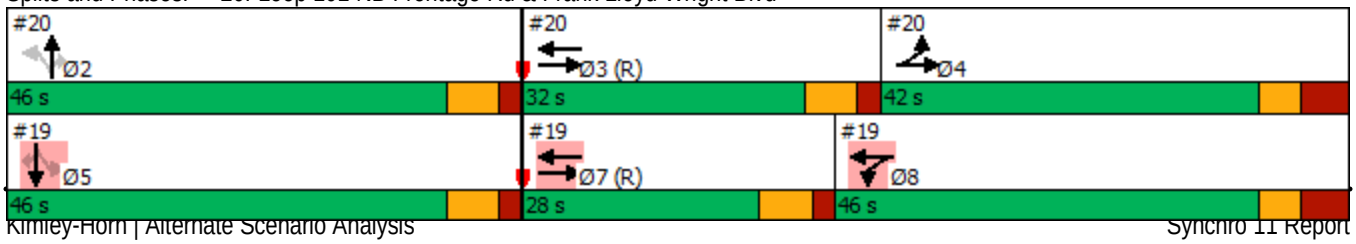
| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Lane Configurations | | | |
| Traffic Volume (vph) | | | |
| Future Volume (vph) | | | |
| Ideal Flow (vphpl) | | | |
| Storage Length (ft) | | | |
| Storage Lanes | | | |
| Taper Length (ft) | | | |
| Lane Util. Factor | | | |
| Ped Bike Factor | | | |
| Frt | | | |
| Flt Protected | | | |
| Satd. Flow (prot) | | | |
| Flt Permitted | | | |
| Satd. Flow (perm) | | | |
| Right Turn on Red | | | |
| Satd. Flow (RTOR) | | | |
| Link Speed (mph) | | | |
| Link Distance (ft) | | | |
| Travel Time (s) | | | |
| Confl. Peds. (#/hr) | | | |
| Peak Hour Factor | | | |
| Heavy Vehicles (%) | | | |
| Adj. Flow (vph) | | | |
| Shared Lane Traffic (%) | | | |
| Lane Group Flow (vph) | | | |
| Enter Blocked Intersection | | | |
| Lane Alignment | | | |
| Median Width(ft) | | | |
| Link Offset(ft) | | | |
| Crosswalk Width(ft) | | | |
| Two way Left Turn Lane | | | |
| Headway Factor | | | |
| Turning Speed (mph) | | | |
| Number of Detectors | | | |
| Detector Template | | | |
| Leading Detector (ft) | | | |
| Trailing Detector (ft) | | | |
| Detector 1 Position(ft) | | | |
| Detector 1 Size(ft) | | | |
| Detector 1 Type | | | |
| Detector 1 Channel | | | |
| Detector 1 Extend (s) | | | |
| Detector 1 Queue (s) | | | |
| Detector 1 Delay (s) | | | |
| Detector 2 Position(ft) | | | |
| Detector 2 Size(ft) | | | |
| Detector 2 Type | | | |
| Detector 2 Channel | | | |
| Detector 2 Extend (s) | | | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Turn Type | Prot | NA | | | NA | Free | Perm | NA | Perm | | | |
| Protected Phases | 4 | 3 4 | | | 3 | | | 2 | | | | |
| Permitted Phases | | | | | | Free | 2 | | 2 | | | |
| Detector Phase | 4 | 3 4 | | | 3 | | 2 | 2 | 2 | | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 5.0 | | | | 5.0 | | 5.0 | 5.0 | 5.0 | | | |
| Minimum Split (s) | 13.3 | | | | 24.8 | | 24.7 | 24.7 | 24.7 | | | |
| Total Split (s) | 42.0 | | | | 32.0 | | 46.0 | 46.0 | 46.0 | | | |
| Total Split (%) | 35.0% | | | | 26.7% | | 38.3% | 38.3% | 38.3% | | | |
| Maximum Green (s) | 33.7 | | | | 25.2 | | 39.3 | 39.3 | 39.3 | | | |
| Yellow Time (s) | 3.9 | | | | 4.7 | | 4.7 | 4.7 | 4.7 | | | |
| All-Red Time (s) | 4.4 | | | | 2.1 | | 2.0 | 2.0 | 2.0 | | | |
| Lost Time Adjust (s) | 0.0 | | | | 0.0 | | 0.0 | 0.0 | 0.0 | | | |
| Total Lost Time (s) | 8.3 | | | | 6.8 | | 6.7 | 6.7 | 6.7 | | | |
| Lead/Lag | Lag | | | | Lead | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 0.2 | | | | 0.2 | | 0.2 | 0.2 | 0.2 | | | |
| Recall Mode | None | | | | C-Max | | None | None | None | | | |
| Walk Time (s) | | | | | 7.0 | | 7.0 | 7.0 | 7.0 | | | |
| Flash Dont Walk (s) | | | | | 11.0 | | 11.0 | 11.0 | 11.0 | | | |
| Pedestrian Calls (#/hr) | | | | | 0 | | 0 | 0 | 0 | | | |
| Act Effct Green (s) | 24.1 | 69.6 | | | 37.2 | 120.0 | 36.9 | 36.9 | 36.9 | | | |
| Actuated g/C Ratio | 0.20 | 0.58 | | | 0.31 | 1.00 | 0.31 | 0.31 | 0.31 | | | |
| v/c Ratio | 0.79 | 0.57 | | | 0.41 | 0.44 | 0.81 | 0.47 | 0.30 | | | |
| Control Delay | 54.0 | 17.5 | | | 34.9 | 0.6 | 44.8 | 34.1 | 12.2 | | | |
| Queue Delay | 0.4 | 1.3 | | | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | | | |
| Total Delay | 54.3 | 18.8 | | | 35.1 | 0.6 | 44.8 | 34.1 | 12.2 | | | |
| LOS | D | B | | | D | A | D | C | B | | | |
| Approach Delay | | 28.3 | | | 16.3 | | | 37.2 | | | | |
| Approach LOS | | C | | | B | | | D | | | | |

**Intersection Summary**

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 3:EBWB and 7:, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 27.0 Intersection LOS: C
Intersection Capacity Utilization 86.2% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 20: Loop 101 NB Frontage Rd & Frank Lloyd Wright Blvd



| Lane Group | Ø5 | Ø7 | Ø8 |
|---|---|---|---|
| Turn Type | | | |
| Protected Phases | 5 | 7 | 8 |
| Permitted Phases | | | |
| Detector Phase | | | |
| Switch Phase | | | |
| Minimum Initial (s) | 6.0 | 5.0 | 6.0 |
| Minimum Split (s) | 29.7 | 24.8 | 31.9 |
| Total Split (s) | 46.0 | 28.0 | 46.0 |
| Total Split (%) | 38% | 23% | 38% |
| Maximum Green (s) | 39.3 | 21.2 | 37.7 |
| Yellow Time (s) | 4.7 | 4.7 | 3.9 |
| All-Red Time (s) | 2.0 | 2.1 | 4.4 |
| Lost Time Adjust (s) | | | |
| Total Lost Time (s) | | | |
| Lead/Lag | | Lead | Lag |
| Lead-Lag Optimize? | | Yes | Yes |
| Vehicle Extension (s) | 0.2 | 0.2 | 0.2 |
| Recall Mode | None | C-Max | None |
| Walk Time (s) | 7.0 | 7.0 | |
| Flash Dont Walk (s) | 16.0 | 11.0 | |
| Pedestrian Calls (#/hr) | 0 | 0 | |
| Act Effct Green (s) | | | |
| Actuated g/C Ratio | | | |
| v/c Ratio | | | |
| Control Delay | | | |
| Queue Delay | | | |
| Total Delay | | | |
| LOS | | | |
| Approach Delay | | | |
| Approach LOS | | | |

| Intersection Summary |
|---|

## 20: Loop 101 NB Frontage Rd & Frank Lloyd Wright Blvd

| Lane Group | EBL | EBT | WBT | WBR | NBL | NBT | NBR |
|---|---|---|---|---|---|---|---|
| Lane Group Flow (vph) | 737 | 2029 | 922 | 1098 | 858 | 744 | 168 |
| v/c Ratio | 0.79 | 0.57 | 0.41 | 0.44 | 0.81 | 0.47 | 0.30 |
| Control Delay | 54.0 | 17.5 | 34.9 | 0.6 | 44.8 | 34.1 | 12.2 |
| Queue Delay | 0.4 | 1.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 54.3 | 18.8 | 35.1 | 0.6 | 44.8 | 34.1 | 12.2 |
| Queue Length 50th (ft) | 217 | 476 | 139 | 0 | 313 | 169 | 32 |
| Queue Length 95th (ft) | 261 | 531 | 187 | 0 | 360 | 192 | 80 |
| Internal Link Dist (ft) | | 242 | 1080 | | | 756 | |
| Turn Bay Length (ft) | | | | 150 | 250 | | 250 |
| Base Capacity (vph) | 1299 | 4069 | 2250 | 2493 | 1151 | 1740 | 604 |
| Starvation Cap Reductn | 179 | 1724 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 458 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.66 | 0.87 | 0.51 | 0.44 | 0.75 | 0.43 | 0.28 |

Intersection Summary

# AASHTO Storage Calculations

# Left-Turn Storage Analysis

| Intersection | Movement | Peak Left-Turn Volume (vph) | Conflicting Through Volume (vph) | Traffic Control (Place an "X") | | | If signalized | | Calculated Storage per Lane (ft.) | Site HV Assignment Volume (vph) | Estimated Existing HV Volume (vph) | Average HV% | Calculated HV Volume (veh) | HV Storage Adjustment (ft) | Adjusted Storage per Lane (ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Signal | TWSC | AWSC | Cycle Length (seconds) | # of Left-Turn Lanes | (85' min. default) | | | | | | |
| Pima Rd & Trailside View | SB | 42 | | X | | | 120 | 1 | **100** | 0 | 1 | 1% | 1 | 35 | **135** |
| | WB | 103 | | X | | | 120 | 1 | **175** | 0 | 10 | 9% | 1 | 35 | **210** |
| | | | | | | | | | | | | | | | |
| 91st St & Trailside View | NB | 87 | 8 | | X | | | | **85** | 0 | 6 | 7% | 1 | 35 | **85** |
| | | | | | | | | | | | | | | | |
| 91st St & Driveway D3 | NB | 32 | 55 | | X | | | | **85** | 0 | 0 | 0% | 0 | 0 | **85** |
| | EB | 4 | 73 | | X | | | | **85** | 0 | 0 | 0% | 0 | 0 | **85** |
| | | | | | | | | | | | | | | | |
| 91st St & Driveway D4 | NB | 18 | 37 | | X | | | | **85** | 8 | 0 | 44% | 1 | 35 | **85** |
| | SB | 19 | 155 | | X | | | | **85** | 0 | 0 | 0% | 0 | 0 | **85** |
| | EB | 1 | 134 | | X | | | | **85** | 0 | 0 | 0% | 0 | 0 | **85** |
| | WB | 171 | 134 | | X | | | | **85** | 0 | 0 | 0% | 0 | 0 | **85** |
| | | | | | | | | | | | | | | | |
| 90th St & Bell Rd | EB | 41 | 1057 | | X | | | | **85** | 0 | 0 | 0% | 0 | 0 | **85** |
| | WB | 24 | 1626 | | X | | | | **85** | 0 | 2 | 10% | 1 | 35 | **85** |
| | | | | | | | | | | | | | | | |
| 91st St & Bell Rd | NB | 146 | | X | | | 120 | 1 | **225** | 0 | 15 | 10% | 1 | 35 | **260** |
| | SB | 13 | | X | | | 120 | 1 | **85** | 0 | 0 | 0% | 0 | 0 | **85** |
| | EB | 411 | | X | | | 120 | 1 | **500** | 12 | 0 | 3% | 1 | 35 | **535** |
| | WB | 35 | | X | | | 120 | 1 | **75** | 0 | 4 | 11% | 1 | 35 | **110** |
| | | | | | | | | | | | | | | | |

| | | | |
|---|---|---|---|
| **Estimated Existing HV%** | **10%** | **Truck Length (ft)** | 60 |
| **HV Storage Adjustment (ft)** | **35** | **Car Length (ft)** | 25 |

