# TRAFFIC IMPACT STUDY 

For

Fox Run Nature Center<br>El Paso County, Colorado

May 2023

Prepared for:
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## Traffic Engineer's Statement

The attached traffic report and supporting information were prepared under my responsible charge and they comport with the standard of care. So far as is consistent with the standard of care, said report was prepared in general conformance with the criteria established by the County for traffic reports.

Mas Lies
Fred Lantz, P.E. \#23410

05/03/2023
Date

## Developer's Statement

I, the Developer, have read and will comply with all commitments made on my behalf within this report.

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## I. Introduction

## Project Overview

This traffic impact study is provided as a planning document and addresses the capacity, geometric, and control requirements associated with the development entitled Fox Run Nature Center.

This proposed recreational development consists of a nature center. The development is located within the Fox Run Regional Park occupying the northwest corner of Stella Drive and Roller Coaster Road in El Paso County, Colorado.

## Study Area Boundaries

The study area to be examined in this analysis encompasses the Stella Drive intersections with Roller Coaster Road and the existing Fox Run Regional Park south access drive (referred to as Access A), the Baptist Road intersection with Tari Drive, and the Roller Coaster Road intersection with the park's east site access drive (referred to as Access B).

Figure 1 illustrates location of the site and study intersections.

## Site Description

Land for the development is currently occupied by Fox Run Regional Park and surrounded by open space and a mix of residential and recreational land uses.

The proposed development is understood to entail the new construction of an approximately 12,000 square foot nature center.

Existing access to the development is provided at the following locations: one full-movement access onto Stella Drive at Access A and one full-movement access onto Roller Coaster Road at Access B.

For purposes of this study, it is anticipated that development construction would be completed by end of Year 2025.

General site and access locations are shown on Figure 1.
A conceptual site plan, as prepared by TDG Architecture, is shown on Figure 2. This plan is provided for illustrative purposes only.

Traffic and Transportation Consultants
Not to Scale $\rangle$


## Existing and Committed Surface Transportation Network

Within the study area, Stella Drive is the primary roadway that will accommodate traffic to and from the proposed development. The secondary roadways include Roller Coaster Road, Baptist Road, and Tari Drive. A brief description of each roadway, based on the County's 2016 Major Transportation Corridors Plan (MTCP) ${ }^{1}$ and Engineering Criteria Manual (ECM) ${ }^{2}$, is provided below:

Stella Drive is an east-west collector roadway having two through lanes (one lane in each direction) with shared turn lanes at the intersections within the study area. Stella Drive provides a posted speed limit of 30 MPH. Stella Drive ends at Roller Coaster Road and continues east as Evergreen Road.

Roller Coaster Road is a north-south collector roadway having two through lanes (one lane in each direction) with shared turn lanes at the intersection within the study area. Roller Coaster Road provides a posted speed limit of 35 MPH.

Baptist Road is generally an east-west principal arterial roadway having two through lanes (one lane in each direction) with shared turn lanes at the intersection within the study area. Baptist Road provides a posted speed limit of 40 MPH. Baptist Road ends at Roller Coaster Road and continues east as Hodgen Road.

Tari Drive is a north-south roadway having two through lanes (one lane in each direction) with shared turn lanes at the intersection within the study area. Tari Drive is unclassified in the County's MTCP. However, per Section 2.3.2, Table 2-5 of the County's ECM and the roadway's estimated right-of-way (ROW) width, Tari Drive is assumed to be classified as a local roadway with a posted speed limit of 20 MPH.

All study intersections operate under a stop-controlled condition. A stop-controlled intersection is defined as a roadway intersection where vehicle rights-of-way are controlled by one or more "STOP" signs.

No regional or specific improvements for the above-described roadways are known to be planned or committed at this time. The study area roadways appear to be built to their ultimate cross-sections.

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## II. Existing Traffic Conditions

Morning (AM) and afternoon (PM) peak hour traffic counts were collected at the Stella Drive intersections with Roller Coaster Road and the existing Fox Run Regional Park south access drive (Access A), the Baptist Road intersection with Tari Drive, and the Roller Coaster Road intersection with the park's east site access drive (Access B). Average daily traffic (ADT) volumes were collected over a 24 -hour period on the existing south site access drive (Access A). Counts were collected on Wednesday, April 5, 2023, with AM peak hour counts being collected during the period of 7:00 a.m. to 9:00 a.m. and PM peak hour counts being collected during the period of 4:00 p.m. to 6:00 p.m.

Existing volumes and intersection geometry are shown on Figure 3. Traffic count data is included for reference in Appendix A.
K



Sun Hills Drive
Tari Drive

FOX RUN NATURE CENTER
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## Peak Hour Intersection Levels of Service - Existing Traffic

The Unsignalized Intersection Analysis technique, as published in the Highway Capacity Manual (HCM), $6^{\text {th }}$ Edition, by the Transportation Research Board and as incorporated into the SYNCHRO computer program, was used to analyze the study intersections for existing and future traffic conditions. This nationally accepted technique allows for the determination of intersection level of service (LOS) based on the congestion and delay of each traffic movement.

Level of service is a method of measurement used by transportation professionals to quantify a driver's perception of travel conditions that include travel time, number of stops, and total amount of stopped delay experienced on a roadway network. The HCM categorizes level of service into a range from "A" which indicates little, if any, vehicle delay, to "F" which indicates a level of operation considered unacceptable to most drivers. These levels of service grades with brief descriptions of the operating condition, for unsignalized and signalized intersections, are included for reference in Appendix B and have been used throughout this study.

The level of service analyses results for existing conditions are summarized in Table 1.
Intersection capacity worksheets developed for this study are provided in Appendix C.

Table 1 - Intersection Capacity Analysis Summary - Existing Traffic

| INTERSECTION | LEVEL OF SERVICE |  |
| :--- | :---: | :---: |
| LANE GROUPS | AM PEAK HOUR | PM PEAK HOUR |
| Baptist Road / Tari Drive (Stop-Controlled) |  |  |
| Westbound Left and Through | A | A |
| Northbound Left and Right | B | C |
| Stella Drive / Roller Coaster Road (Stop-Controlled) | A |  |
| Eastbound Left, Through, and Right | A | B |
| Westbound Left, Through, and Right | A | B |
| Northbound Left, Through, and Right | A | A |
| Southbound Left, Through, and Right | A | A |
| Access A / Stella Drive (Stop-Controlled) | A | A |
| Eastbound Left and Through | A |  |
| Southbound Left and Right | A | A |
| Access B / Roller Coaster Road (Stop-Controlled) | A | A |
| Eastbound Left and Right |  | A |
| Northbound Left and Through |  |  |

Key: Stop-Controlled Intersection: Level of Service

## Existing Traffic Analysis Results

Under existing conditions, operational analysis shows that the stop-controlled intersection of Baptist Road with Tari Drive has turn movement operations at or better than LOS B during the morning peak traffic hour and LOS C or better during the afternoon peak traffic hour.

The stop-controlled intersection of Stella Drive with Roller Coaster Road has turn movement operations at LOS A during the AM peak traffic hour and LOS B or better during the PM peak traffic hour.

The stop-controlled intersection of Access A with Stella Drive has turn movement operations at LOS A during both peak traffic hours.

The stop-controlled intersection of Access B with Roller Coaster Road has turn movement operations at LOS A during both peak traffic hours.

## III. Future Traffic Conditions Without Proposed Development

Background traffic is the traffic projected to be on area roadways without consideration of the proposed development. Background traffic includes traffic generated by development of vacant parcels in the area.

To account for projected increases in background traffic for Year 2025, a compounded annual growth rate was determined using historical traffic data for the surrounding area provided by the Colorado Department of Transportation's (CDOT) Online Transportation Information System (OTIS), which anticipates a 20-year growth rate between two and three percent. Therefore, in order to provide for a conservative analysis, a growth rate of three percent was applied to existing traffic volumes. This annual growth rate provides for a conservative analysis and is assumed to account for regional growth projections and the level of in-fill development expected within the area.

