Appendix A

# Preliminary Drainage Report

# PRELIMINARY DRAINAGE REPORT

# FOR

## Bartlesville 14.993 Acre Site
## Washington County, Oklahoma
## Part of NW/4 of Section 28, T26N, R13E

## PREPARED BY:


RICHARD L. KOSMAN, PE.
& ASSOCIATES PLC
CIVIL ENGINEERING
9910 South Hudson Place
Tulsa, OK. 74137
**Phone: 918(277-4784)**
Email: rkosman@sbcglobal.net
Certificate of Authority No. 4831
Expires June 30, 2025

February 19th, 2024

Owner: Cherokee Nation

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## Part of NW/4 of Section 28, T26N, R13E


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# I. REPORT CERTIFICATION

" I hereby certify this report for the design of the Stormwater Detention Pond for "Bartlesville 14.993 Acre Site" was prepared by me in accordance ODOT Criteria for connection the outflow pipes from the detention ponds to ODOT storm water system on the east side of US 75.

## II. GENERAL LOCATION AND DESCRIPTION

Location: The project is located east of US 75 approximately 8375' south of the east leg of US 60. The site is heavily treed and slopes form east to west with a grade change of 60 feet or roughly 6% slope. The property has approximately 660'of US 75 frontage with a depth of 990' consisting of approximately 14.993 acres.

The new address for the project is TO BE DETERMINED.

Name and Address of Owner: Cherokee Nation Business
( Current Address)
Legal Description: The East 990' of the West 1103.5 Feet of the N ½ of the NW ¼ Of the SW ¼ of Section 28, T-26-N, R-13-E of the IB&M. Washington County, State Of Oklahoma containing 14.993 Acres more or less. Book #0981, Page# 0942 Dated 10/15/2002

Soil Types: The soil type for the project is type D. See Web Soil Survey- Appendix B

## III. DRAINAGE BASINS AND HYDROLOGY

Hydrology:

The software program used for this project was Hydraflow 2004 and Hydraflow Storm Sewers 2008, SCS Method was used with the Rainfall data from Depth-Duration Frequency of Precipitation of Oklahoma ( Water-Resources Investigations Report 99-4232)

Existing Runoff Conditions:

The existing Property, which is treed, slopes from east to west at approximately 7.17%.

Proposed Runoff:

The proposed property will be 85% hard surface with storm sewer piping leaving the remaining 15% for storm water detention and landscaping. We will assume 15% of the land will be use for one detention pond for now with a bottom widths of 200'x 200'; slopewalls with 4:1 slopes and a depth of 6'. We have shown using a 24" pipe at a flowline of 690.00 for the outlet pipe to one of the three ODOT structures also having 24" pipe system. ( See Old ODOT PLANS).

Table 1
Total Rainfall Depth – Washington Co Oklahoma(inches)
Water-Resources Investigations Report 99-4232( Appendix A)

| Fre q. | 2 Yr. | 5 Yr. | 10 Yr. | 25 Yr. | 50 Yr. | 100 Yr. |
|---|---|---|---|---|---|---|
| 24 hour | 3.40 | 4.60 | 5.50 | 6.60 | 7.60 | 8.40 |

Table 2
Existing Conditions (Areas, CN Values and Time of Concentration)

| Basin | Area (Acres) | CN | Time of Conc (Min) |
|---|---|---|---|
| Ex-A Onsite | 14.99 | 77 | 17.0 |
| | | | |
| | | | |
| | | | |

Table 3
Proposed Conditions (Areas, CN Values and Time of Concentration)

| Basin | Area (Acres) | CN | Time of Conc (Min) |
|---|---|---|---|
| Prop-1 | 14.99 | 95 | 3.3 |
| | | | |
| | | | |
| | | | |

Table 4
Existing and Proposed Conditions **Hydraflow Data** / Storm Distribution Type II
Frequency & CFS

| Basin | 2 | 5 | 10 | 25 | 50 | 100 |
|---|---|---|---|---|---|---|
| Ex-A | 24.22 | 41.59 | 55.34 | 72.58 | 88.48 | 101.27 |
| Prop-1 | 73.44 | 101.64 | 122.64 | 148.18 | 171.32 | 189.79 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