# Right-Turn Storage Analysis

| Intersection | Movement | Peak Right-Turn Volume (vph) | RTOR Reduction? | Reduced Right-Turn Volume (vph) | Traffic Control (Place an "X") | | | If signalized | | Required Storage per Lane (ft.) | Site HV Assignment Volume (vph) | Estimated Existing HV Volume (vph) | Average HV% | Calculated HV Volume (veh) | HV Storage Adjustment (ft) | Adjusted Storage per Lane (ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Signal | TWSC | AWSC | Cycle Length (seconds) | # of Right-Turn Lanes | (85' min. default) | | | | | | |
| Driveway D1 & Pima Rd | NB | 13 | | | | X | | | | **85** | 0 | 0 | 0% | 0 | 0 | **85** |
| | EB | 143 | | | | X | | | | **125** | 12 | 0 | 8% | 1 | 35 | **160** |
| | | | | | | | | | | | | | | | | |
| Pima Rd & Trailside View | NB | 176 | | | X | | | 120 | 1 | **250** | 0 | 15 | 9% | 1 | 35 | **285** |
| | WB | 58 | | | X | | | 120 | 1 | **125** | 0 | 4 | 6% | 1 | 35 | **160** |
| | | | | | | | | | | | | | | | | |
| 91st St & Trailside View | EB | 114 | | | | X | | | | **100** | 0 | 8 | 7% | 1 | 35 | **135** |
| | | | | | | | | | | | | | | | | |
| SR101 NB Frontage Rd & Driveway D2 | WB | 190 | | | | X | | | | **175** | 15 | 0 | 8% | 1 | 35 | **210** |
| | | | | | | | | | | | | | | | | |
| 91st St & Driveway D4 | EB | 14 | | | | X | | | | **85** | 8 | 0 | 57% | 1 | 35 | **85** |
| | WB | 8 | | | | X | | | | **85** | 0 | 0 | 0% | 0 | 0 | **85** |
| | | | | | | | | | | | | | | | | |
| 91st St & Driveway D5 | EB | 23 | | | | X | | | | **85** | 2 | 0 | 9% | 1 | 35 | **85** |
| | WB | 13 | | | | X | | | | **85** | 0 | 0 | 0% | 0 | 0 | **85** |
| | | | | | | | | | | | | | | | | |
| 90th St & Bell Rd | NB | 18 | | | | X | | | | **85** | 0 | 2 | 9% | 1 | 35 | **85** |
| | SB | 50 | | | | X | | | | **85** | 0 | 0 | 0% | 0 | 0 | **85** |
| | EB | 58 | | | | X | | | | **85** | 0 | 6 | 9% | 1 | 35 | **85** |
| | | | | | | | | | | | | | | | | |
| 91st St & Bell Rd | NB | 58 | 30% | 41 | X | | | 120 | 1 | **100** | 0 | 6 | 11% | 1 | 35 | **135** |
| | SB | 258 | 50% | 129 | X | | | 120 | 1 | **200** | 15 | 0 | 6% | 1 | 35 | **235** |
| | EB | 114 | 30% | 80 | X | | | 120 | 1 | **150** | 0 | 12 | 10% | 1 | 35 | **185** |
| | | | | | | | | | | | | | | | | |

| | | | |
|---|---|---|---|
| **Estimated Existing HV%** | **10%** | **Truck Length (ft)** | 60 |
| **HV Storage Adjustment (feet)** | **35** | **Car Length (ft)** | 25 |

# SAMPLE CALCULATIONS

## UNSIGNALIZED INTERSECTIONS

### Left-Turn Storage:

***Per 2018 AASHTO Green Book Section 9.7.2.2***

**U.S. Customary**

$$c = \frac{V_o e^{-V_o t_c/3600}}{1 - e^{-V_o t_f/3600}}$$

where:

$c$ = left-turn capacity, veh/h

$V_o$ = major-road volume conflicting with the minor movement, assumed to be equal to one-half of the two-way major-road volume, veh/h

$t_c$ = critical gap, s

$t_f$ = follow-up gap, s

**U.S. Customary**

$$SL = \left\{ \frac{\ln\left[P(n > N)\right]}{\ln\left[\frac{v}{c}\right]} - 1 \right\} \times VL$$

where:

$SL$ = storage length, ft

$P(n>N)$ = probability of turn-lane overflow

$v$ = left-turn vehicle volume, veh/h

$c$ = left-turn capacity, veh/h

$VL$ = average length per vehicle, ft

### Right-Turn Storage:

***2 minute arrival method***

**Storage** $= \boldsymbol{V * \frac{2\ min/interval}{60\ min/hr} * 25 ft/veh}$

**Where:** V = peak turning volume (vehicles per hour)
25 ft/veh = Average Length of Vehicles

## SIGNALIZED INTERSECTIONS

**Storage** $= \boldsymbol{\frac{N + z * \sqrt{N}}{L} * 25 ft/veh}$

**Where :** N = vehicles/interval = $\boldsymbol{\frac{V * C}{3600}}$

V = peak turning volume (vehicles per hour)
C = cycle length (seconds)
L = number of left turn lanes
z = 1.282 for 90% confidence level
z = 1.645 for 95% confidence level (Typically used)
25 ft/veh = Average Length of Vehicles

# ADOT Storage Calculations

# ADOT Left-Turn Storage Analysis

| Intersection | Movement | Peak volume (vph) | Signalized? (Place an "X") | | If signalized | | Gap (feet) | Braking Distance | | Queue Length (ft) | | | | | | | | | | ADOT Required Turn Lane (ft) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | SIGNALIZED | | |
| | | | Yes | No | Cycle Length (seconds) | # of Turn Lanes | | Desirable | Minimum | Base Queue (TGP 430) | Site HV Assignment Volume (vph) | Existing Volume (vph) | Estimated Existing HV Volume (vph) | Average HV% | Calculated HV Volume (veh) | HV Storage Adjustment (ft) | Adjusted Base Queue (ft) | 1.5x Queue | 2x Queue | Minimum (Min. + 1.5) | Conservative (Des. + 1.5) | Conservative (Des. + 2) |
| SR101 SB Frontage Rd & Pima Rd/Princess Dr | SB | 719 | X | | 120 | 1.5 | 90 | 200 | 85 | 400 | 9 | 569 | 57 | 9% | 2 | 70 | **470** | 705 | 940 | 800 | 925 | 1150 |
| | WB | 1351 | X | | 120 | 3 | 90 | 200 | 85 | 380 | 1 | 1253 | 125 | 9% | 2 | 70 | **450** | 675 | 900 | 775 | 875 | 1100 |
| | | | | | | | | | | | | | | | | | | | | | | |
| SR101 NB Frontage Rd & Pima Rd/Princess Dr | NB | 414 | X | | 120 | 1.5 | 90 | 200 | 85 | 230 | 1 | 369 | 37 | 9% | 1 | 35 | **265** | 400 | 530 | 500 | 600 | 750 |
| | EB | 243 | X | | 120 | 1 | 90 | 200 | 85 | 205 | 0 | 229 | 23 | 9% | 1 | 35 | **240** | 360 | 480 | 450 | 575 | 700 |
| | | | | | | | | | | | | | | | | | | | | | | |
| SR101 SB Frontage Rd & Bell Rd | SB | 823 | X | | 120 | 1.5 | 90 | 200 | 85 | 460 | 6 | 583 | 58 | 8% | 2 | 70 | **530** | 795 | 1060 | 900 | 1000 | 1275 |
| | WB | 881 | X | | 120 | 2 | 90 | 200 | 85 | 370 | 11 | 578 | 58 | 8% | 2 | 70 | **440** | 660 | 880 | 750 | 875 | 1100 |
| | | | | | | | | | | | | | | | | | | | | | | |
| SR101 NB Frontage Rd & Bell Rd | NB | 418 | X | | 120 | 1.5 | 90 | 200 | 85 | 235 | 0 | 394 | 39 | 9% | 1 | 35 | **270** | 405 | 540 | 500 | 625 | 750 |
| | EB | 47 | X | | 120 | 1 | 90 | 200 | 85 | 40 | 0 | 44 | 4 | 9% | 1 | 35 | **85** | 130 | 170 | 225 | 350 | 375 |
| | | | | | | | | | | | | | | | | | | | | | | |
| SR101 SB Frontage Rd & Frank Lloyd Wright Blvd | SB | 867 | X | | 120 | 2 | 90 | 200 | 85 | 365 | 0 | 807 | 81 | 9% | 2 | 70 | **435** | 655 | 870 | 750 | 875 | 1075 |
| | WB | 363 | X | | 120 | 2 | 90 | 200 | 85 | 155 | 0 | 342 | 34 | 9% | 1 | 35 | **190** | 285 | 380 | 375 | 500 | 600 |
| | | | | | | | | | | | | | | | | | | | | | | |
| SR101 NB Frontage Rd & Frank Lloyd Wright Blvd | NB | 772 | X | | 120 | 2 | 90 | 200 | 85 | 325 | 0 | 727 | 73 | 9% | 2 | 70 | **395** | 595 | 790 | 700 | 800 | 1000 |
| | EB | 663 | X | | 120 | 2 | 90 | 200 | 85 | 280 | 0 | 615 | 62 | 9% | 2 | 70 | **350** | 525 | 700 | 625 | 725 | 900 |
| | | | | | | | | | | | | | | | | | | | | | | |

| | | | |
|---|---|---|---|
| **Estimated Existing HV%** | **10%** | **Truck Length (ft)** | 60 |
| **HV Storage Adjustment (ft)** | **35** | **Car Length (ft)** | 25 |

# ADOT Right-Turn Storage Analysis

| Intersection | Movement | Peak volume (vph) | RTOR Reduction? | Reduced Right-Turn Volume (vph) | Signalized? (Place an "X") | | If signalized | | Gap (feet) | Braking Distance | | Queue Length (ft) | | | | | | | | | | ADOT Required Turn Lane (ft) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | | | | | | UNSIGNALIZED | | SIGNALIZED | | |
| | | | | | Yes | No | Cycle Length (seconds) | # of Turn Lanes | | Desirable | Minimum | Base Queue (TGP 430) | Site HV Assignment Volume (vph) | Existing Volume (vph) | Estimated Existing HV Volume (vph) | Average HV% | Calculated HV Volume (veh) | HV Storage Adjustment (ft) | Adjusted Base Queue (ft) | 1.5x Queue | 2x Queue | Minimum | Conservative | Minimum (Min. + 1.5) | Conservative (Des. + 1.5) | Conservative (Des. + 2) |
| SR101 SB Frontage Rd & Pima Rd/Princess Dr | SB | 262 | 30% | 184 | X | | 120 | 1.5 | 90 | 200 | 85 | 105 | 0 | 247 | 25 | 9% | 1 | 35 | **140** | 210 | 280 | N/A | N/A | 300 | 425 | 500 |
| | EB | 379 | 30% | 266 | X | | 120 | 2 | 90 | 200 | 85 | 115 | 0 | 356 | 36 | 9% | 1 | 35 | **150** | 225 | 300 | N/A | N/A | 325 | 425 | 500 |
| SR101 NB Frontage Rd & Pima Rd/Princess Dr | WB | 478 | 30% | 335 | X | | 120 | 1 | 90 | 200 | 85 | 280 | 0 | 450 | 45 | 9% | 2 | 70 | **350** | 525 | 700 | N/A | N/A | 625 | 725 | 900 |
| SR101 NB Frontage Rd & Driveway D2 | NB | 96 | | | | X | | | 90 | 200 | 85 | 85 | 5 | 0 | 0 | 5% | 1 | 35 | **120** | | | 170 | 285 | N/A | N/A | N/A |
| SR101 SB Frontage Rd & Bell Rd | SB | 44 | 30% | 31 | X | | 120 | 1.5 | 90 | 200 | 85 | 85 | 0 | 41 | 4 | 9% | 1 | 35 | **120** | 180 | 240 | N/A | N/A | 275 | 400 | 450 |
| | EB | 226 | 30% | 159 | X | | 120 | 1 | 90 | 200 | 85 | 135 | 0 | 213 | 21 | 9% | 1 | 35 | **170** | 255 | 340 | N/A | N/A | 350 | 475 | 550 |
| SR101 NB Frontage Rd & Bell Rd | NB | 577 | 30% | 404 | X | | 120 | 1.5 | 90 | 200 | 85 | 225 | 8 | 321 | 32 | 7% | 1 | 35 | **260** | 390 | 520 | N/A | N/A | 475 | 600 | 725 |
| | WB | 506 | 30% | 355 | X | | 120 | 1 | 90 | 200 | 85 | 300 | 4 | 317 | 32 | 7% | 1 | 35 | **335** | 505 | 670 | N/A | N/A | 600 | 725 | 875 |
| SR101 SB Frontage Rd & Frank Lloyd Wright Blvd | SB | 563 | 50% | 282 | X | | 120 | 1 | 90 | 200 | 85 | 235 | 0 | 524 | 52 | 9% | 1 | 35 | **270** | 405 | 540 | N/A | N/A | 500 | 625 | 750 |
| | EB | 873 | 50% | 437 | X | | 120 | 1 | 90 | 200 | 85 | 365 | 0 | 822 | 82 | 9% | 2 | 70 | **435** | 655 | 870 | N/A | N/A | 750 | 875 | 1075 |
| SR101 NB Frontage Rd & Frank Lloyd Wright Blvd | NB | 151 | 50% | 76 | X | | 120 | 1 | 90 | 200 | 85 | 85 | 0 | 142 | 14 | 9% | 1 | 35 | **120** | 180 | 240 | N/A | N/A | 275 | 400 | 450 |
| | WB | 1127 | 50% | 564 | X | | 120 | 2 | 90 | 200 | 85 | 235 | 0 | 1005 | 101 | 9% | 1 | 35 | **270** | 405 | 540 | N/A | N/A | 500 | 625 | 750 |

| | | | |
|---|---|---|---|
| **Estimated Existing HV%** | **10%** | **Truck Length (ft)** | 60 |
| **HV Storage Adjustment (feet)** | **35** | **Car Length (ft)** | 25 |

# SAMPLE CALCULATIONS (ADOT TGP 430)

## QUEUE LENGTH

***SIGNALIZED INTERSECTIONS***

**Queue Length** = N x Q / L x Average Vehicle Length

**Where:**
N = veh/interval = V x C / 3600
V=peak hourly volume (vph)
C = cycle length (sec)
Q = queue factor = 1.5 to 2
L = number of left turn lanes
25 ft/veh = Average Length of Passenger Cars
60 ft/veh = Average Length of Trucks