Pursuant to the non-committed area roadway improvements discussed in Section I, Year 2025 background traffic conditions assume no roadway improvements to accommodate regional transportation demands. This assumption provides for a conservative analysis.

Projected background traffic volumes and intersection geometry for Year 2025 are shown on Figure 4.

## Peak Hour Intersection Levels of Service - Background Traffic

As with existing traffic conditions, the operations of study intersections were analyzed under background conditions, without the proposed development, using the SYNCHRO computer program.

Background traffic level of service analysis results for Year 2025 are listed in Table 2.
Definitions of levels of service are given in Appendix B. Intersection capacity worksheets are provided in Appendix C.

## Table 2 - Intersection Capacity Analysis Summary - Background Traffic - Year 2025

| INTERSECTION | LEVEL OF SERVICE |  |
| :--- | :---: | :---: |
| LANE GROUPS | AM PEAK HOUR | PM PEAK HOUR |
| Baptist Road / Tari Drive (Stop-Controlled) |  |  |
| Westbound Left and Through | A | A |
| Northbound Left and Right | B | C |
| Stella Drive / Roller Coaster Road (Stop-Controlled) | A |  |
| Eastbound Left, Through, and Right | A | B |
| Westbound Left, Through, and Right | A | B |
| Northbound Left, Through, and Right | A | A |
| Southbound Left, Through, and Right | A | A |
| Access A / Stella Drive (Stop-Controlled) | A | A |
| Eastbound Left and Through | A | A |
| Southbound Left and Right | A | A |
| Access B / Roller Coaster Road (Stop-Controlled) | A | A |
| Eastbound Left and Right |  |  |
| Northbound Left and Through |  |  |

Key: Stop-Controlled Intersection: Level of Service

## Background Traffic Analysis Results - Year 2025

Year 2025 background traffic analysis indicates that the stop-controlled intersection of Baptist Road with Tari Drive has turn movement operations at or better than LOS B during the morning peak traffic hour and LOS C or better during the afternoon peak traffic hour.

The stop-controlled intersection of Stella Drive with Roller Coaster Road projects turn movement operations at LOS A during the AM peak traffic hour and LOS B or better during the PM peak traffic hour.

The stop-controlled intersection of Access A with Stella Drive expects turn movement operations at LOS A during both peak traffic hours.

The stop-controlled intersection of Access B with Roller Coaster Road projects turn movement operations at LOS A during both peak traffic hours.

## IV. Proposed Project Traffic

## Trip Generation

Standard traffic generation characteristics compiled by the Institute of Transportation Engineers (ITE) in their report entitled Trip Generation Manual, $11^{\text {th }}$ Edition, are generally applied to the proposed land use in order to estimate average daily traffic (ADT), AM Peak Hour, and PM Peak Hour vehicle trips. A vehicle trip is defined as a one-way vehicle movement from a point of origin to a point of destination.

However, ITE's Trip Generation Manual does not provide traffic generation information for this particular land use or similar land use. As such, average daily and weekday peak hour trip information was derived from data received from the County which represents yearly attendance at two other nature center land uses in the County.

Average daily traffic for the proposed nature center land use was calculated using the average threeyear attendance for the two referenced nature centers. Peak hour volumes were derived from standard relationships of ADT volumes versus peak hour volumes. Additionally, in reference to Chapter 3 of the HCM, a seasonal adjustment factor of 1.13 was then applied to site-generated trips in order to account for the higher traffic volumes which are expected to occur during the summer months.

Table 3 illustrates projected ADT, AM Peak Hour, and PM Peak Hour traffic volumes likely generated by the proposed development upon build-out.

Table 3 - Trip Generation Summary

| $\begin{gathered} \text { ITE } \\ \text { CODE } \end{gathered}$ | LAND USE | SIZE | TOTAL TRIPS GENERATED |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | $\begin{gathered} 24 \\ \text { HOUR } \end{gathered}$ | AM PEAK HOUR |  |  | PM PEAK HOUR |  |  |
|  |  |  |  | ENTER | EXIT | TOTAL | ENTER | EXIT | TOTAL |
|  | Nature Center | 12.0 KSF | 56 | 3 | 2 | 5 | 3 | 4 | 7 |
|  |  | Total: | 56 | 3 | 2 | 5 | 3 | 4 | 7 |

Key: $\quad$ KSF = Thousand Square Feet Gross Floor Area.
Note: All data and calculations above are subject to being rounded to nearest value.

Upon build-out, Table 3 illustrates that the proposed development has the potential to generate approximately 56 daily vehicle trips during peak periods of tourism, with 5 of those occurring during the morning peak hour and 7 during the afternoon peak hour.

## Adjustments to Trip Generation Rates

A development of this type is not likely to attract trips from within area land uses nor pass-by or diverted link trips from the adjacent roadway system, therefore no trip reduction was taken in this analysis.

## Trip Distribution

The overall directional distribution of site-generated traffic was determined based on the location of development site within the County, proposed and existing area land uses, allowed turning movements, available roadway network, and in reference to historical traffic count data provided by CDOT's Traffic Count Database System (TCDS)³.

Overall trip distribution patterns for the development are shown on Figure 5.

## Trip Assignment

Traffic assignment is how generated and distributed vehicle trips are expected to be loaded onto the available roadway network.

Applying trip distribution patterns to site-generated traffic provides the overall site-generated trip assignments shown on Figure 5.

[^1]$[$

$\xrightarrow[\longleftrightarrow]{\text { Roller Coaster Road }}$ ¢50) 16

## V. Future Traffic Conditions With Proposed Developments

Total traffic is the traffic projected to be on area roadways with consideration of the proposed development. Total traffic includes background traffic projections for Year 2025 with consideration of site-generated traffic. For analysis purposes, it was assumed that development construction would be completed by end of Year 2025.

Pursuant to area roadway improvement discussions provided in Section III, Year 2025 total traffic conditions assume no roadway improvements to accommodate regional transportation demands. Roadway improvements associated with site development are expected to be limited to site access and frontage as required by the governing agency.

Projected Year 2025 total traffic volumes and intersection geometry are shown in Figure 6.


## VI. Project Impacts

The analyses and procedures described in this study were performed in accordance with the latest HCM and are based upon the worst-case conditions that occur during a typical weekday upon buildout of site development and analyzed land uses. Therefore, study intersections are likely to operate with traffic conditions better than those described within this study, which represent the peak hours of weekday operations only.

## Peak Hour Intersection Levels of Service - Total Traffic

As with background traffic, the operations of the study intersections were analyzed under projected total traffic conditions using the SYNCHRO computer program. Total traffic level of service analysis results for Year 2025 are summarized in Table 4.

Definitions of levels of service are given in Appendix B. Intersection capacity worksheets are provided in Appendix C.

Table 4 - Intersection Capacity Analysis Summary - Total Traffic - Year 2025

| INTERSECTION | LEVEL OF SERVICE |  |
| :--- | :---: | :---: |
| LANE GROUPS | AM PEAK HOUR | PM PEAK HOUR |
| Baptist Road / Tari Drive (Stop-Controlled) |  |  |
| Westbound Left and Through | A | A |
| Northbound Left and Right | B | C |
| Stella Drive / Roller Coaster Road (Stop-Controlled) | A | B |
| Eastbound Left, Through, and Right | B | B |
| Westbound Left, Through, and Right | A | A |
| Northbound Left, Through, and Right | A | A |
| Southbound Left, Through, and Right | A | A |
| Access A / Stella Drive (Stop-Controlled) | A | A |
| Eastbound Left and Through | A | A |
| Southbound Left and Right | A | A |
| Access B / Roller Coaster Road (Stop-Controlled) |  |  |
| Eastbound Left and Right |  |  |
| Northbound Left and Through |  |  |

Key: Stop-Controlled Intersection: Level of Service

## Total Traffic Analysis Results Upon Development Build-Out

Table 4 illustrates how, by Year 2025 and upon development build-out, the stop-controlled intersection of Baptist Road with Tari Drive continues to project turn movement operations at or better than LOS B during the morning peak traffic hour and LOS C or better during the afternoon peak traffic hour.