Table 5

## Pond 1 – Storage/Discharge

| ELEV. (FT) | CONTOUR AREA (S.F.) | TOTAL STORAGE ( Cu Ft) | DISCHARGE (CFS) |
|---|---|---|---|
| 690 ( 24" Dia Pipe) | 0 | 0 | 0 |
| 691.2 | 43,932 | 50,341 | |
| 692.1 | 47,002 | 91,254 | |
| 693.00 | 50,176 | 134,976 | |
| 694.2 | 54,569 | 197,805 | |
| 695.1 | 57,985 | 248,446 | |
| 696.00 | 61,504 | 302,208 | |

Table 6

## Pond 1 – Freq/Peak Outflow (CFS)

| | 2 YR | 5 YR | 10 YR | 25 YR | 50 YR | 100 YR |
|---|---|---|---|---|---|---|
| OUTLET | 13.29 | 17.67 | 20.24 | 22.91 | 25.02 | 26.54 |
| ELEV (FT) | 691.77 | 692.36 | 692.79 | 693.30 | 693.74 | 694.00 |

Table 7

DETENTION **POND 1** SUMMARY

Existing Flow Rates (Using **HydraFlow Software**, 1 Minute Interval)

(Versus Proposed Flow Rates)

Frequency

| Basin | 2 | 5 | 10 | 25 | 50 | 100 |
|---|---|---|---|---|---|---|
| Ex-A-**Hyd 1** | 24.22 | 41.49 | 55.34 | 72.58 | 88.48 | 101.27 |
| Hyd 2 Routed Thru Pond 1- **Hyd 3** | 13.29 | 17.67 | 20.24 | 22.91 | 25.02 | 26.54 |
| | | | | | | |

**SUMMARY: The proposed storm water (Hyd2) routed through Pond 1 are considerably less than the existing area A condition. There is an existing storm sewer system on the east side of US75 ( See ODOT OLD PLANS) with a number of inlets (Inlets 24,26,28 & 30) where the proposed 24"outlet pipe could tie into. These are preliminary calculations which means no TOPO survey has been conducted to date. The existing highway plans are dated from 1973 where the runoff was calculated appears to be calculated at a much smaller amount. When a topo survey has been completed and pipe sizes and depth confirmed, then either one or a number of detention pond could be designed for this project.**

# IV. EXISTING AND PROPOSED DRAINAGE AREAS

Ex – A.

DAN EDWIN TANNER 13990 OKLAHOMA REGISTERED PROFESSIONAL ENGINEER

Tanner Consulting, LLC
Land Planning
Civil Engineering
Land Surveying
Architecture
Interior Design
5323 SOUTH LEWIS AVENUE
TULSA, OKLAHOMA 74105
PHONE (918)745-9929
FAX (918)745-9960
www.tannerconsulting-llc.com
CERTIFICATE OF AUTHORIZATION NO:
CA 2665 EXP. 6/30/2013

CALL OKIE

| MILESTONE | DATE |
|---|---|
| | |

PLOT DATE: 3/18/13

ALL CONSTRUCTION TO BE IN STRICT ACCORDANCE WITH CURRENT CITY OF BARTLESVILLE STANDARDS AND SPECIFICATIONS (INCLUDING O.D.O.T. 2009 EDITION)