***UNSIGNALIZED INTERSECTIONS***

**Queue Length** = V x 2 min/interval / 60 min/hr x Average Vehicle Length

**Where:**
V = peak turning volume (vehicles per hour)
25 ft/veh = Average Length of Passenger Cars
60 ft/veh = Average Length of Trucks

***"POISSON METHOD"***

**Queue Length** $= \frac{N + z * \sqrt{N}}{L} * Average\ Vehicle\ Length$

**Where :**
N = vehicles/interval = $\frac{V * C}{3600}$
V = peak turning volume (vehicles per hour)
C = cycle length (seconds)
L = number of left turn lanes
z = 1.282 for 90% confidence level
z = 1.645 for 95% confidence level (Typically used)
25 ft/veh = Average Length of Passenger Cars
60 ft/veh = Average Length of Trucks

## BRAKING DISTANCE

**Table 430-2. Braking Distance**

| POSTED or DESIGN SPEED (mph) | DESIRABLE | | MINIMUM | | |
|---|---|---|---|---|---|
| | BRAKING SPEED (mph) | BRAKING DISTANCE (feet) | ENTERING SPEED (mph) | BRAKING SPEED (mph) | BRAKING DISTANCE (feet) |
| 30 | 29 | 80 | 20 | 20 | 20 |
| 35 | 34 | 115 | 25 | 25 | 40 |
| 40 | 38 | 150 | 30 | 29 | 50 |
| 45 | 43 | 200 | 35 | 34 | 85 |
| 50 | 47 | 245 | 40 | 38 | 120 |
| 55 | 52 | 300 | 45 | 42 | 145 |
| 60 | 56 | 360 | 50 | 47 | 200 |
| 65 | 60 | 415 | 55 | 52 | 265 |
| 70 | 64 | 490 | 60 | 56 | 315 |
| 75 | 70 | 585 | 65 | 61 | 400 |

## GAP LENGTH

**Table 430-1. Left Turn Lane Gap Lengths**

| POSTED or DESIGN SPEED (mph) | GAP (feet) |
|---|---|
| < 40 | 60 |
| 40 - 50 | 90 |
| > 50 | 140 |

# Relevant City of Scottsdale Standards

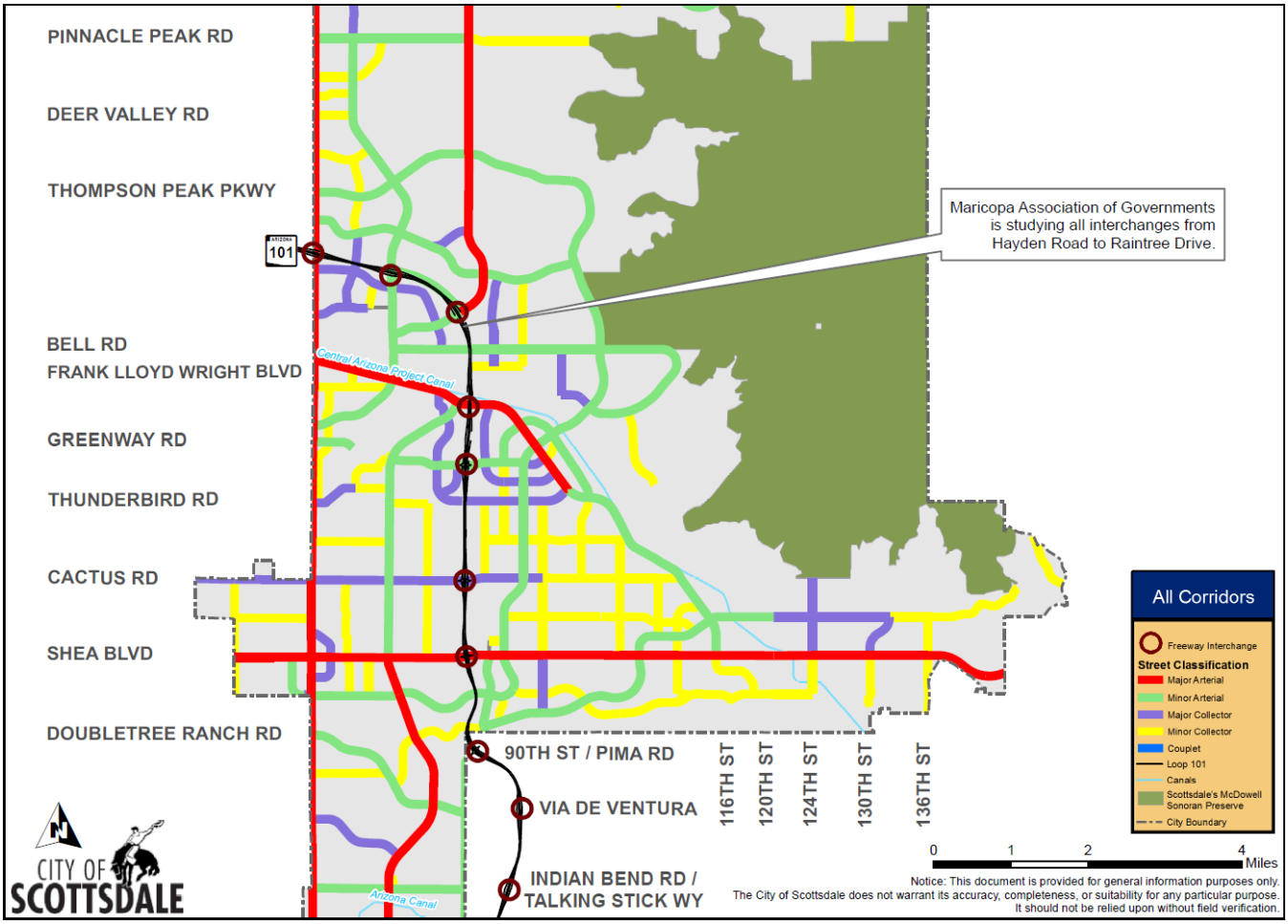



**Figure 14: All Street Classifications – Indian Bend to Pinnacle Peak**

provided near intersections. Appendix 5-3Alists the minimum stopping sight distances for the various design speeds.

a. Stopping Sight Distance
The minimum stopping sight distance is the distance required by the driver of a vehicle, traveling at a given speed, to bring the vehicle to a stop after an object on the road becomes visible. Stopping sight distance is measured from the driver's eyes, 3.5 feet above the pavement surface, to object 2.0 feet tall on the roadway, or per currently accepted AASHTO standards.

b. Passing Sight Distance
Passing sight is the minimum sight distance that must be available to enable the driver of one vehicle to pass another vehicle safely, without interfering with the speed of an oncoming vehicle. The sight distance available for passing at any one place is the distance at which a driver, whose eyes are 3.5 feet above the roadway surface, can see the top 0.8 feet of an object 4.35 feet tall on the road (corresponding to an object height of 3.5 feet tall), or per currently accepted AASHTO standards.

3. Minimum Vertical Curve Lengths
Minimum vertical curve lengths are determined by sight distance requirements for a given design speed.

a. Crest Vertical Curve Lengths
Minimum crest curve lengths are determined by either the stopping sight distance or the passing sight distance, whichever provides the greatest curve length. Refer to AASHTO's Policy on Geometric Design of Highways and Streets for the equations that are to be used to determine the minimum crest vertical curve lengths based upon stopping distance and passing sight distance requirements.

b. Sag Vertical Curve Lengths
Minimum sag vertical curve lengths are determined by either the stopping sight distance or comfort factors. The longer of the two possible minimum curve lengths will be used. Refer to AASHTO's Policy on Geometric Design of Highways and Streets for the equations that are to be used to determine the minimum sag vertical curve lengths based upon stopping distance and comfort factors requirements.

## COMBINED CURVES 5-3.122

When horizontal and vertical curves are combined, the horizontal curve needs to lead and follow the vertical curve, and not be introduced near the top or bottom of a crest vertical curve or bottom of a sag vertical curve. For additional information on this topic, refer to the AASHTO's Policy on Geometric Design.

## INTERSECTIONS 5-3.123

Although all intersections share certain common elements, they are not subject to generalized treatment. To minimize conflicts and provide for anticipated traffic movements, each intersection must be evaluated based on individual characteristics and designed based on the following factors:

A. Traffic factors such as capacities, turning movements, vehicle size and operating characteristics, vehicle speed, pedestrian and bicycle movements, transit operations and collision history.
B. Physical factors such as topography, existing conditions, channelization requirements and available sight distance.
C. Human factors such as driving habits, reaction to surprises, decision and reaction time, and natural paths of movement.

Unless otherwise noted, intersection and street design for major collectors and arterial streets shall assume a WB-62 design vehicle as defined in AASHTO's A Policy on Geometric Design of Highways and Streets. There may be locations within or adjacent to heavy commercial or industrial areas where a WB-67 design vehicle may be required by Transportation staff.

For this section, the term "intersection" shall refer to the location where a public street meets or overlaps another public street, a private street, or a private driveway unless specifically noted otherwise.

A. **Public and Private Street Intersection Spacing**
Street intersections along major streets should be kept to a minimum. Along arterial streets, the minimum intersection spacing should be 1/4 mile (1320 feet). Along collector streets (major collectors and minor collectors), the minimum spacing should be 1/8 mile (660 feet). Along local streets (local residential and local collectors), the minimum spacing should be 250 feet. New intersections on major streets should be located to align with planned median openings. New intersections on minor streets should be located to avoid creating conflicting turning movements with existing intersections or driveways.

B. **Angle of Intersection**
A right-angle intersection provides the shortest crossing distance for intersecting traffic streams. It also provides the most favorable condition for drivers to judge the relative position and speed of oncoming vehicles. Where special conditions exist, intersection angles may diverge from a right-angle by a maximum of 2 degrees (up to 4 degrees with approval of the Transportation Department) on arterial streets and major collector streets; and by a maximum of 4 degrees (up to 15 degrees with approval of the Transportation Department) on minor and local collector streets, couplets and local streets.

C. **Alignment and Profile**
Intersections occurring on horizontal or crest vertical curves are undesirable. When there is latitude in the selection of intersection locations, vertical or horizontal curvature should be avoided. A line or grade change is frequently warranted when major intersections are involved. If a curve is unavoidable, it should be as flat as site conditions permit. Where the grade of the through roadway is steep, flattening through the intersection is desirable as a safety measure.
The maximum profile grade through an intersection is 6 percent for arterials and collector streets and 8 percent for local streets. The profiles and cross slopes of the intersecting streets need to be coordinated with one another to ensure a safe and comfortable driving surface. Typically, this may mean extending grades through

the intersection for approximately 75 feet to 150 feet. Short vertical curves may be necessary in lieu of grade breaks.

D. **Intersection Sight Distance**

To provide the opportunity for vehicles at an intersection to safely cross or make left or right turns onto a through street, adequate sight distance must be provided at all street intersections and where driveways intersect with streets. Sight distance must also be provided for left turning traffic turning from the main street as described in AASHTO Intersection Sight Distance Case F. If opposing left turn lanes are present, the opposing left turns must be designed having a positive off-set to allow for sight distance when opposing vehicles are present. Refer to Figure 5-3.28.

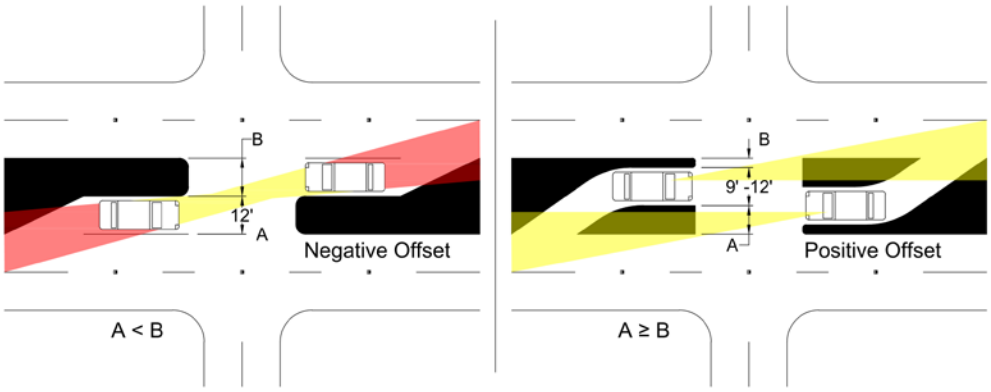
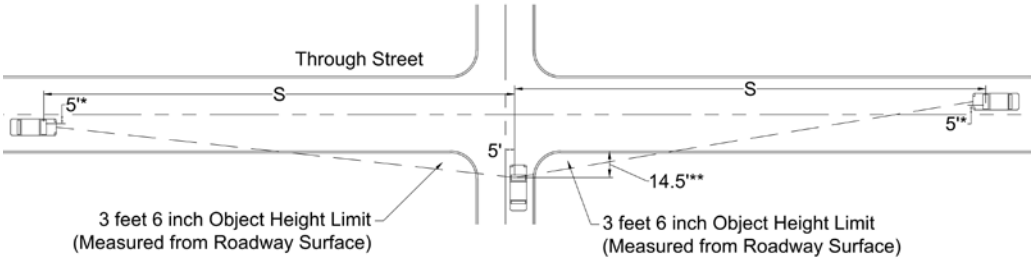



FIGURE 5-3.25 INTERSECTION DEPARTURE SIGHT DISTANCE REQUIREMENTS

Sight distance should be based on the design speed for the roadway. Design speeds for new roadways should conform to those identified in Section 5-3.100. Typically design speeds are 10 mph higher than the anticipated posted speed limit. The sight distance requirements outlined below are required for all private and public street intersections and at all intersections of driveways onto public or private streets. These standards do not apply to driveway intersections located on private property and that are internal to the private property and that do not intersect with streets.