The stop-controlled intersection of Stella Drive with Roller Coaster Road projects turn movement operations at LOS B or better during both peak traffic hours.

The stop-controlled intersection of Access A with Stella Drive expects turn movement operations at LOS A during both peak traffic hours.

The stop-controlled intersection of Access B with Roller Coaster Road projects turn movement operations at LOS A during both peak traffic hours.

Compared to the background traffic analysis, the traffic generated by the proposed development is not expected to significantly change the operations of the study intersections. These intersection operations are similar to background conditions.

## Parking Assessment

An analysis on parking requirements for the proposed Fox Run Nature Center development was considered against requirements set forth by the County's Land Development Code ${ }^{4}$.

The County's current zoning map shows the development site within zoning district RR-5 (Residential Rural ( 5 acres)). However, upon further review, it was noted that the County's Land Development Code does not state a minimum parking requirement for a public park or similar land use.

It is unknown if the County has parking concerns related to the proposed development. However, based on the land use proposed, parking is not expected to be an issue for the proposed nature center development.

[^2]
## VII. Conclusion

This traffic impact study addressed the capacity, geometric, and control requirements associated with the development entitled Fox Run Nature Center. This proposed recreational development consists of a nature center. The development is located within the Fox Run Regional Park occupying the northwest corner of Stella Drive and Roller Coaster Road in El Paso County, Colorado.

The study area examined in this analysis encompassed the Stella Drive intersections with Roller Coaster Road and the existing Fox Run Regional Park south access drive, the Baptist Road intersection with Tari Drive, and the Roller Coaster Road intersection with the park's east site access drive.

Analysis was conducted for critical AM Peak Hour and PM Peak Hour traffic operations for existing traffic conditions, Year 2025 background traffic conditions, and Year 2025 total traffic conditions.

Analysis of existing traffic conditions indicates that the stop-controlled intersection of Baptist Road with Tari Drive has turn movement operations at or better than LOS B during the morning peak traffic hour and LOS C or better during the afternoon peak traffic hour. The stop-controlled intersection of Stella Drive with Roller Coaster Road has turn movement operations at LOS A during the AM peak traffic hour and LOS B or better during the PM peak traffic hour. The stop-controlled intersections of Access A and Access B with Stella Drive and Roller Coaster Road has turn movement operations at LOS A during both peak traffic hours.

Without the proposed development, Year 2025 background operational analysis shows that the stopcontrolled intersection of Baptist Road with Tari Drive has turn movement operations at or better than LOS B during the morning peak traffic hour and LOS C or better during the afternoon peak traffic hour. The stop-controlled intersection of Stella Drive with Roller Coaster Road projects turn movement operations at LOS A during the AM peak traffic hour and LOS B or better during the PM peak traffic hour. The stop-controlled intersections of Access A and Access B with Stella Drive and Roller Coaster Road expect turn movement operations at LOS A during both peak traffic hours.

Analysis of future traffic conditions indicates that the addition of site-generated traffic is expected to create no negative impact to traffic operations for the existing and surrounding roadway system upon roadway and intersection control improvements assumed within this analysis. With all conservative assumptions defined in this analysis, the study intersections are projected to operate at future levels of service comparable to Year 2025 background traffic conditions. Existing site accesses have operations at LOS A during peak traffic periods and upon build-out.

APPENDIX A

Traffic Count Data

(303) 216-2439 www.alltrafficdata.net

Location: 1 ROLLER COASTER ROAD \& STELLA DRIVE AM
Date: Wednesday, April 5, 2023
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: $\quad 08: 15$ AM - 08:30 AM


Note: Total study counts contained in parentheses.
Traffic Counts - Motorized Vehicles

| Interval | STELLA DRIVE Eastbound |  |  |  | STELLA DRIVE <br> Westbound |  |  |  | ROLLER COASTER ROAD Northbound |  |  |  | ROLLER COASTER ROAD Southbound |  |  |  | Total | Rolling Hour |  | Pedestrian Crossings |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Start Time | U-Turn | Left | Thru | Right | U-Turn | eft | Thru |  | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right |  |  |  | West | East | South |  |
| 7:00 AM | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 1 | 7 | 0 | 0 | 1 | 15 | 0 | 2 |  | 122 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 0 | 0 | 1 | 12 | 0 | 25 |  | 127 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 7 | 0 | 4 | 0 | 1 | 0 | 0 | 4 | 1 | 0 | 1 | 20 | 0 | 38 |  | 146 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 0 | 0 | 0 | 19 | 0 | 32 |  | 152 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 1 | 0 | 4 | 1 | 0 | 2 | 0 | 0 | 2 | 8 | 1 | 0 | 0 | 13 | 0 | 3 |  | 164 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 3 | 2 | 1 | 1 | 0 | 0 | 1 | 11 | 2 | 0 | 0 | 22 | 1 |  |  |  | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 1 | 0 | 4 | 1 | 0 | 2 | 0 | 0 | 4 | 9 | 0 | 0 | 1 | 19 | 3 | 4 |  |  | 0 | 0 | 0 | 0 |
| 8:45 AM | 1 | 2 | 0 | 4 | 0 | 1 | 0 | 1 | 1 | 0 | 10 | 0 | 0 | 0 | 24 | 0 | 4 |  |  | 0 | 0 | 0 | 0 |
| Count Total | 1 | 5 | 1 | 28 | 4 | 8 | 5 | 2 | 1 | 12 | 63 | 4 | 0 | 4 | 144 | 4 | 28 |  |  | 0 | 0 | 0 | 0 |
| Peak Hour | 1 | 4 | 0 | 15 | 4 | 2 | 5 | 1 | 1 | 7 | 38 | 3 | 0 | 1 | 78 | 4 | 4 | 64 |  | 0 | 0 | 0 | 0 |

(303) 216-2439 www.alltrafficdata.net

Location: 1 ROLLER COASTER ROAD \& STELLA DRIVE PM
Date: Wednesday, April 5, 2023
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM


Peak Hour - Bicycles


Peak Hour - Pedestrians


Note: Total study counts contained in parentheses.
Traffic Counts - Motorized Vehicles

| Interval | STELLA DRIVE Eastbound |  |  |  | STELLA DRIVE <br> Westbound |  |  |  | ROLLER COASTER ROAD <br> Northbound |  |  |  | ROLLER COASTER ROAD Southbound |  |  |  | Total | Rolling Hour |  | Pedestrian Crossings |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Start Time | U-Turn | Left | Thru | Right | U-Turn | eft | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right |  |  |  | West | East | South |  |
| 4:00 PM | 0 | 1 | 2 | 8 | 0 | 1 | 0 | 2 | 0 | 8 | 32 | 2 | 0 | 3 | 28 | 2 | 89 |  | 328 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 2 | 1 | 10 | 0 | 1 | 0 | 2 | 0 | 6 | 26 | 2 | 0 | 0 | 27 | 1 | 78 |  | 327 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 2 | 1 | 5 | 0 | 1 | 0 | 1 | 0 | 5 | 28 | 2 | 0 | 0 | 30 | 2 | 77 |  | 332 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 12 | 35 | 2 | 0 | 1 | 29 | 1 | 84 |  | 323 | 0 | 0 | 0 | 1 |
| 5:00 PM | 0 | 6 | 2 | 4 | 0 | 1 | 0 | 1 | 0 | 6 | 24 | 2 | 0 | 1 | 37 | 4 | 88 |  | 303 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 2 | 2 | 10 | 0 | 0 | 0 | 0 | 0 | 12 | 25 | 1 | 0 | 2 | 26 | 3 | 83 |  |  | 0 | 0 | 0 | 1 |
| 5:30 PM | 0 | 2 | 0 | 8 | 0 | 0 | 1 | 0 | 0 | 5 | 28 | 0 | 0 | 0 | 23 | 1 | 68 |  |  | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 3 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 8 | 29 | 2 | 0 | 0 | 17 | 1 | 64 |  |  | 0 | 0 | 0 | 0 |
| Count Total | 0 | 18 | 9 | 52 | 0 | 4 | 1 | 6 | 0 | 62 | 227 | 13 | 0 | 7 | 217 | 15 | 63 |  |  | 0 | 0 | 0 | 2 |
| Peak Hour | 0 | 10 | 5 | 23 | 0 | 2 | 0 | 2 | 0 | 35 | 112 | 7 | 0 | 4 | 122 | 10 |  | 32 |  | 0 | 0 | 0 | 2 |