# Roberts Tract

SE Washington Blvd
Bartlesville, Oklahoma

PROJECT: 13034
ISSUE DATE: 3/1/2013
ATLAS PAGE NO: 000

PLAN SCALE: (H)
(V)

or 00

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PROP-1

# V. APPENDIX

# APPENDIX A
## Rainfall Precipitation (24 Hour Rainfall)

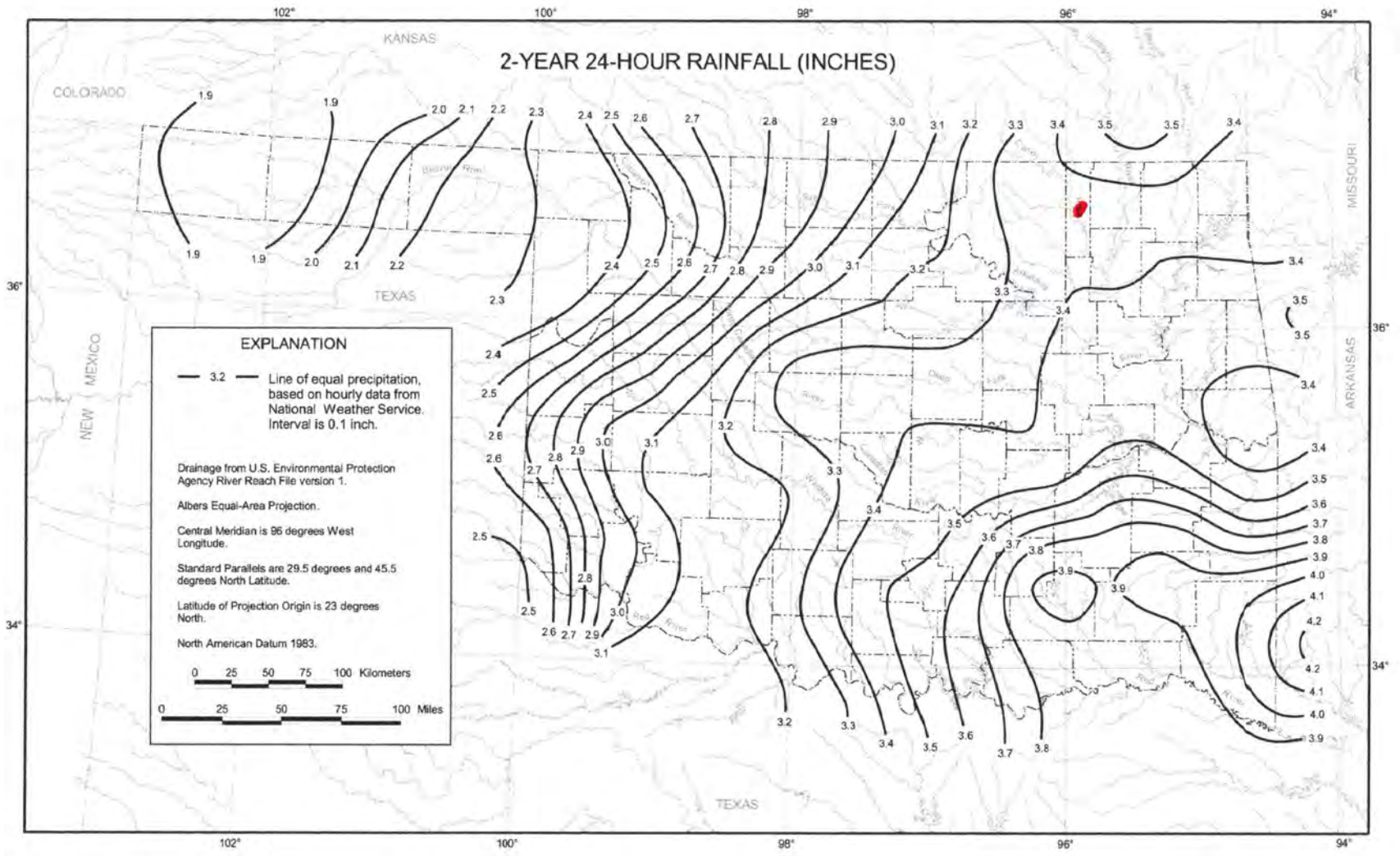



**Figure 65.** Depth of 2-year storm for 24-hour duration in Oklahoma.