Figure 5-3.29 depicts the technique used to determine the driver's eye location and an approaching vehicle; a line is then drawn to connect these 2 points. Continuous unobstructed line of sight must be provided along this line and throughout the approach to the intersection, providing an unobstructed sight triangle to the side street driver. Sight lines are to be drawn on roadway and landscaping plans to represent the areas that must be free of all objects and topography more than 2.5 feet above the adjacent roadway surface (edge of pavement); however, certain vegetation may be allowed. Vegetation placed within the sight triangle will be of a low height variety that remains below 2.5 feet when mature (measured from the roadway surface). Trees may be allowed within the triangle if the canopies are above 8 feet, they are a single trunk variety, and they are not spaced in a configuration that creates a "picket fence" effect.




**Side Street/Driveway/Alley**
Applies to stop controlled side street or all approaches to a signalized intersection for right-on-red traffic.

* 5 feet measured to nearest lane line or centerline.

** 14.5 feet measured from face-of-curb or edge-of-travel way.

S = Intersection sight distance in feet on driver's left and right for right turns, left turns and through traffic.

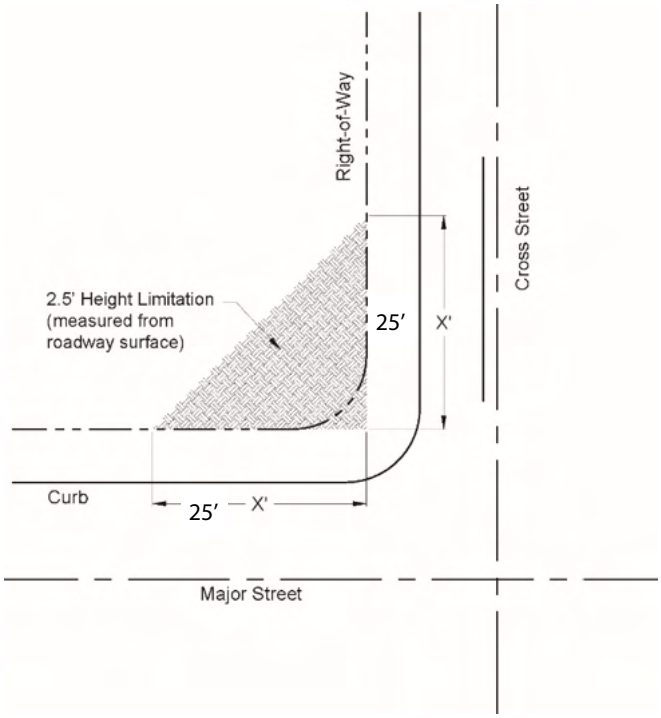
(See AASHTO Geometric Design of Highways and Streets for additional sight distance requirements)

(See, Appendix 5-3B for distance S)

FIGURE 5-3.26 INTERSECTION DEPARTURE SIGHT DISTANCE REQUIREMENTS

1. Intersection sight distance requirements are as follows:
   a. Right-Angle Intersections
      Right-angle intersections are those whose legs meet at an angle of 88 to 90 degrees. For these right-angle intersections the sight distances shown in and Appendix 5-3B are to be used with Figure 5-3.29 to calculate the sight triangle. Appendix 5-3B presents the sight distance requirements for varying roadway widths and design speeds for passenger cars, single unit trucks and combination trucks. If high volumes of truck traffic are anticipated, sight distances given in Appendix 5-3B will be used. Sight distances for vehicles turning left from the main street should also be considered and calculated based on the AASHTO Geometric Design of Highways and Streets.
   b. Skewed Intersections
      For skewed intersections where the intersection angles are less than 88 degrees, sight distances must be calculated in accordance with the procedures described in AASHTO's Geometric Design of Highways and Streets. Skewed intersection design must include appropriate design for pedestrian crossings and the location of curb ramps.
   c. Intersections Within or Near a Curve
      Sight distance measurements, identified in Figure 5-3.30 need to follow the curved street alignment when the intersection is within or near a horizontal curve.
2. Traffic Safety Triangles
   Traffic Safety Triangles should be used to limit the height of structures, vegetation and other improvements on corner properties immediately adjacent

to all street intersections and where driveways intersect with streets. Safety triangles are not to be used as a substitute for intersection sight distance. Safety triangles provide additional visibility around corners for all intersection approaches and should be applied to the design of walls and landscape features. Fixed objects within the safety triangle cannot be taller than 2.5 feet measured from the adjacent roadway surface (edge of pavement); vegetation should be trimmed to 2.5 feet tall measured from the adjacent roadway surface. Figure 5-3.30 Traffic Safety Triangle on Corner Property depicts the method used to determine the safety triangle location. The safety triangle will follow the curvature of the roadway/right-of-way along curved roadway alignments. The sight distance requirements contained in both Figure 5-3.29 and Figure 5-3.30 are applied at all corner lots.




* If the standard right-of-way (46 ft. local residential, 60 ft. local collector) is not available, the safety triangle (X) shall measure 60 ft. on local residential streets and 70 ft. on local collector streets from the centerlines of the streets.

FIGURE 5-3. 27 TRAFFIC SAFETY TRIANGLE ON CORNER PROPERTY

3. Right-of-Way at Corners
   A minimum of 25-foot radius or 25-foot by 25-foot triangle right-of-way shall be dedicated at street intersections to provide room for traffic control and sight distance.

E. **Auxiliary Lanes**

An exclusive turning lane permits separation of conflicting traffic movements and removes turning vehicles from the flow of through traffic. The requirement for an auxiliary lane may necessitate additional rights-of- way. Modifications to these requirements, including the storage and transition lengths may be allowed by the Transportation Department where the conditions do not allow the full design standard to be met.

1. Right-Turn Lanes
   Right-turn lanes are required at all street intersections (public or private) on major arterials. Right-turn lanes may be required by the Transportation Department on minor arterial and collector street intersections. The lane lengths should be determined based on the anticipated turning volume and whether there is signalized or unsignalized traffic control. The standard vehicle storage length for a right-turn lane is 150 feet, with a 100-foot minimum length. Right turn lanes should be 11 feet wide. Refer to City of Scottsdale Standard Detail #2225 for taper and radius dimensions.
2. Left-Turn Lanes
   Left-turn lanes are required at all street intersections on major collectors and arterials. Left-turn lanes may also be required at street intersections on minor collectors based on the projected left-turn volume and conflicting through volume. The lane lengths should be determined based on the anticipated turning volume and whether there is signalized or unsignalized traffic control. For left-turn lanes at signalized intersections, dual turn lanes should be considered when the turn volume exceeds 300 vehicles per hour, the opposing through volume exceeds 1,000 vehicles per hour, or the delay to left turning vehicles exceeds 45 seconds. Sight distance must be considered and calculated for these movements based on the AASHTO Policy on Geometric Design to determine the allowance of permitted left turns. Left-turn lane widths should be 11 feet however can be narrowed to a minimum of 9' to provide positive off-set. Refer to Figure 5-3.28. Refer to City of Scottsdale Standard Detail #2225 for taper and radius dimensions.
3. Local Street Intersections with Major Streets
   At intersections of local streets with major streets (Major Collectors, Minor Arterials, and Major Arterials) the pavement width shall widen to a minimum width of 36 feet to provide for a separate left turn. The 36-foot pavement width shall be provided for a minimum length of 100 feet from the right-of- way line with an appropriate taper length as approved by Transportation staff.

F. **Median Design**

Raised medians are required on arterial streets and some major collector streets to separate traffic flows, channelize left turns and reduce conflicts. On most collector streets, flush or painted medians provide space between the through traffic lanes for left turning vehicles. Standard median widths are shown in Figure 5-3.31 through Figure 5-3.34. Variations to these standards may be approved through the master plan process or by the Transportation Department.

1. Raised Medians and Median Openings
   Raised medians, where required, must be provided in accordance with the applicable city standard details, with the appropriate median width as noted above.
   a. Spacing and Location of Median Openings
      If a street has a raised median, it is not possible to provide an opening in the median for every street intersection or driveway location. Full median openings should occur at not less than 1/4-mile intervals (1320 feet) on

6. Left Turn Bays
   a. Used at signalized intersections and major cross streets and driveways
   b. Arrow and "ONLY" shall be placed in left turn bays
   c. A second arrow is placed at the top of the bay only as determined by Traffic Engineering through review
   d. All pavement symbols, arrows and legends shall be Type 1 permanent, high performance pre- formed pavement tape (tape must perform as 3M 380I-ES series or equivalent)
   e. Use White RPMs Type G 1-way reflective

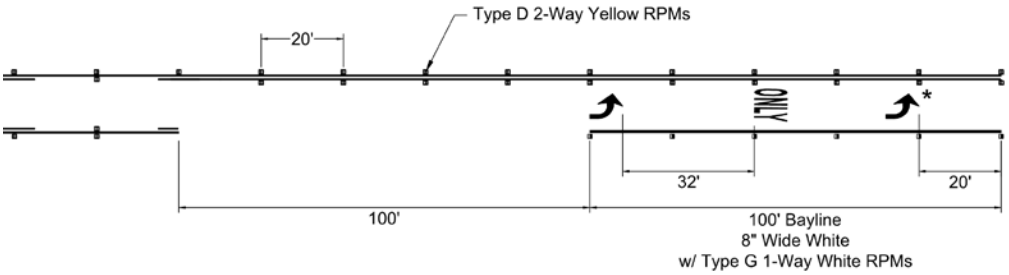



FIGURE 5-5.7 LEFT TURN BAY MARKINGS

**Offset Left Turn Lanes**

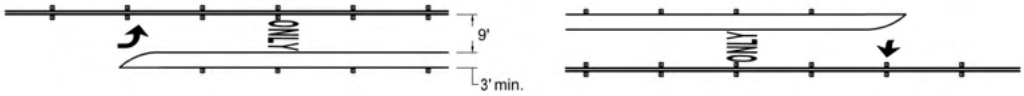



FIGURE 5-5.8 OFFSET LEFT TURN LANES

7. Left-In/Left-Out
   a. Turn and Merge Arrows as per ADOT Signing and Marking Standard Drawing M-10 1&2
   b. Concrete curb shall be 8" thick at median bullnose per MAG Detail 223
   c. Type D Roll Curb and Gutter shall be used for separating island per MAG Detail 220-1

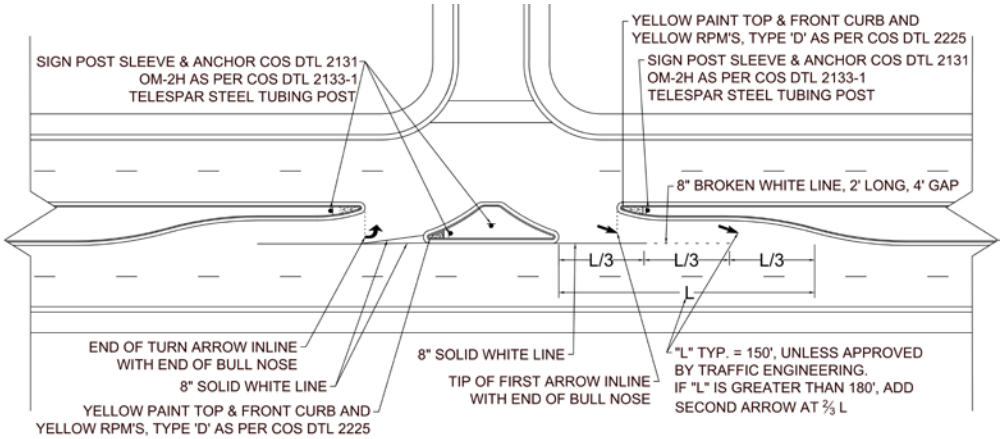



FIGURE 5-5.9 LEFT-IN/LEFT-OUT MARKINGS AND SIGNING

8. Right Turn Bay
   a. 100 feet bay line, 8-inch-wide White line
   b. One R3-5R
   c. Arrow and "ONLY" shall be placed in right turn bays
   d. If bay is 150' feet or more, a second arrow is placed at the top of the bay only as determined by Traffic Engineering through review
   e. For turn bays at stop sign, R3-5R not to obstruct stop sign