(303) 216-2439 www.alltrafficdata.net

Location: 2 SITE ACCESS \& STELLA DRIVE AM
Date: Wednesday, April 5, 2023
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:30 AM - 08:45 AM


Note: Total study counts contained in parentheses.
Traffic Counts - Motorized Vehicles

| Interval | STELLA DRIVE <br> Eastbound |  |  |  | STELLA DRIVE <br> Westbound |  |  |  | SITE ACCESS Northbound |  |  |  | SITE ACCESS <br> Southbound |  |  |  | Total |  | Rolling Hour | Pedestrian Crossings |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Start Time | U-Turn | Left | Thru | Right | U-Turn | eft | Thru |  | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right |  |  | West | East | South |  |
| 7:00 AM | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 4 |  | 23 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 1 | 2 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 6 | 30 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 8 | 27 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 5 | 35 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 1 | 4 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 |  | 11 | 39 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 3 |  | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 1 | 5 | 0 | 1 | 0 | 7 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |  | 16 |  | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 8 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |  | 9 |  | 0 | 0 | 0 | 0 |
| Count Total | 0 | 3 | 33 | 0 | 1 | 0 | 19 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 | 62 |  | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 2 | 18 | 0 | 1 | 0 | 13 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 39 | 39 | 0 | 0 | 0 | 0 |

(303) 216-2439 www.alltrafficdata.net

Location: 2 SITE ACCESS \& STELLA DRIVE PM
Date: Wednesday, April 5, 2023
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM


Peak Hour - Bicycles


Peak Hour - Pedestrians


Note: Total study counts contained in parentheses.
Traffic Counts - Motorized Vehicles

(303) 216-2439 www.alltrafficdata.net

Location: 3 TARI DRIVE \& BAPTIST ROAD AM
Date: Wednesday, April 5, 2023
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:45 AM - 09:00 AM


Note: Total study counts contained in parentheses.
Traffic Counts - Motorized Vehicles

| Interval | BAPTIST ROAD Eastbound |  |  |  | BAPTIST ROAD <br> Westbound |  |  |  | TARI DRIVE Northbound |  |  |  |  | TARI DRIVE Southbound |  |  |  |  | Total | Rolling Hour |  | Pedestrian Crossings |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Start Time | U-Turn | Left | Thru | Right | U-Turn | ft | Thru |  | U-Turn | Left | Thru | Right |  | U-Turn | Left | Thru |  | Right |  |  |  | West | East | South |  |
| 7:00 AM | 0 | 0 | 15 | 0 | 0 | 0 | 34 | 0 | 0 | 8 | 0 | 0 |  | 0 | 0 | 0 |  | 0 | 5 |  | 248 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 13 | 3 | 0 | 0 | 26 | 0 | 0 | 9 | 0 | 0 |  | 0 | 0 | 0 |  | 0 | 5 |  | 258 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 17 | 3 | 0 | 0 | 42 | 0 | 0 | 13 | 0 | 1 |  | 0 | 0 | 0 |  | 0 | 76 |  | 276 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 21 | 1 | 0 | 1 | 35 | 0 | 0 | 5 | 0 | 1 |  | 0 | 0 | 0 |  | 0 | 6 |  | 276 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 15 | 4 | 0 | 1 | 43 | 0 | 0 | 4 | 0 | 0 |  | 0 | 0 | 0 |  | 0 | 6 |  | 291 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 24 | 6 | 0 | 0 | 31 | 0 | 0 | 8 | 0 | 0 |  | 0 | 0 | 0 |  | 0 | 69 |  |  | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 24 | 5 | 0 | 1 | 37 | 0 | 0 | 9 | 0 | 0 |  | 0 | 0 | 0 |  | 0 | 76 |  |  | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 36 | 1 | 0 | 0 | 30 | 0 | 0 | 11 | 0 | 1 |  | 0 | 0 | 0 | 0 | 0 | 79 |  |  | 0 | 0 | 0 | 0 |
| Count Total | 0 | 0 | 165 | 23 | 0 | 3 | 278 | 0 | 0 | 67 | 0 | 3 |  | 0 | 0 | 0 | 0 | 0 | 53 |  |  | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 0 | 99 | 16 | 0 | 2 | 141 | 0 | 0 | 32 | 0 | 1 |  | 0 | 0 | 0 | 0 | 0 | ) 2 | 291 |  | 0 | 0 | 0 | 0 |

(303) 216-2439 www.alltrafficdata.net

Location: 3 TARI DRIVE \& BAPTIST ROAD PM
Date: Wednesday, April 5, 2023
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM


Note: Total study counts contained in parentheses.
Traffic Counts - Motorized Vehicles

| Interval | BAPTIST ROAD <br> Eastbound |  |  |  | BAPTIST ROAD <br> Westbound |  |  |  | TARI DRIVE Northbound |  |  |  | TARI DRIVE Southbound |  |  |  |  | Total | Rolling Hour | Pedestrian Crossings |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Start Time | U-Turn | Left | Thru | Right | U-Turn | eft | Thru R |  | U-Turn | Left | Thru | Right | U-Turn | Left |  |  | Right |  |  | West | East | South |  |
| 4:00 PM | 0 | 0 | 89 | 23 | 0 | 1 | 70 | 0 | 0 | 8 | 0 | 2 | 0 | 0 |  | 0 | 0 | 193 | 672 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 0 | 67 | 22 | 0 | 0 | 64 | 0 | 0 | 9 | 0 | 1 | 0 | 0 |  | 0 | 0 | 163 | 677 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 80 | 18 | 0 | 1 | 54 | 0 | 0 | 9 | 0 | 1 | 0 | 0 |  | 0 | 0 | 163 | 693 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 0 | 64 | 22 | 0 | 0 | 56 | 0 | 0 | 11 | 0 | 0 | 0 | 0 |  | 0 | 0 | 153 | 664 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 0 | 106 | 16 | 0 | 2 | 61 | 0 | 0 | 13 | 0 | 0 | 0 | 0 |  | 0 | 0 | 198 | 659 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 0 | 89 | 18 | 0 | 1 | 54 | 0 | 0 | 14 | 0 | 3 | 0 | 0 |  | 0 | 0 | 179 |  | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 63 | 15 | 0 | 1 | 43 | 0 | 0 | 10 | 0 | 2 | 0 | 0 |  | 0 | 0 | 134 |  | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 69 | 12 | 0 | 3 | 45 | 0 | 0 | 18 | 0 | 1 | 0 | 0 |  | 0 | 0 | 148 |  | 0 | 0 | 0 | 0 |
| Count Total | 0 | 0 | 627 | 146 | 0 | 9 | 447 | 0 | 0 | 92 | 0 | 10 | 0 | 0 |  | 0 | 0 | 1,331 |  | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 0 | 339 | 74 | 0 | 4 | 225 | 0 | 0 | 47 | 0 | 4 | 0 | 0 | 0 | 0 |  | ) 69 | 93 | 0 | 0 | 0 | 0 |

(303) 216-2439 www.alltrafficdata.net

Location: 4 ROLLER COASTER RD \& SITE ACCESS AM
Date: Wednesday, April 5, 2023
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: $\quad 08: 15$ AM - 08:30 AM