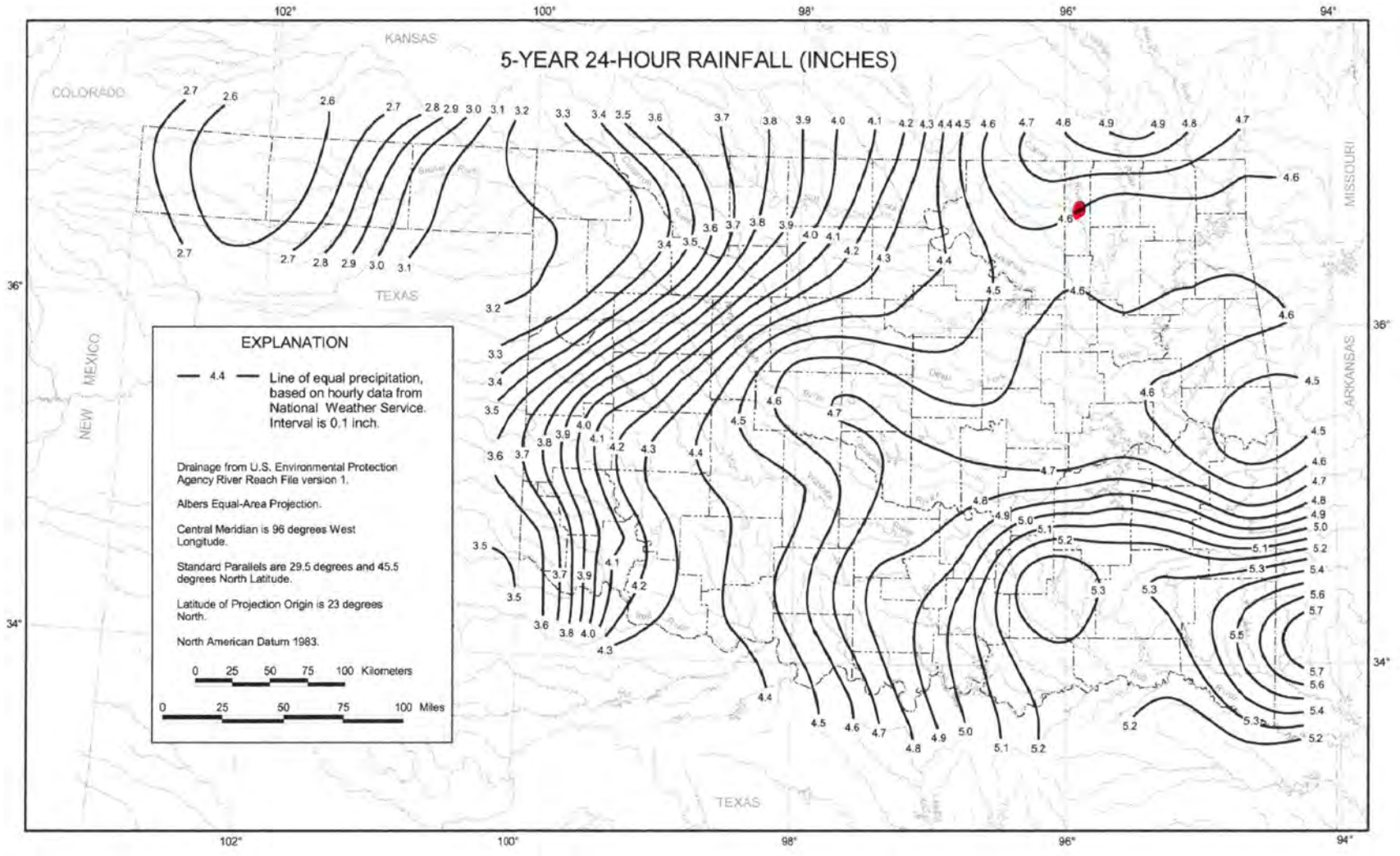



**Figure 66.** Depth of 5-year storm for 24-hour duration in Oklahoma.

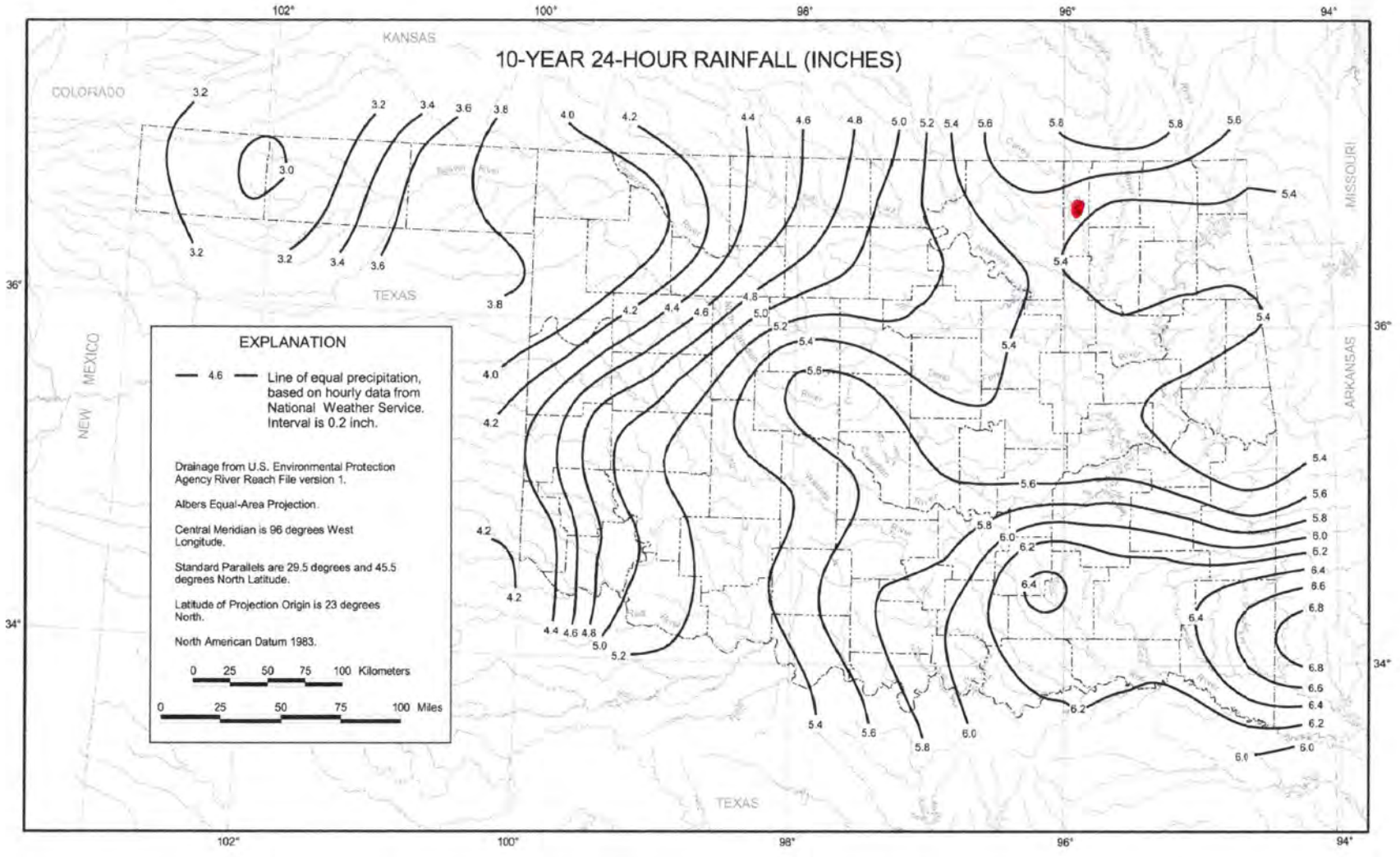