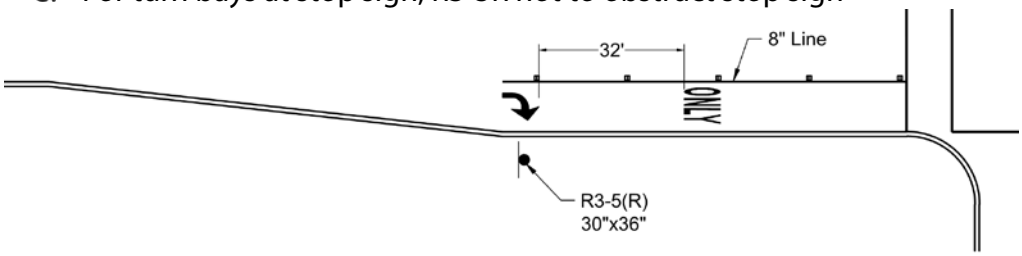



FIGURE 5-5.10 RIGHT TURN BAY MARKINGS

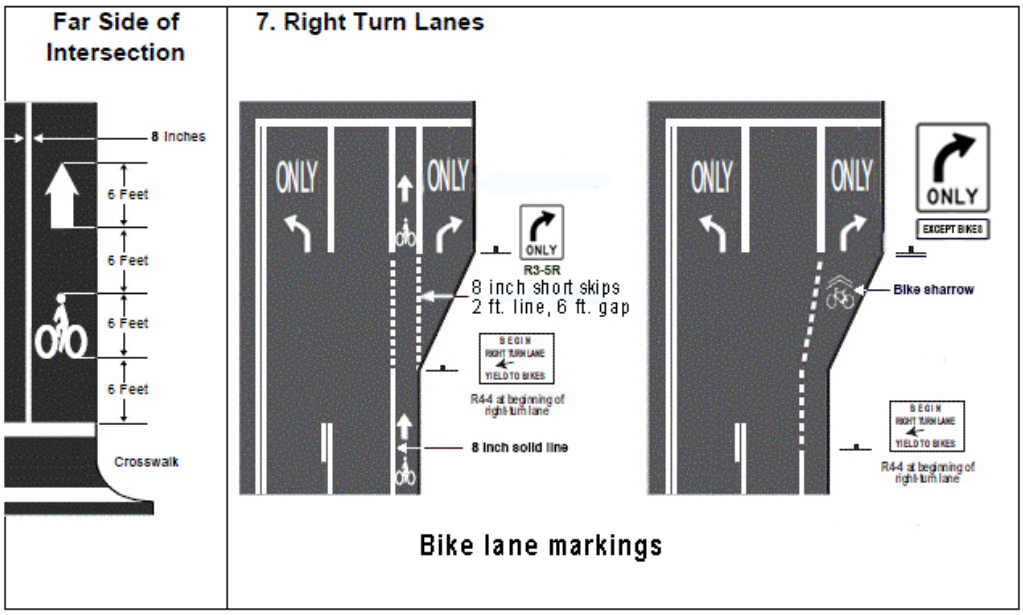
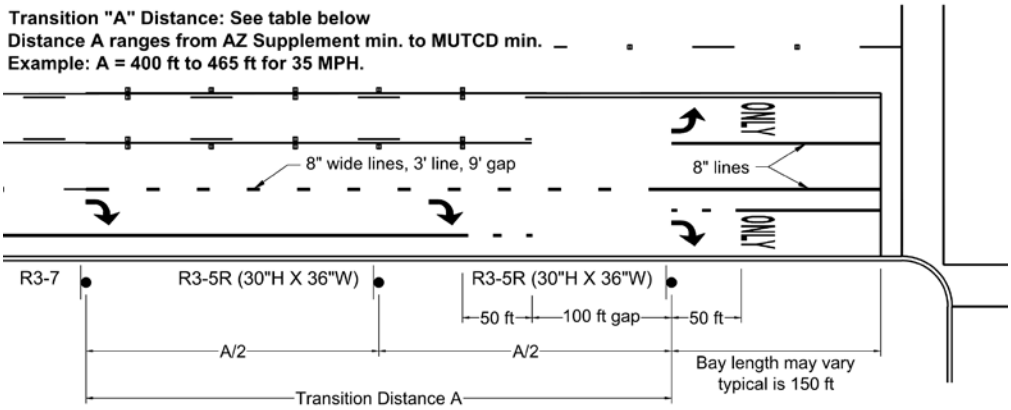



FIGURE 5-5.11 BIKE LANE MARKINGS

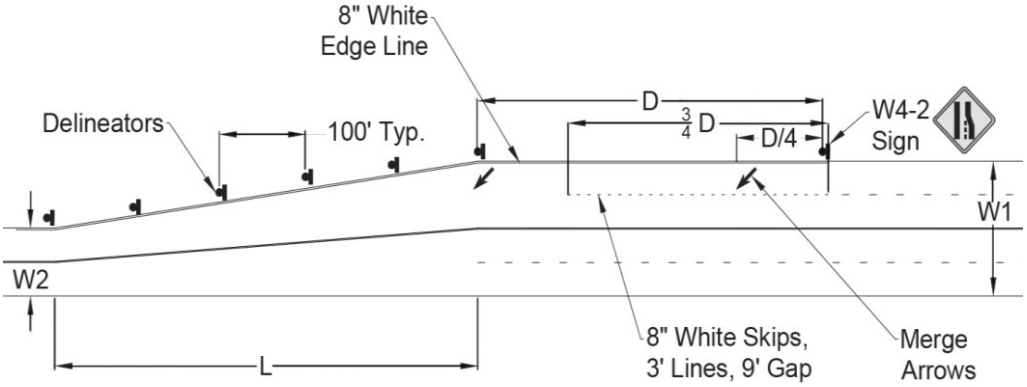
9. Trap Lanes



| Posted or 85th Percentile Speed | AZ Supplement | MUTCD |
|---|---|---|
| | Condition A: Speed reduction and lane changing in heavy traffic | |
| 20 mph | 175 ft | 225 ft |
| 25 mph | 250 ft | 325 ft |
| 30 mph | 325 ft | 460 ft |
| 35 mph | 400 ft | 565 ft |
| 40 mph | 475 ft | 670 ft |
| 45 mph | 550 ft | 775 ft |
| 50 mph | 625 ft | 885 ft |
| 55 mph | 700 ft | 990 ft |
| 60 mph | 775 ft | 1,100 ft |
| 65 mph | 850 ft | 1,200 ft |
| 70 mph | 925 ft | 1,250 ft |
| 75 mph | 1,000 ft | 1,350 ft |

FIGURE 5-5.12 TRAP LANE MARKINGS

10. Lane Reduction/Merge




a. $L = W \times S$ for speeds > 45 mph
b. $L = \frac{WxS^2}{60}$ for speeds < 45 mph
c. S = Design speed for 85th percentile speed, whichever is higher
d. W = $W1 - W2$
e. Dimension "D" equals advance warning distance as per the 2009 MUTCD, Refer to Table 2C-4
f. At least two Merge arrows should be used. If "D" ≥ 400ft., additional arrows should be considered

FIGURE 5-5.13 LANE REDUCTION/MERGE

11. Crosswalks and Stop Bars
    a. Crosswalks are to be used at signalized intersections, all-way stops, roundabouts, and at other locations determined by Traffic Engineering.
    b. 25 M.P.H. = 12-inch wide stop bar
    c. 30 M.P.H. and greater = 18-inch wide stop bar

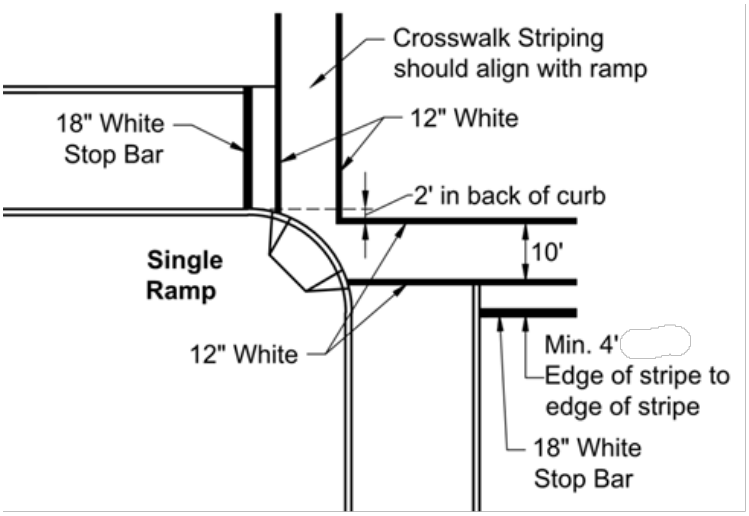



FIGURE 5-5.14 SINGLE RAMP CROSSWALK MARKINGS

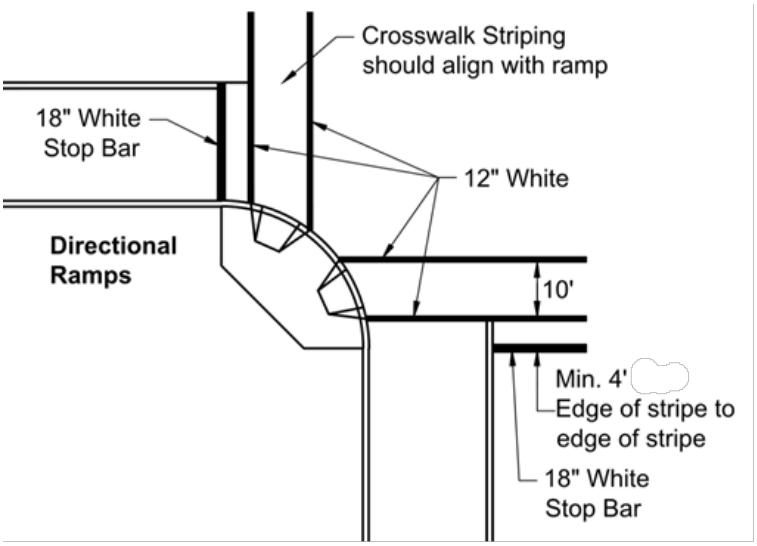



FIGURE 5-5.15 DIRECTIONAL RAMP CROSSWALK MARKINGS

12. Dual Left Turn Movement
    Paint short skips through intersection

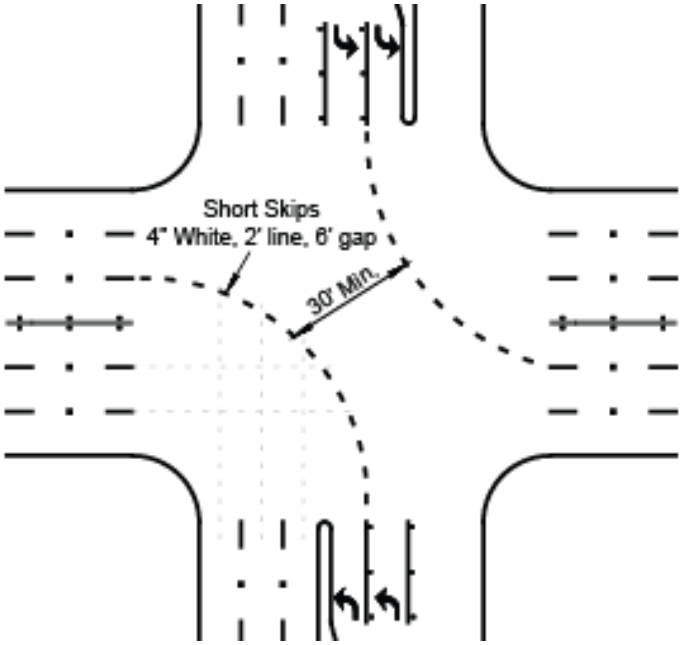



FIGURE 5-5.16 DUAL LEFT TURN INTERSECTION

13. Roundabouts
    Refer to Section 5-3.124 of this manual
14. Lane Widths, Typical and Exceptions
    a. Travel Lane Widths:
    Travel lane widths for new street construction shall be as shown in the street cross-sections contained in Section 5-3.100. Typical lane widths are 11 feet wide; some local streets may have 10 feet wide lane widths. Alternatives to the typical lane width may be approved by the Traffic Engineering Director upon written request. The lane widths shall be determined as measured on a consistent asphalt surface from edge of asphalt, lip of gutter, or center of lane stripe.
        i. Through lanes may be reduced to 10' feet on arterial streets where there are constraints or where bike lanes are being added.
        ii. Through lanes may be reduced to 9.5' feet on collector streets where there are constraints or where bike lanes are being added.
        iii. Turn lane widths may be reduced to 9.5' feet when needed to accommodate wider through lanes or bike lanes, or when adjacent to curbing.
        iv. Through lane and turn lane widths of 9.5' feet may only be considered on straight sections of roadway with minimal truck traffic.
    b. Bike lane widths:
    Bike lane widths for new street construction shall be as shown in the street cross-sections contained in Section 5-3.100. Typical lane widths are 4' or 6' feet wide of asphalt not including gutters or other portions of curbing.