Note: Total study counts contained in parentheses.
Traffic Counts - Motorized Vehicles

| Interval Start Time | SITE ACCESS Eastbound |  |  |  | SITE ACCESS Westbound |  |  |  | ROLLER COASTER RD <br> Northbound |  |  |  | ROLLER COASTER RD <br> Southbound |  |  |  | Total | Rolling Hour |  | Pedestrian Crossings |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | U-Turn | Left | Thru | Right | U-Turn |  | Thru R |  | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right |  |  |  | West | East | South |  |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 16 | 1 | 24 |  | 98 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 13 | 0 | 20 |  | 97 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 21 | 0 | 28 |  | 114 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 19 | 0 | 26 |  | 117 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 13 | 1 | 23 |  | 128 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 25 | 1 | 37 |  |  | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 21 | 0 | 31 |  |  | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 24 | 0 | 37 |  |  | 0 | 0 | 0 | 0 |
| Count Total | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 70 | 0 | 0 | 0 | 152 | 3 | 22 |  |  | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 0 | 0 | 0 | 83 | 2 | 2 | 128 |  | 0 | 0 | 0 | 0 |

Location: 4 ROLLER COASTER RD \& SITE ACCESS PM
Date: Wednesday, April 5, 2023
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - Bicycles


Peak Hour - Pedestrians


Note: Total study counts contained in parentheses.
Traffic Counts - Motorized Vehicles

| Interval | SITE ACCESS Eastbound |  |  |  | SITE ACCESS Westbound |  |  |  | ROLLER COASTER RD <br> Northbound |  |  |  | ROLLER COASTER RD <br> Southbound |  |  |  | Total | Rolling Hour |  | Pedestrian Crossings |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Start Time | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right |  |  |  | West | East | South |  |
| 4:00 PM | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 34 | 0 | 0 | 0 | 34 | 2 | 7 |  | 262 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 28 | 0 | 0 | 0 | 25 | 1 | 5 |  | 262 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 0 | 0 | 30 | 0 | 6 |  | 263 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 32 | 1 | 67 |  | 256 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 39 | 0 | 7 |  | 238 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 24 | 0 | 0 | 0 | 32 | 0 | 5 |  |  | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 0 | 0 | 22 | 2 | 5 |  |  | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 0 | 0 | 0 | 18 | 0 | 4 |  |  | 0 | 0 | 0 | 0 |
| Count Total | 0 | 5 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 3 | 247 | 0 | 0 | 0 | 232 | 6 | 50 | 0 |  | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 2 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 122 | 0 | 0 | 0 | 0133 | 1 | 1 | 263 |  | 0 | 0 | 0 | 0 |

All Traffic Data Services

| Time | NB | SB | Total |
| :---: | :---: | :---: | :---: |
| 4/5/2023 | 0 | 0 | 0 |
| 4/5/2023 12:15:00 AM | 0 | 0 | 0 |
| 4/5/2023 12:30:00 AM | 0 | 0 | 0 |
| 4/5/2023 12:45:00 AM | 0 | 0 | 0 |
| 4/5/2023 1:00:00 AM | 0 | 0 | 0 |
| 4/5/2023 1:15:00 AM | 0 | 0 | 0 |
| 4/5/2023 1:30:00 AM | 0 | 0 | 0 |
| 4/5/2023 1:45:00 AM | 0 | 0 | 0 |
| 4/5/2023 2:00:00 AM | 0 | 0 | 0 |
| 4/5/2023 2:15:00 AM | 0 | 0 | 0 |
| 4/5/2023 2:30:00 AM | 0 | 0 | 0 |
| 4/5/2023 2:45:00 AM | 0 | 0 | 0 |
| 4/5/2023 3:00:00 AM | 0 | 0 | 0 |
| 4/5/2023 3:15:00 AM | 0 | 0 | 0 |
| 4/5/2023 3:30:00 AM | 0 | 0 | 0 |
| 4/5/2023 3:45:00 AM | 0 | 0 | 0 |
| 4/5/2023 4:00:00 AM | 0 | 0 | 0 |
| 4/5/2023 4:15:00 AM | 0 | 0 | 0 |
| 4/5/2023 4:30:00 AM | 0 | 0 | 0 |
| 4/5/2023 4:45:00 AM | 0 | 0 | 0 |
| 4/5/2023 5:00:00 AM | 0 | 0 | 0 |
| 4/5/2023 5:15:00 AM | 0 | 0 | 0 |
| 4/5/2023 5:30:00 AM | 0 | 0 | 0 |
| 4/5/2023 5:45:00 AM | 0 | 0 | 0 |
| 4/5/2023 6:00:00 AM | 2 | 0 | 2 |
| 4/5/2023 6:15:00 AM | 0 | 0 | 0 |
| 4/5/2023 6:30:00 AM | 0 | 2 | 2 |
| 4/5/2023 6:45:00 AM | 0 | 0 | 0 |
| 4/5/2023 7:00:00 AM | 0 | 0 | 0 |
| 4/5/2023 7:15:00 AM | 1 | 0 | 1 |
| 4/5/2023 7:30:00 AM | 0 | 0 | 0 |
| 4/5/2023 7:45:00 AM | 1 | 0 | 1 |
| 4/5/2023 8:00:00 AM | 1 | 3 | 4 |
| 4/5/2023 8:15:00 AM | 0 | 0 | 0 |
| 4/5/2023 8:30:00 AM | 2 | 1 | 3 |
| 4/5/2023 8:45:00 AM | 0 | 0 | 0 |
| 4/5/2023 9:00:00 AM | 1 | 0 | 1 |
| 4/5/2023 9:15:00 AM | 3 | 2 | 5 |
| 4/5/2023 9:30:00 AM | 3 | 1 | 4 |
| 4/5/2023 9:45:00 AM | 3 | 3 | 6 |
| 4/5/2023 10:00:00 AM | 2 | 3 | 5 |
| 4/5/2023 10:15:00 AM | 2 | 2 | 4 |
| 4/5/2023 10:30:00 AM | 3 | 3 | 6 |
| 4/5/2023 10:45:00 AM | 0 | 3 | 3 |
| 4/5/2023 11:00:00 AM | 3 | 2 | 5 |
| 4/5/2023 11:15:00 AM | 3 | 1 | 4 |
| 4/5/2023 11:30:00 AM | 2 | 3 | 5 |
| 4/5/2023 11:45:00 AM | 2 | 2 | 4 |
| Total | 34 | 31 | 65 |
| Percentage | 52.3\% | 47.7\% |  |
| Peak Hour | 9:15 AM | 9:45 AM | 9:45 AM |
| Volume | 11 | 11 | 21 |
| PHF | 0.917 | 0.917 | 0.875 |

All Traffic Data Services

| Time | NB | SB | Total |
| :---: | :---: | :---: | :---: |
| 4/5/2023 12:00:00 PM | 3 | 1 | 4 |
| 4/5/2023 12:15:00 PM | 4 | 6 | 10 |
| 4/5/2023 12:30:00 PM | 3 | 0 | 3 |
| 4/5/2023 12:45:00 PM | 5 | 5 | 10 |
| 4/5/2023 1:00:00 PM | 6 | 2 | 8 |
| 4/5/2023 1:15:00 PM | 3 | 7 | 10 |
| 4/5/2023 1:30:00 PM | 5 | 2 | 7 |
| 4/5/2023 1:45:00 PM | 4 | 4 | 8 |
| 4/5/2023 2:00:00 PM | 7 | 5 | 12 |
| 4/5/2023 2:15:00 PM | 6 | 3 | 9 |
| 4/5/2023 2:30:00 PM | 2 | 5 | 7 |
| 4/5/2023 2:45:00 PM | 0 | 3 | 3 |
| 4/5/2023 3:00:00 PM | 5 | 5 | 10 |
| 4/5/2023 3:15:00 PM | 3 | 6 | 9 |
| 4/5/2023 3:30:00 PM | 4 | 7 | 11 |
| 4/5/2023 3:45:00 PM | 5 | 3 | 8 |
| 4/5/2023 4:00:00 PM | 1 | 3 | 4 |
| 4/5/2023 4:15:00 PM | 3 | 7 | 10 |
| 4/5/2023 4:30:00 PM | 1 | 3 | 4 |
| 4/5/2023 4:45:00 PM | 4 | 2 | 6 |
| 4/5/2023 5:00:00 PM | 2 | 3 | 5 |
| 4/5/2023 5:15:00 PM | 10 | 6 | 16 |
| 4/5/2023 5:30:00 PM | 1 | 6 | 7 |
| 4/5/2023 5:45:00 PM | 2 | 0 | 2 |
| 4/5/2023 6:00:00 PM | 2 | 1 | 3 |
| 4/5/2023 6:15:00 PM | 1 | 3 | 4 |
| 4/5/2023 6:30:00 PM | 3 | 0 | 3 |
| 4/5/2023 6:45:00 PM | 3 | 1 | 4 |
| 4/5/2023 7:00:00 PM | 1 | 9 | 10 |
| 4/5/2023 7:15:00 PM | 2 | 1 | 3 |
| 4/5/2023 7:30:00 PM | 1 | 2 | 3 |
| 4/5/2023 7:45:00 PM | 2 | 1 | 3 |
| 4/5/2023 8:00:00 PM | 0 | 0 | 0 |
| 4/5/2023 8:15:00 PM | 0 | 1 | 1 |
| 4/5/2023 8:30:00 PM | 0 | 0 | 0 |
| 4/5/2023 8:45:00 PM | 0 | 1 | 1 |
| 4/5/2023 9:00:00 PM | 0 | 0 | 0 |
| 4/5/2023 9:15:00 PM | 0 | 0 | 0 |
| 4/5/2023 9:30:00 PM | 0 | 0 | 0 |
| 4/5/2023 9:45:00 PM | 0 | 0 | 0 |
| 4/5/2023 10:00:00 PM | 0 | 0 | 0 |
| 4/5/2023 10:15:00 PM | 1 | 0 | 1 |
| 4/5/2023 10:30:00 PM | 0 | 2 | 2 |
| 4/5/2023 10:45:00 PM | 0 | 0 | 0 |
| 4/5/2023 11:00:00 PM | 1 | 0 | 1 |
| 4/5/2023 11:15:00 PM | 0 | 0 | 0 |
| 4/5/2023 11:30:00 PM | 0 | 0 | 0 |
| 4/5/2023 11:45:00 PM | 0 | 0 | 0 |
| Total | 106 | 116 | 222 |
| Percentage | 47.7\% | 52.3\% |  |
| Peak Hour | 1:30 PM | 2:45 PM | 3:00 PM |
| Volume | 22 | 21 | 38 |
| PHF | 0.786 | 0.750 | 0.864 |
| Grand Total | 140 | 147 | 287 |
| Percentage | 48.8\% | 51.2\% |  |

## APPENDIX B

Level of Service Definitions

The following information can be found in the Highway Capacity Manual, Transportation Research Board, 2016: Chapter 19 - Signalized Intersections and Chapter 20 - Two-Way Stop Controlled Intersections.

## Automobile Level of Service (LOS) for Signalized Intersections

Levels of service are defined to represent reasonable ranges in control delay.

## LOS A

Describes operations with a control delay of $10 \mathrm{~s} / \mathrm{veh}$ or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

## LOS B

Describes operations with control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

## LOS C

Describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

## LOS D

Describes operations with control delay between 35 and $55 \mathrm{~s} / \mathrm{veh}$ and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

## LOS E

Describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F
Describes operations with control delay exceeding $80 \mathrm{~s} / \mathrm{veh}$ or a volume-to-capacity ratio greater than 1.0 . This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

## Level of Service (LOS) for Unsignalized TWSC Intersections

| Level of Service (v/c $\leq 1.0)$ | Average Control Delay (s/veh) |
| :---: | :---: |
| A | $0-10$ |
| B | $>10-15$ |
| C | $>15-25$ |
| D | $>25-35$ |
| E | $>35-50$ |
| F | $>50$ |

## APPENDIX C

Capacity Worksheets

| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 1.2 |  |  |  |  |  |
| Movement | EBT | EBR | WBL | WBT | NWL | NWR |
| Lane Configurations | F |  |  | $\uparrow$ | Mr |  |
| Traffic Vol, veh/h | 112 | 18 | 2 | 159 | 36 | 1 |
| Future Vol, veh/h | 112 | 18 | 2 | 159 | 36 | 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 | 122 | 20 | 2 | 173 | 39 | 1 |



| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh 2.3 |  |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  | $\ddagger$ |  |  | * |  |  | $\ddagger$ |  |  | $\ddagger$ |  |
| Traffic Vol, veh/h | 6 | 0 | 17 | 7 | 6 | 1 | 9 | 43 | 3 | 1 | 88 | 5 |
| Future Vol, veh/h | 6 | 0 | 17 | 7 | 6 | 1 | 9 | 43 | 3 | 1 | 88 | 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 | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, \# | \# | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 7 | 0 | 18 | 8 | 7 | 1 | 10 | 47 | 3 | 1 | 96 | 5 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 1.2 |  |  |  |  |  |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations |  | -1 | $\mathbf{T}$ |  | Mr |  |
| Traffic Vol, veh/h | 2 | 20 | 15 | 1 | 2 | 2 |
| Future Vol, veh/h | 2 | 20 | 15 | 1 | 2 | 2 |
| 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 | 2 | 22 | 16 | 1 | 2 | 2 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 0 |  |  |  |  |  |
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | Mr |  |  | $\mathbf{A}$ | $\mathbf{F}$ |  |
| Traffic Vol, veh/h | 0 | 0 | 0 | 49 | 94 | 2 |
| Future Vol, veh/h | 0 | 0 | 0 | 49 | 94 | 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 | 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 | 0 | 0 | 0 | 53 | 102 | 2 |


| Major/Minor M | Minor2 |  | Major1 |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 156 | 103 | 104 | 0 | - | 0 |
| Stage 1 | 103 | - | - | - | - | - |
| Stage 2 | 53 | - | - | - | - | - |
| 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 | 835 | 952 | 1488 | - | - | - |
| Stage 1 | 921 | - | - | - | - | - |
| Stage 2 | 970 | - | - | - | - | - |
| Platoon blocked, \% |  |  |  | - | - | - |
| Mov Cap-1 Maneuver | 835 | 952 | 1488 | - | - | - |
| Mov Cap-2 Maneuver | 835 | - | - | - | - | - |
| Stage 1 | 921 | - | - | - | - | - |
| Stage 2 | 970 | - | - | - | - | - |
|  |  |  |  |  |  |  |
| Approach | EB |  | NB |  | B |  |
| HCM Control Delay, s | 0 |  | 0 |  | 0 |  |
| HCM LOS | A |  |  |  |  |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NBL | NBT EBLn1 |  | SBT | SBR |
| Capacity (veh/h) |  | 1488 | - | - | - | - |
| HCM Lane V/C Ratio |  | - | - | - | - | - |
| HCM Control Delay (s) |  | 0 | - | 0 | - | - |
| HCM Lane LOS |  | A | - | A | - | - |
| HCM 95th \%tile Q(veh) |  | 0 | - | - | - | - |


| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 1.2 |  |  |  |  |  |
| Movement | EBT | EBR | WBL | WBT | NWL | NWR |
| Lane Configurations | F |  |  | $\uparrow$ | Mr |  |
| Traffic Vol, veh/h | 383 | 84 | 5 | 254 | 53 | 5 |
| Future Vol, veh/h | 383 | 84 | 5 | 254 | 53 | 5 |
| 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 | 416 | 91 | 5 | 276 | 58 | 5 |