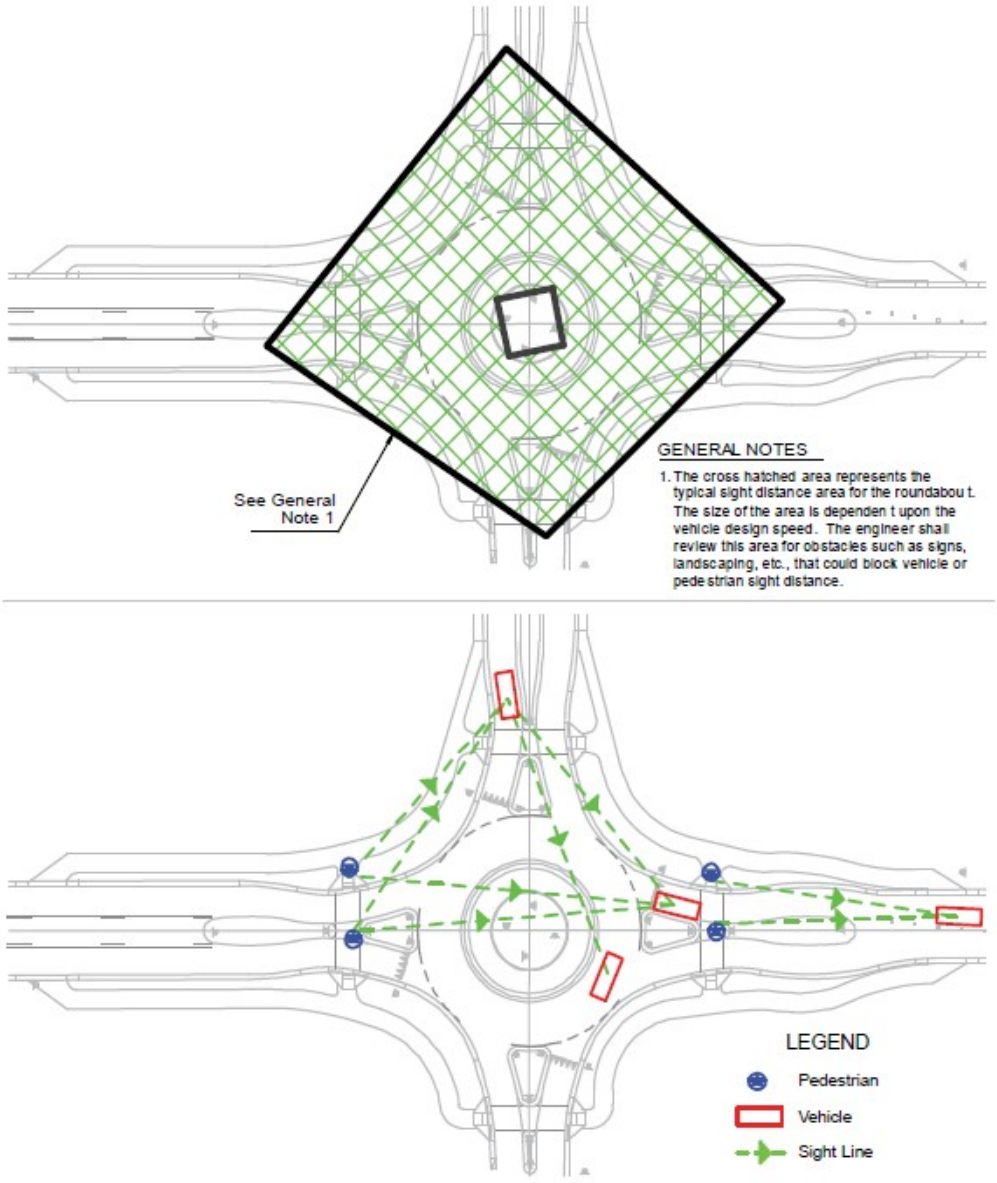



FIGURE 5-3.34 ROUNDABOUT SIGHT DISTANCE

## STREET ACCESS AND DRIVEWAYS 5-3.2000

Driveway types are determined by land use type and street classification. The standards for these driveway types are illustrated in Figure 5-3.38 through Figure 5-3.43. Refer to Figure 5-3.39 for driveway grade standards.

### DRIVEWAY SPACING 5-3.201

Standard and minimum driveway spacing will generally conform to the following standards. This minimum spacing applies to proposed site driveway separation as well

as separation from existing or planned driveways and streets on adjacent parcels. The spacing is measured to the driveway or street centerline.

| STREET TYPE | STANDARD DRIVEWAY SPACING | MINIMUM DRIVEWAY SPACING |
|---|---|---|
| Local Residential / Local Collector | 50 feet | 50 feet |
| Local Industrial / Local Commercial | 165 feet | 125 feet |
| Minor Collector | 165 feet | 125 feet |
| Major Collector | 250 feet | 150 feet |
| Minor Arterial | 330 feet | 250 feet |
| Major Arterial | 500 feet | 300 feet |

FIGURE 5-3.35 DRIVEWAY SPACING

Standard driveway spacing criteria shall apply for all new driveways where there are no conflicts with existing driveway and street intersections, site frontage is adequate, and there are no conflicts with natural features or drainage structures. The minimum driveway spacing may be allowed when approved by Transportation staff where those conflicts noted above exist or other site plan associated issues do not allow the standard driveway spacing to be implemented. In locations where the standard driveway spacing cannot be achieved, a deceleration lane may be required to mitigate the impact of the closer driveway spacing.

For sites that have frontage on two streets, primary access should be onto the minor street frontage. A maximum of two driveway openings is permitted to a site or parcel from the abutting street(s). The Transportation Department may permit additional driveway entrances when projected travel demands indicate it is in the interests of good traffic operation, and when adequate street frontage exists to maintain the above guidelines.

Where new development adjoins other similarly zoned property or compatible land uses, a cross access easement may be required to permit vehicular movement between the parcels or to reduce the number of access points required onto the adjacent public street. Combining driveways reduces the number of conflict points for pedestrians, bicyclists, and other vehicles. This may be required regardless of the development status of the adjoining property, unless the cross access is determined to be unfeasible by city staff.

New driveways on collector and arterial streets in areas that do not have raised medians shall align with existing or planned driveways and street intersections to avoid creating interlocking left turns and other conflicts. Offsets in the driveway centerlines may be allowed up to 6 feet. If the driveways cannot be aligned, the driveways should be offset a minimum distance of 125 feet along streets without a center turn lane, and a minimum 250 feet along streets with a center turn lane.

When site driveway locations are modified, any existing driveways that are not going to be utilized for access must be removed and replaced with curb, gutter, and sidewalk to match the adjacent improvements.

## DRIVEWAY LOCATIONS 5-3.202

A new access driveway will not be allowed (measured to the driveway centerline):

A. Within 30 feet of any commercial property line, except when it is a joint-use driveway serving two abutting commercial properties and access agreements have been exchanged between, and recorded by, the two abutting property owners;
B. When the total width of all driveways serving a property exceeds 50 percent of the curb line frontage;
C. Within 50 feet of the rights-of-way line of an intersecting non-arterial street;
D. Within 100 feet of the rights-of-way line of an intersecting arterial street;
E. Within 100 feet of an approved median opening location on an arterial street;
F. Less than the minimum spacing as established under Section 5-3.201;

## VEHICULAR NON-ACCESS EASEMENT 5-3.203

For proper control of driveway access, a vehicular non-access easement (V.N.E.) is to be granted to the city, except at approved access points, along all collector and arterial streets when abutting property develops.

## RESIDENTIAL DRIVEWAYS 5-3.204

A. **Single-family Residential Development**
Driveways serving single-family residential units should be S-1 type driveways as shown in Figure 5-3.40. Only one driveway per lot street frontage is allowed except where the street frontage is of sufficient length to maintain a separation of 50 feet between driveways. The minimum driveway length is 18 feet, measured from the face of the garage opening to the back of sidewalk or the back of curb if no sidewalk is provided. Refer to Section 2-2.308 for additional discussion on driveways. Refer to Standard Detail Drawings (2200 Series) for access ramp design requirements.

B. **Multi-family Residential Development**
Driveways serving multi-family residential units should be CL and CH type driveways, as shown in Figure 5-3.41 through Figure 5-3.44. Type CL-1 and CL-2 are low-volume driveways to be used on local streets. Type CH-1, -2 and -3 are high volume driveways to be used on collector and arterial streets. CL type driveways may be required along urban character collector and arterial streets with higher pedestrian traffic. The minimum driveway length is 50 feet, measured from the entrance to the off-street parking area to the back of sidewalk, or to the back of curb if no sidewalk is provided. Refer to Standard Detail Drawings (2200 Series) for access ramp design requirements.

C. **Limitations on Residential Access**
Residential properties that have frontage on a local street, an arterial, or collector street are limited to local street access.
In some instances, residential parcels fronting only on arterial or collector streets may be given access if alternate public access is not available. When such access is allowed, the driveway must be circular, or it must have a turn-around area to ensure there is no need for backing onto the street.

## NON-RESIDENTIAL DRIVEWAYS

5-3.205

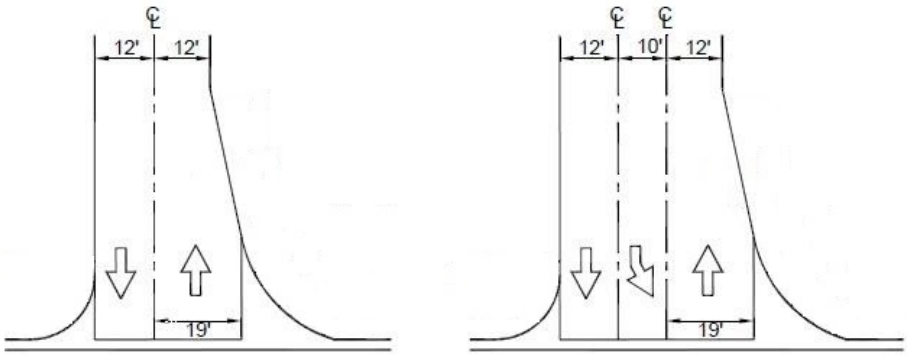
Driveways for commercial and industrial development are shown on Figure 5-3.41 through Figure 5-3.44. The minimum length for a commercial or industrial driveway is 50 feet, measured from the entrance to the off-street parking area to the back of sidewalk or the back of curb if no sidewalk is provided. Driveway designs need to include a level path of travel across the driveway for pedestrians in conformance with ADA requirements.

A. **Commercial Driveways**

The "CL" and "CH" type driveways are designed to serve commercial properties. A "CL" type driveway is used for low-volume driveways on low volume streets. A "CH" type driveway is used for driveways on arterials, major collectors and high volume minor collectors, or at other locations when required by the Transportation Department. The CH-2 and CH-3 driveways are used at all access driveways opposite median openings. CL type driveways may be required along urban character collector and arterial streets with higher pedestrian traffic. Refer to Standard Detail Drawings (2200 Series) for access ramp design requirements.

B. **Industrial Driveways**

The CL-1 and CH-1 type driveways are typically used to serve industrial properties. Normally industrial access is not permitted on arterial or major collector streets; however, if such access is allowed, commercial driveway standards apply. Refer to Standard Detail Drawings (2200 Series) for access ramp design requirements.

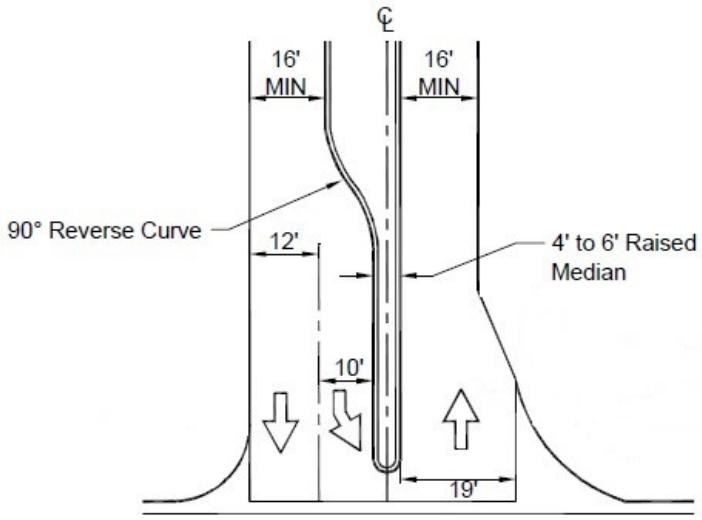



**Two Way**
**CH-1**

**Two Way with Two Egress Lanes**
**CH-2**

*Note: Pedestrian ramps in this figure are illustrative only and should be designed and constructed per COS Supplement to MAG Details.

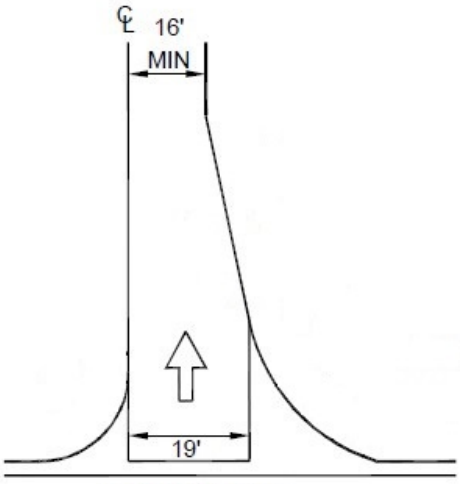
FIGURE 5-3.38 TYPE CH TWO-WAY DRIVEWAYS




**Two Way Raised Median**
**CH-3**

*Note: Pedestrian ramps in this figure are illustrative only and should be designed and constructed per COS Supplement to MAG Details.