| Major/Minor M | Major1 |  | Major2 |  | Minor1 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 0 | 0 | 507 | 0 | 748 | 462 |
| Stage 1 | - | - | - | - | 462 | - |
| Stage 2 | - | - | - | - | 286 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1058 | - | 380 | 600 |
| Stage 1 | - | - | - | - | 634 | - |
| Stage 2 | - | - | - | - | 763 | - |
| Platoon blocked, \% | - | - |  | - |  |  |
| Mov Cap-1 Maneuver | - | - | 1058 | - | 378 | 600 |
| Mov Cap-2 Maneuver | - | - | - | - | 378 | - |
| Stage 1 | - | - | - | - | 634 | - |
| Stage 2 | - | - | - | - | 758 | - |
|  |  |  |  |  |  |  |
| Approach | EB |  | WB |  | NW |  |
| HCM Control Delay, s | 0 |  | 0.2 |  | 16 |  |
| HCM LOS |  |  |  |  | C |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NWLn1 | EBT | EBR | WBL WBT |  |
| Capacity (veh/h) |  | 90 | - | - | 1058 | - |
| HCM Lane V/C Ratio |  | 62 | - | - | 0.005 | - |
| HCM Control Delay (s) |  | 16 | - | - | 8.4 | 0 |
| HCM Lane LOS |  | C | - | - | A | A |
| HCM 95th \%tile Q(veh) |  | 0.6 | - | - | 0 | - |


| Intersection |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Int Delay, s/veh | 2.2 |  |  |  |  |  |  |  |  |  |  |  |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  | * |  |  | * |  |  | \& |  |  | $\ddagger$ |  |
| Traffic Vol, veh/h | 11 | 6 | 26 | 2 | 0 | 2 | 40 | 127 | 8 | 5 | 138 | 11 |
| Future Vol, veh/h | 11 | 6 | 26 | 2 | 0 | 2 | 40 | 127 | 8 | 5 | 138 | 11 |
| 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 | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, \# | \# | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, \% | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, \% | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 12 | 7 | 28 | 2 | 0 | 2 | 43 | 138 | 9 | 5 | 150 | 12 |







| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 1.2 |  |  |  |  |  |
| Movement | EBT | EBR | WBL | WBT | NWL | NWR |
| Lane Configurations | $\mathbf{b}$ |  |  | $\uparrow$ | Mr |  |
| Traffic Vol, veh/h | 119 | 19 | 2 | 169 | 38 | 1 |
| Future Vol, veh/h | 119 | 19 | 2 | 169 | 38 | 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 | 129 | 21 | 2 | 184 | 41 | 1 |


| Major/Minor M | Major1 |  | Major2 |  | Minor1 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 0 | 0 | 150 | 0 | 328 | 140 |
| Stage 1 | - | - | - | - | 140 | - |
| Stage 2 | - | - | - | - | 188 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1431 | - | 666 | 908 |
| Stage 1 | - | - | - | - | 887 | - |
| Stage 2 | - | - | - | - | 844 | - |
| Platoon blocked, \% | - | - |  | - |  |  |
| Mov Cap-1 Maneuver | - | - | 1431 | - | 665 | 908 |
| Mov Cap-2 Maneuver | - | - | - | - | 665 | - |
| Stage 1 | - | - | - | - | 887 | - |
| Stage 2 | - | - | - | - | 842 | - |
|  |  |  |  |  |  |  |
| Approach | EB |  | WB |  | NW |  |
| HCM Control Delay, s | 0 |  | 0.1 |  | 10.7 |  |
| HCM LOS |  |  |  |  | B |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NWLn1 | EBT | EBR | WBL WBT |  |
| Capacity (veh/h) |  | 70 | - | - | 1431 | - |
| HCM Lane V/C Ratio |  | . 63 | - | - | 0.002 | - |
| HCM Control Delay (s) |  | 0.7 | - | - | 7.5 | 0 |
| HCM Lane LOS |  | B | - | - | A | A |
| HCM 95th \%tile Q(veh) |  | 0.2 | - | - | 0 | - |




| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 1.1 |  |  |  |  |  |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations |  | $\mathbf{A}$ | $\mathbf{f}$ |  | Tr |  |
| Traffic Vol, veh/h | 2 | 21 | 16 | 1 | 2 | 2 |
| Future Vol, veh/h | 2 | 21 | 16 | 1 | 2 | 2 |
| 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 | 2 | 23 | 17 | 1 | 2 | 2 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |


| Major/Minor | Minor2 | Major1 |  |  | Major2 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 167 | 110 | 111 | 0 | - | 0 |  |
| Stage 1 | 110 | - | - | - | - | - |  |
| Stage 2 | 57 | - |  | - | - | - |  |
| 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 | 823 | 943 | 1479 | - | - | - |  |
| Stage 1 | 915 | - | - | - | - | - |  |
| Stage 2 | 966 | - | - | - | - | - |  |
| Platoon blocked, \% |  |  |  | - | - | - |  |
| Mov Cap-1 Maneuver | 823 | 943 | 1479 | - | - | - |  |
| Mov Cap-2 Maneuver | 823 | - | - | - | - | - |  |
| Stage 1 | 915 | - | - | - | - | - |  |
| Stage 2 | 966 | - | - | - | - | - |  |
|  |  |  |  |  |  |  |  |
| Approach | EB |  | NB |  | SB |  |  |
| HCM Control Delay, s | 0 |  | 0 |  | 0 |  |  |
| HCM LOS | A |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Minor Lane/Major Mvm |  | NBL | NBT | 1 | SBT | SBR |  |
| Capacity (veh/h) |  | 1479 | - | - | - | - |  |
| HCM Lane V/C Ratio |  | - | - | - | - | - |  |
| HCM Control Delay (s) |  | 0 |  | 0 | - | - |  |
| HCM Lane LOS |  | A | - | A | - | - |  |
| HCM 95th \%tile Q(veh) |  | 0 | - | - | - | - |  |


| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 1.3 |  |  |  |  |  |
| Movement | EBT | EBR | WBL | WBT | NWL | NWR |
| Lane Configurations | $\boldsymbol{b}$ |  |  | $\mathbf{T}$ | Mr |  |
| Traffic Vol, veh/h | 406 | 89 | 5 | 269 | 56 | 5 |
| Future Vol, veh/h | 406 | 89 | 5 | 269 | 56 | 5 |
| 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 | 441 | 97 | 5 | 292 | 61 | 5 |


| Major/Minor M | Major1 |  | Major2 |  | Minor1 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 0 | 0 | 538 | 0 | 792 | 490 |
| Stage 1 | - | - | - | - | 490 | - |
| Stage 2 | - | - | - | - | 302 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1030 | - | 358 | 578 |
| Stage 1 | - | - | - | - | 616 | - |
| Stage 2 | - | - | - | - | 750 | - |
| Platoon blocked, \% | - | - |  | - |  |  |
| Mov Cap-1 Maneuver | - | - | 1030 | - | 356 | 578 |
| Mov Cap-2 Maneuver | - | - | - | - | 356 | - |
| Stage 1 | - | - | - | - | 616 | - |
| Stage 2 | - | - | - | - | 746 | - |
|  |  |  |  |  |  |  |
| Approach | EB |  | WB |  | NW |  |
| HCM Control Delay, s | 0 |  | 0.2 |  | 16.9 |  |
| HCM LOS |  |  |  |  | C |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NWLn1 | EBT | EBR | WBL WBT |  |
| Capacity (veh/h) |  | 68 | - | - | 1030 | - |
| HCM Lane V/C Ratio |  | 18 | - | - | 0.005 | - |
| HCM Control Delay (s) |  | . 9 | - | - | 8.5 | 0 |
| HCM Lane LOS |  | C | - | - | A | A |
| HCM 95th \%tile Q(veh) |  | 0.6 | - | - | 0 | - |




| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 1.9 |  |  |  |  |  |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations |  | $\mathbf{\uparrow}$ | $\mathbf{7}$ |  | 1 |  |
| Traffic Vol, veh/h | 7 | 34 | 46 | 13 | 13 | 7 |
| Future Vol, veh/h | 7 | 34 | 46 | 13 | 13 | 7 |
| 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 | 8 | 37 | 50 | 14 | 14 | 8 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 1.3 |  |  |  |  |  |
| Movement | EBT | EBR | WBL | WBT | NWL | NWR |
| Lane Configurations | $\mathbf{b}$ |  |  | $\mathbf{T}$ | Mr |  |
| Traffic Vol, veh/h | 119 | 20 | 2 | 169 | 39 | 1 |
| Future Vol, veh/h | 119 | 20 | 2 | 169 | 39 | 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 | 129 | 22 | 2 | 184 | 42 | 1 |


| Major/Minor M | Major1 |  | Major2 |  | Minor1 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 0 | 0 | 151 | 0 | 328 | 140 |
| Stage 1 | - |  | - | - | 140 | - |
| Stage 2 | - | - | - | - | 188 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1430 |  | 666 | 908 |
| Stage 1 | - | - | - | - | 887 | - |
| Stage 2 | - | - | - | - | 844 | - |
| Platoon blocked, \% | - | - |  | - |  |  |
| Mov Cap-1 Maneuver | - | - | 1430 | - | 665 | 908 |
| Mov Cap-2 Maneuver | - | - | - | - | 665 | - |
| Stage 1 | - | - | - | - | 887 | - |
| Stage 2 | - | - | - | - | 842 | - |
|  |  |  |  |  |  |  |
| Approach | EB |  | WB |  | NW |  |
| HCM Control Delay, s | 0 |  | 0.1 |  | 10.8 |  |
| HCM LOS |  |  |  |  | B |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NWLn1 | EBT | EBR | WBL WBT |  |
| Capacity (veh/h) |  | 669 | - | - | 1430 | - |
| HCM Lane V/C Ratio |  | 0.065 | - | - | 0.002 | - |
| HCM Control Delay (s) |  | 10.8 | - | - | 7.5 | 0 |
| HCM Lane LOS |  | B | - | - | A | A |
| HCM 95th \%tile Q(veh) |  | 0.2 | - | - | 0 | - |




| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 1.5 |  |  |  |  |  |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations |  | -1 | $\mathbf{T}$ |  | Mr |  |
| Traffic Vol, veh/h | 3 | 21 | 16 | 2 | 3 | 3 |
| Future Vol, veh/h | 3 | 21 | 16 | 2 | 3 | 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 | 3 | 23 | 17 | 2 | 3 | 3 |




| Major/Minor | Minor2 | Major1 |  |  | Major2 |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 168 | 111 | 112 | 0 | - | 0 |  |
| Stage 1 | 111 | - | - | - | - | - |  |
| Stage 2 | 57 | - |  | - | - | - |  |
| 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 | 822 | 942 | 1478 | - | - | - |  |
| Stage 1 | 914 | - | - | - | - | - |  |
| Stage 2 | 966 | - | - | - | - | - |  |
| Platoon blocked, \% |  |  |  | - | - | - |  |
| Mov Cap-1 Maneuver | 822 | 942 | 1478 | - | - | - |  |
| Mov Cap-2 Maneuver | 822 | - | - | - | - | - |  |
| Stage 1 | 914 | - | - | - | - | - |  |
| Stage 2 | 966 | - | - | - | - | - |  |
|  |  |  |  |  |  |  |  |
| Approach | EB |  | NB |  | SB |  |  |
| HCM Control Delay, s | 0 |  | 0 |  | 0 |  |  |
| HCM LOS | A |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Minor Lane/Major Mvm |  | NBL | NBT | 1 | SBT | SBR |  |
| Capacity (veh/h) |  | 1478 | - | - | - | - |  |
| HCM Lane V/C Ratio |  | - | - | - | - | - |  |
| HCM Control Delay (s) |  | 0 |  | 0 | - | - |  |
| HCM Lane LOS |  | A | - | A | - | - |  |
| HCM 95th \%tile Q(veh) |  | 0 | - | - | - | - |  |


| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 1.4 |  |  |  |  |  |
| Movement | EBT | EBR | WBL | WBT | NWL | NWR |
| Lane Configurations | $\mathbf{7}$ |  |  | $-\uparrow$ | Tr |  |
| Traffic Vol, veh/h | 406 | 90 | 5 | 269 | 58 | 5 |
| Future Vol, veh/h | 406 | 90 | 5 | 269 | 58 | 5 |
| 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 | 441 | 98 | 5 | 292 | 63 | 5 |


| Major/Minor M | Major1 |  | Major2 |  | Minor1 |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 0 | 0 | 539 | 0 | 792 | 490 |
| Stage 1 | - | - | - | - | 490 | - |
| Stage 2 | - | - | - | - | 302 | - |
| Critical Hdwy | - | - | 4.12 | - | 6.42 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.42 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.42 | - |
| Follow-up Hdwy | - | - | 2.218 | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver | - | - | 1029 | - | 358 | 578 |
| Stage 1 | - | - | - | - | 616 | - |
| Stage 2 | - | - | - | - | 750 | - |
| Platoon blocked, \% | - | - |  | - |  |  |
| Mov Cap-1 Maneuver | - | - | 1029 | - | 356 | 578 |
| Mov Cap-2 Maneuver | - | - | - | - | 356 | - |
| Stage 1 | - | - | - | - | 616 | - |
| Stage 2 | - | - | - | - | 746 | - |
|  |  |  |  |  |  |  |
| Approach | EB |  | WB |  | NW |  |
| HCM Control Delay, s | 0 |  | 0.2 |  | 17 |  |
| HCM LOS |  |  |  |  | C |  |
|  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NWLn1 | EBT | EBR | WBL WBT |  |
| Capacity (veh/h) |  | 67 | - | - | 1029 | - |
| HCM Lane V/C Ratio |  |  | - | - | 0.005 | - |
| HCM Control Delay (s) |  | 17 | - | - | 8.5 | 0 |
| HCM Lane LOS |  | C | - | - | A | A |
| HCM 95th \%tile Q(veh) |  | 0.7 | - | - | 0 | - |




| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |
| Int Delay, s/veh | 2.1 |  |  |  |  |  |
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations |  | $\mathbf{A}$ | $\mathbf{f}$ |  | rin |  |
| Traffic Vol, veh/h | 8 | 34 | 46 | 14 | 14 | 9 |
| Future Vol, veh/h | 8 | 34 | 46 | 14 | 14 | 9 |
| Conflicting Peds, \#/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 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 | 9 | 37 | 50 | 15 | 15 | 10 |



| Intersection |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: |


| Major/Minor | Minor2 | Major1 Major2 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Conflicting Flow All | 335 | 174 | 175 | 0 | - | 0 |  |
| Stage 1 | 174 | - |  | - | - | - |  |
| Stage 2 | 161 | - |  | - | - | - |  |
| 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 | 660 | 869 | 1401 | - | - | - |  |
| Stage 1 | 856 | - |  | - | - | - |  |
| Stage 2 | 868 | - |  | - | - | - |  |
| Platoon blocked, \% |  |  |  | - | - | - |  |
| Mov Cap-1 Maneuver | 659 | 869 | 1401 | - | - | - |  |
| Mov Cap-2 Maneuver | 659 | - |  | - | - | - |  |
| Stage 1 | 855 | - |  | - | - | - |  |
| Stage 2 | 868 | - |  | - | - | - |  |
|  |  |  |  |  |  |  |  |
| Approach | EB |  | NB |  | SB |  |  |
| HCM Control Delay, s | 9.8 |  | 0.1 |  | 0 |  |  |
| HCM LOS | A |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Minor Lane/Major Mvmt |  | NBL | NBT | BLn1 | SBT | SBR |  |
| Capacity (veh/h) |  | 1401 |  | 765 | - | - |  |
| HCM Lane V/C Ratio |  | 0.001 |  | 0.01 | - | - |  |
| HCM Control Delay (s) |  | 7.6 | 0 | 9.8 | - | - |  |
| HCM Lane LOS |  | A | A | A | - | - |  |
| HCM 95th \%tile Q(veh) |  | 0 |  | 0 | - | - |  |


[^0]:    ${ }^{1}$ El Paso County 2016 Major Transportation Corridors Plan Update, Felsburg Holt \& Ullevig, December 2016.
    ${ }^{2}$ El Paso County Engineering Criteria Manual, El Paso County, December 2016.

[^1]:    ${ }^{3}$ Transportation Data Management System, MS2, 2022.

[^2]:    ${ }^{4}$ Land Development Code of El Paso County, Colorado, El Paso County Development, December 2021.