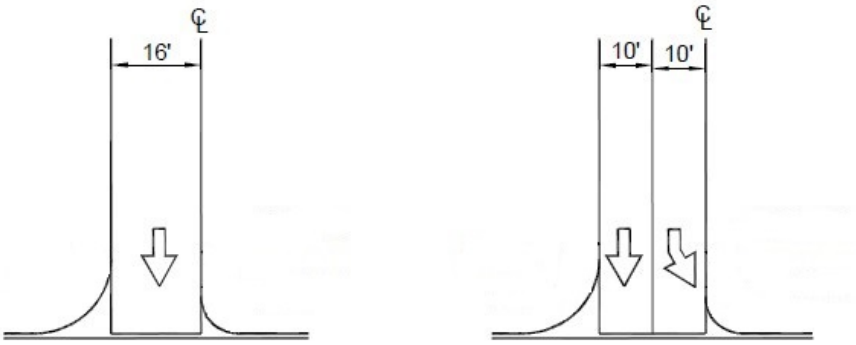
FIGURE 5-3.39 TYPE CH TWO-WAY DRIVEWAYS WITH RAISED MEDIAN




**One Way Ingress**
**CI-1**

*Note: Pedestrian ramps in this figure are illustrative only and should be designed and constructed per COS Supplement to MAG Details.

FIGURE 5-3.40 TYPE CL ONE-WAY INGRESS DRIVEWAYS




**One Way Egress**
**CI-2**

**Two Lane, One Way Egress**
**CI-3**

*Note: Pedestrian ramps in this figure are illustrative only and should be designed and constructed per COS Supplement to MAG Details.

FIGURE 5-3.41 TYPE CL ONE-WAY INGRESS DRIVEWAYS

## DECELERATION LANES 5-3.206

The requirement for an auxiliary lane may necessitate additional rights-of-way. The standard storage length for a deceleration lane is 150 feet, with a 100-foot minimum length. Modifications to the design standard are allowed by the Transportation Department where the conditions do not allow the full taper or storage length. Deceleration lanes are required at all new driveways on major arterials and at new commercial/retail driveways minor arterials. Deceleration lanes for driveways may also

be required on collector streets and for non-commercial/retail driveways on minor arterials. The lane length should be based on the distance needed to allow the vehicle to exit the through lane and slow to a 15-mph travel speed. To determine the need for a deceleration lane on streets classified as a minor arterial or collector, use the following criteria:

A. At least 5,000 vpd are expected to use the street;
B. The 85th percentile traffic speed on the street is at least 35 mph;
C. At least 30 vehicles will make right turns into the driveway during a 1-hour period.

Deceleration lanes may be required at driveways along collector and arterial streets that are at or over capacity to minimize the impacts to traffic flow along the adjacent street. They may also be required at driveway locations that cannot meet the standard driveway spacing to reduce the impacts of the separation from closely spaced streets and driveways.

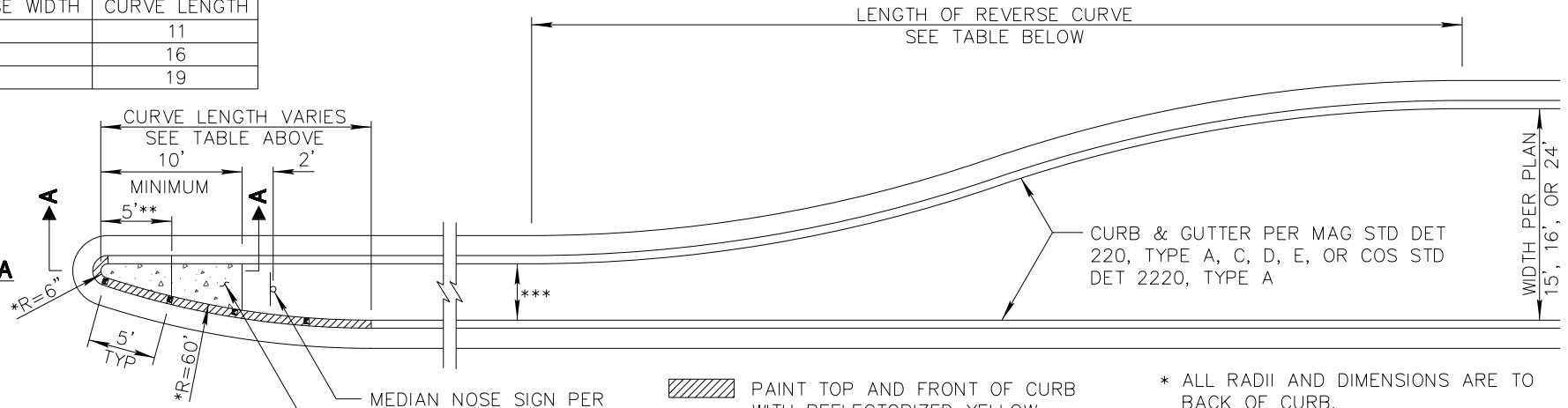
The requirement for deceleration lanes may be subject to the Transportation Department review in urban areas and where conflicts with deceleration lane(s) exist.

## BRIDGES, RETAINNG WALLS, AND STRUCTURAL CLEARANCES 5-3.300

### BRIDGES 5-3.301

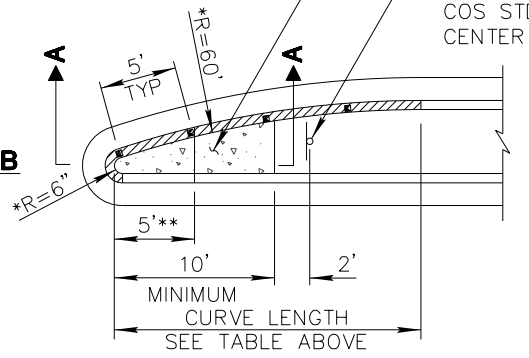
A. **Bridge Roadbed Width**
   The clear width of all bridges, including grade separation structures, needs to equal the full width of the physical improvements consisting of sidewalk, street, median and curb and gutter.
B. **Approach Guardrail**
   If a vehicular railing or safety-shaped barrier is within the clear zone as defined by AASHTO Roadside Design Guide, approach guardrails are to be installed on all approach ends in accordance with AASHTO guidelines and the below paragraph, E. Railings.
C. **Cross Slope**
   The crown is normally centered on the bridge except for one-way bridges, where a straight cross slope in one direction is used. The cross slope needs to be the same as for the approach pavement.
D. **Median**
   On multi-lane divided highways, a bridge median that is 26 feet wide or less needs to be decked. The decking of all medians greater than 6 feet wide needs to be grated to allow natural light into the structure. Exceptions must be submitted to the Transportation Department for approval.
E. **Railings**
   The length of the railing should be calculated as part of the design process. The railings to be used are the State of Arizona or State of California Department of Transportation standard design railings. There are four types of railings:
   1. Vehicular Barrier Railings
      The primary function of these railings is to retain and redirect errant vehicles.

| MEDIAN NOSE CURVE LENGTH (FT) | |
|---|---|
| MEDIAN NOSE WIDTH | CURVE LENGTH |
| 2 | 11 |
| 3 | 16 |
| 4 | 19 |




PAINT TOP AND FRONT OF CURB WITH REFLECTORIZED YELLOW TRAFFIC PAINT AND ADD TYPE D YELLOW TWO-WAY REFLECTIVE RAISED PAVEMENT MARKERS TO MEDIAN NOSE, SPACED AT 5-FEET.

USE OF LAYOUT A OR B:
DESIGNER SHOULD ANALYZE TRUCK TURNING MOVEMENTS AND TRAFFIC VOLUMES IN DETERMINING WHICH LAYOUT TO USE FOR THE INTERSECTION.

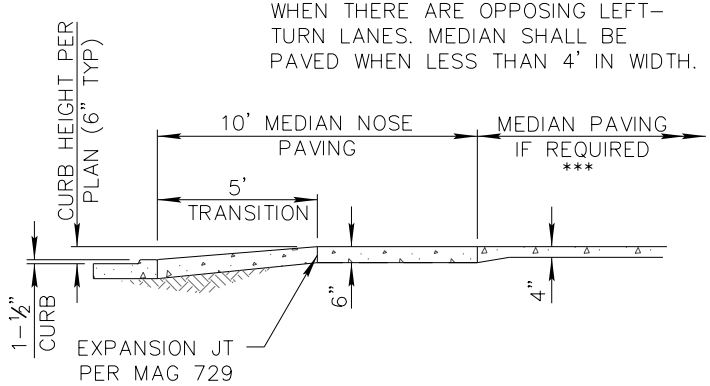



| LENGTH OF REVERSE CURVE (FT) | | | |
|---|---|---|---|
| MEDIAN WIDTH (FT) | DESIGN SPEED (MPH) | | |
| | <40 | 40-50 | >50 |
| 15 | 70 | 95 | 150 |
| 16 | 75 | 105 | 160 |
| 24 | 110 | 150 | 230 |

* ALL RADII AND DIMENSIONS ARE TO BACK OF CURB.

** MEDIAN NOSE TRANSITION APPLIES TO CURB & GUTTER PER MAG STD DET 220, TYPE A, TYPE E, OR COS STD DET 2220, TYPE A. SEE SECTION A-A.

*** 4' MINIMUM WIDTH. 2' MINIMUM WIDTH ALLOWED FOR 15' AND 16' MEDIANS WHEN THERE ARE OPPOSING LEFT-TURN LANES. MEDIAN SHALL BE PAVED WHEN LESS THAN 4' IN WIDTH.




**SECTION A-A**

REVISED 9/19/19

| DETAIL NO. 2225 | City of Scottsdale Standard Details | APPROVED BY: Scottsdale Standards & Specifications Committee | MEDIAN NOSE & REVERSE CURVE DETAILS | DETAIL NO. 2225 |
|---|---|---|---|---|

# Relevant ADOT Standards

# 245 TURN LANE WARRANTS

The intent of this document is to offer guidance to warrant the installation of dedicated left or right turn lanes on state routes, whether during new construction, major reconstruction, or in the course of the encroachment permitting process. **The primary determining factors to warrant an exclusive turn lane shall be: (a) the combination of through traffic volume and turning traffic volume, (b) the posted roadway speed, and (c) the number of through lanes on the roadway.** Note: Dual right- or left-turn lanes should be considered when the turning volume exceeds 300 vehicles per hour. In addition to the criteria presented in the tables below, other factors should be taken into consideration when performing a warrant study such as: shoulder width, percentage of trucks, sight distance, highway grade, horizontal and vertical curvature and crash history.

## Right-Turn Lane Warrants

| Peak Hour Traffic Volume on the Highway in Advancing Direction | Minimum Peak Hour Right-turn Traffic Volume | | | | |
|---|---|---|---|---|---|
| | # of thru lanes per direction | | | | |
| | 1 | | 2 | | 3 |
| | < 45 MPH Posted Speed | ≥ 45 MPH Posted Speed | < 45 MPH Posted Speed | ≥ 45 MPH Posted Speed | All Speeds |
| ≤ 200 | | | | | |
| 201 – 300 | - | 30 | - | - | - |
| 301 – 400 | - | 19 | - | 55 | - |
| 401 – 500 | 85 | 14 | - | 30 | - |
| 501 – 600 | 58 | 12 | 140 | 25 | - |
| 601 – 700 | 27 | 9 | 80 | 18 | - |
| 701 – 800 | 20 | 8 | 53 | 15 | - |
| 801 – 900 | 12 | 7 | 40 | 12 | - |
| 901 – 1000 | 9 | 6 | 30 | 11 | - |
| 1001 – 1100 | 8 | 5 | 23 | 9 | 18 |
| 1101 – 1200 | 7 | 5 | 18 | 8 | 16 |
| 1201 – 1300 | 6 | 4 | 14 | 8 | 15 |
| 1301 – 1400 | 6 | 4 | 11 | 6 | 12 |
| 1400+ | 5 | 3 | 8 | 6 | 10 |

# Left-Turn Lane Warrants

| Peak Hour Traffic Volume on the Highway in Advancing Direction | Minimum Peak Hour Left-turn Traffic Volume | | | |
|---|---|---|---|---|
| | # of thru lanes per direction | | | |
| | 1 | | 2 (Undivided)* | |
| | < 45 MPH Posted Speed | ≥ 45 MPH Posted Speed | < 45 MPH Posted Speed | ≥ 45 MPH Posted Speed |
| ≤ 200 | 30 | 15 | - | - |
| 201 – 300 | 12 | 12 | 40 | 30 |
| 301 – 400 | 12 | 12 | 30 | 25 |
| 401 – 500 | 12 | 12 | 25 | 18 |
| 501 – 600 | 12 | 12 | 15 | 12 |
| 601 – 1000 | 12 | 12 | 10 | 8 |
| 1000+ | 12 | 8 | 10 | 8 |

*On non-freeway divided highways, left-turn or U-turn lanes should be provided at median breaks.

Volumes and traffic factors utilized should be based on data from ADOT's Multimodal Planning Division, or should be based on current traffic counts as approved by the Regional Traffic Engineer. For encroachment permits, analysis of the relevant through and turning traffic volumes should be completed in the design year as identified in ADOT Traffic Guidelines and Processes (TGP) 240. For new construction and major reconstruction, analysis should be performed based on data for the appropriate design year. Turn lane warrant studies should be reviewed and approved by the Regional Traffic Engineer. In cases where the State Highway section in question intersects a route under other jurisdiction, it is recommended that a turning movement analysis be performed on the intersecting route as well.

When it is determined that a turn lane is warranted, shoulder width should be provided as part of the turn lane design in accordance with the ADOT Roadway Design Guidelines, which should be used to determine the minimum continuous usable width of paved shoulder along the turn lanes. Turn lane design should also conform to the guidance in ADOT TGP430.

# 430 TURN LANE DESIGN

This section provides guidance for designing left and right turn lanes for at-grade highway intersections.

## 430.1 LEFT TURN LANES

In some instances it may be necessary to add the required widening to only one side of the roadway as shown in Figure 430-A. When widening only one side, the taper length is determined by the formula:

$$T = S \times W \qquad \text{for speeds of 45 mph or greater}$$

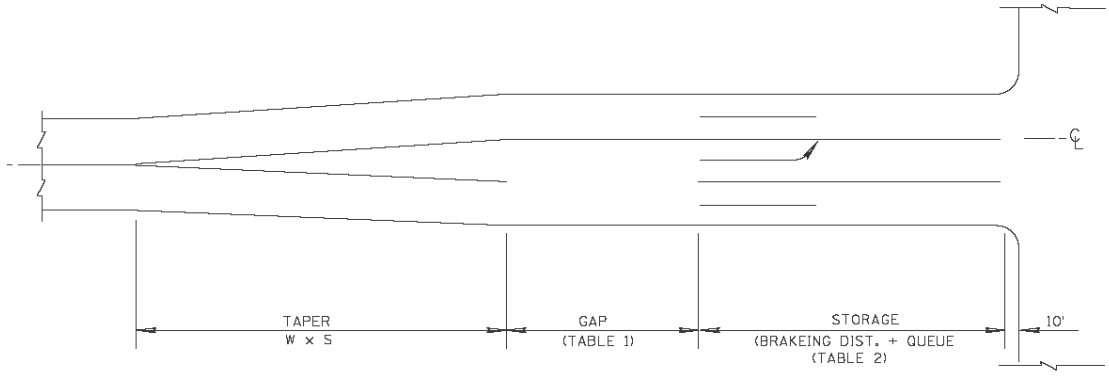
and by

$$T = \frac{S^2 \times W}{60} \qquad \text{for speeds under 45 mph}$$

where:

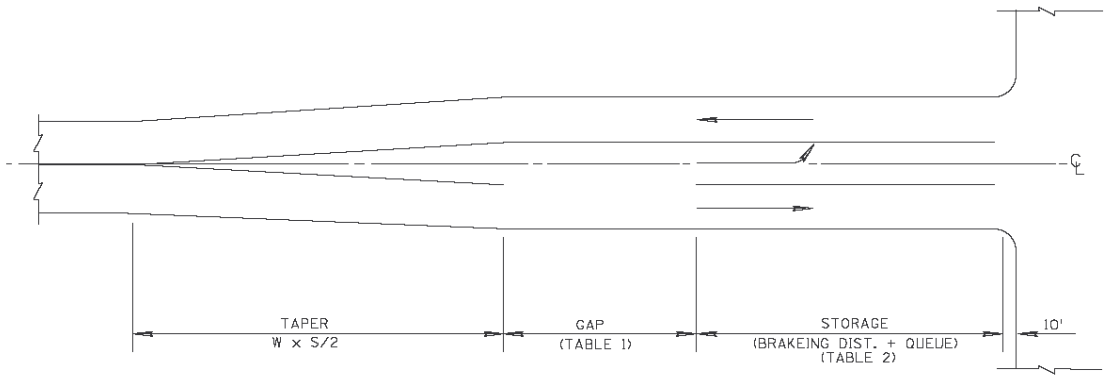
T = length of taper
W = width of the added lane
S = posted speed for existing roadways, or design speed for new or reconstructed roadways

**Figure 430-A. Left Turn Lane - Widening One Side Only**




The preferred way of creating a left turn lane is by widening the roadway on both sides equally as shown in Figure 430-B. This minimizes the amount of lateral shifting required for through traffic.
Taper lengths will be reduced by a proportional amount based on the proportion of widening on each side, e.g., by 1/2 for symmetrical widening. Similar adjustments must be made for other lane widths than the standard 12' illustrated.

**Figure 430-B. Left Turn Lane - Symmetrical Widening**




Example: *W = 12'* *Gap = 140'* *Storage = 415'* + 50' = 465'*
*S = 65 mph* *(From Table 430-1)*
*T = 12 x 65 = 390'* ** From Table 430-2*
*2*

*low ADT, minimum trucks*
*Total Length = 390' + 140' + 465' = 995'*

## Gap Length

Table 430-1 provides the length of the gap for left turn lanes. See Standard Drawing 4-M-1.03 for the turn lane standard.

**Table 430-1. Left Turn Lane Gap Lengths**

| POSTED or DESIGN SPEED (mph) | GAP (feet) |
|---|---|
| < 40 | 60 |
| 40 - 50 | 90 |
| > 50 | 140 |

## Storage Length

The storage length is a combination of the braking distance (Table 430-2) and a queue length dependent on the anticipated traffic control for the intersection and the traffic demand at the turn.

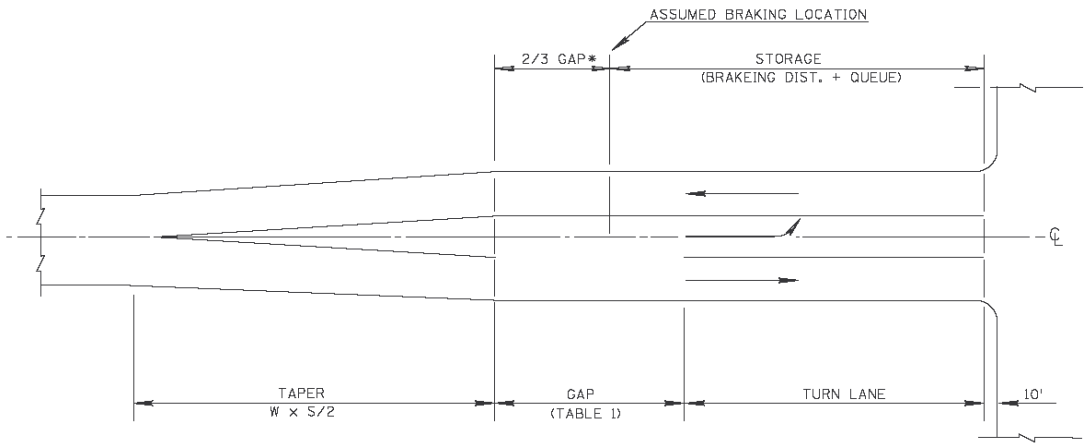
storage length = braking distance + queue length

## Table 430-2. Braking Distance

| POSTED or DESIGN SPEED (mph) | DESIRABLE | | MINIMUM | | |
|---|---|---|---|---|---|
| | BRAKING SPEED (mph) | BRAKING DISTANCE (feet) | ENTERING SPEED (mph) | BRAKING SPEED (mph) | BRAKING DISTANCE (feet) |
| 30 | 29 | 80 | 20 | 20 | 20 |
| 35 | 34 | 115 | 25 | 25 | 40 |
| 40 | 38 | 150 | 30 | 29 | 50 |
| 45 | 43 | 200 | 35 | 34 | 85 |
| 50 | 47 | 245 | 40 | 38 | 120 |
| 55 | 52 | 300 | 45 | 42 | 145 |
| 60 | 56 | 360 | 50 | 47 | 200 |
| 65 | 60 | 415 | 55 | 52 | 265 |
| 70 | 64 | 490 | 60 | 56 | 315 |
| 75 | 70 | 585 | 65 | 61 | 400 |

The "Desirable" braking distance shown in Table 430-2 is based on the assumption that a vehicle will have lost a few miles per hour through retardation by the vehicle's engine and drive train prior to braking and that braking will actually begin when the vehicle is fully into the turn lane. The "Minimum" braking distance shown is based on the assumption of: (a) a drop of 10 mph in the average speed of a vehicle by the time it begins to enter the opening or "gap" of the turn lane; (b) there will be a further reduction in speed through engine retardation while entering the turn lane; and (c) assumed braking will begin once the vehicle is 2/3 of the way into the turn lane (see Figure 430-C).

## FIGURE 430-C. Minimum Braking Distance




** 2/3 Gap:* *40' for < 40 mph*
*60' for 40 - 50 mph*
*95' for > 50 mph*

*Example:* *W = 12'* *** Gap = 140'* *Storage = 265' *** +50' = 315'*
*S = 65 mph* *2/3 Gap = 95'*
*T = 12 x 65 / 2 = 390'* *difference = 45'* **** From Table 430-2*

*** From Table 430-1*

*low ADT, minimum trucks*
*Total Length = 390' + 95' + 315' = 800'*
*Turn Lane Length = 315' – 45' = 270'*

The queue length is the portion of the storage length required to temporarily store turning traffic until conditions allow the turning maneuver to be completed in a safe manner. It is in addition to the length required for braking. The queue length is dependent on the anticipated traffic control for the intersection and the traffic demand at the turn. A traffic analysis may be needed to determine arrival rates and queue lengths.

- Signal Control - The queue length depends on the signal cycle length, the signal phasing arrangement, and the rate of arrivals and departures of left-turning vehicles. Allow 1.5 to 2 times the average number of vehicles that would queue per cycle for periodic heavy demand in traffic flow.
- Cross Road Stop Sign Control - The queue length is based on the number of turning vehicles likely to arrive in the average two minute period within the peak hour. The length should be adjusted for a lack of adequate gaps in opposing through traffic.

- All-Way Stop Sign Control - The queue length is based on the number of turning vehicles likely to arrive in the average two minute period within the peak hour. The length should be further adjusted for a lack of adequate gaps in both opposing through traffic and cross road traffic activity.

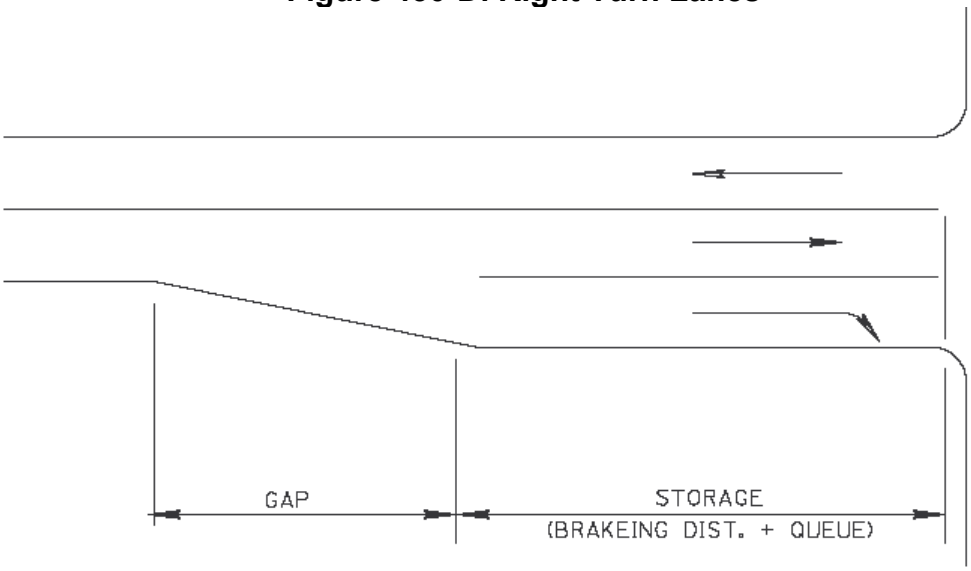
Each passenger vehicle and each truck are assumed to be 25 and 60 feet in length, respectively.

The minimum queue length for all traffic control situations should accommodate two passenger vehicles or one passenger vehicle and one truck when the truck percentage is greater than 10%, i.e., 50 foot and 85 foot minimum queue lengths, respectively.

Where a two-way left-turn lane is to be interrupted with a one-way left-turn lane, the two-way left-turn lane should end a sufficient distance in advance of the interruption to allow the placement of a minimum gap and necessary storage (see Standard Drawing M-2).

## 430.2 RIGHT TURN LANES

**Figure 430-D. Right Turn Lanes**




### Taper Length

Lengthy tapers are generally not required for right turn lanes, and similarly for left turn lanes where the median width is 30 feet or greater, since the lane may be simply added to the outside of the traveled way; however, a shorter taper equal in length to the gap (Table 430-1) is provided to transition the edge line from the normal pavement cross section to the edge of the turn lane.

## Gap Length

The gap for right turn lanes is the same as that for left turn lanes (see Table 430-1).

## Storage Length

The storage length for right turn lanes is the same as that for left turn lanes; however, when space available for a turn lane is limited and a yield condition or free-flowing right turn is provided, it may be appropriate to assume that braking continues, not to a stop as with left turns, but rather to the turning speed at the intersection radius return. Where traffic slows to 10 mph to turn right, 20 feet may be deducted from the right turn lane queue length.

## 430.3 SUMMARY

These guidelines assume that the intersection is not skewed, is on relatively flat grade, does not contain significant vertical or horizontal curves, has adequate sight distance, and has 12-foot wide through lanes.

The "Desirable" design is normally used for new construction or reconstruction of a roadway. The "Minimum" design is normally used for retrofits or minor intersection improvements.

It is recognized that design methodology must be somewhat flexible in meeting the highway users' needs and that circumstances vary from one location to another so that rigid application of rules or guidelines may not fit every situation. Engineering judgment must frequently be exercised in determining the end product. For instance, shorter turn lanes than the minimum established by this guideline may be acceptable if approved in writing by the Regional Traffic Engineer having jurisdiction.