**Figure 67.** Depth of 10-year storm for 24-hour duration in Oklahoma.

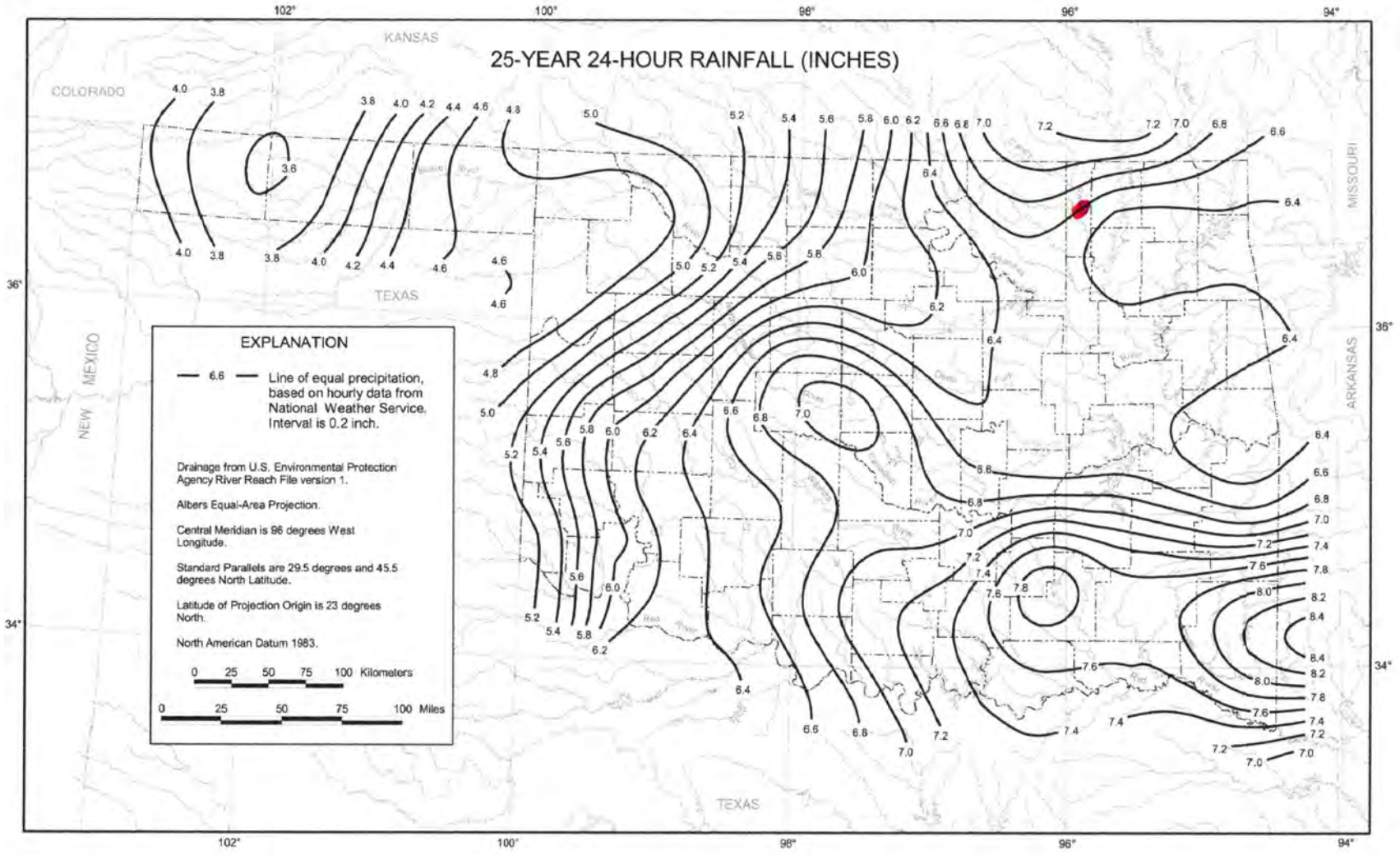



**Figure 68.** Depth of 25-year storm for 24-hour duration in Oklahoma.

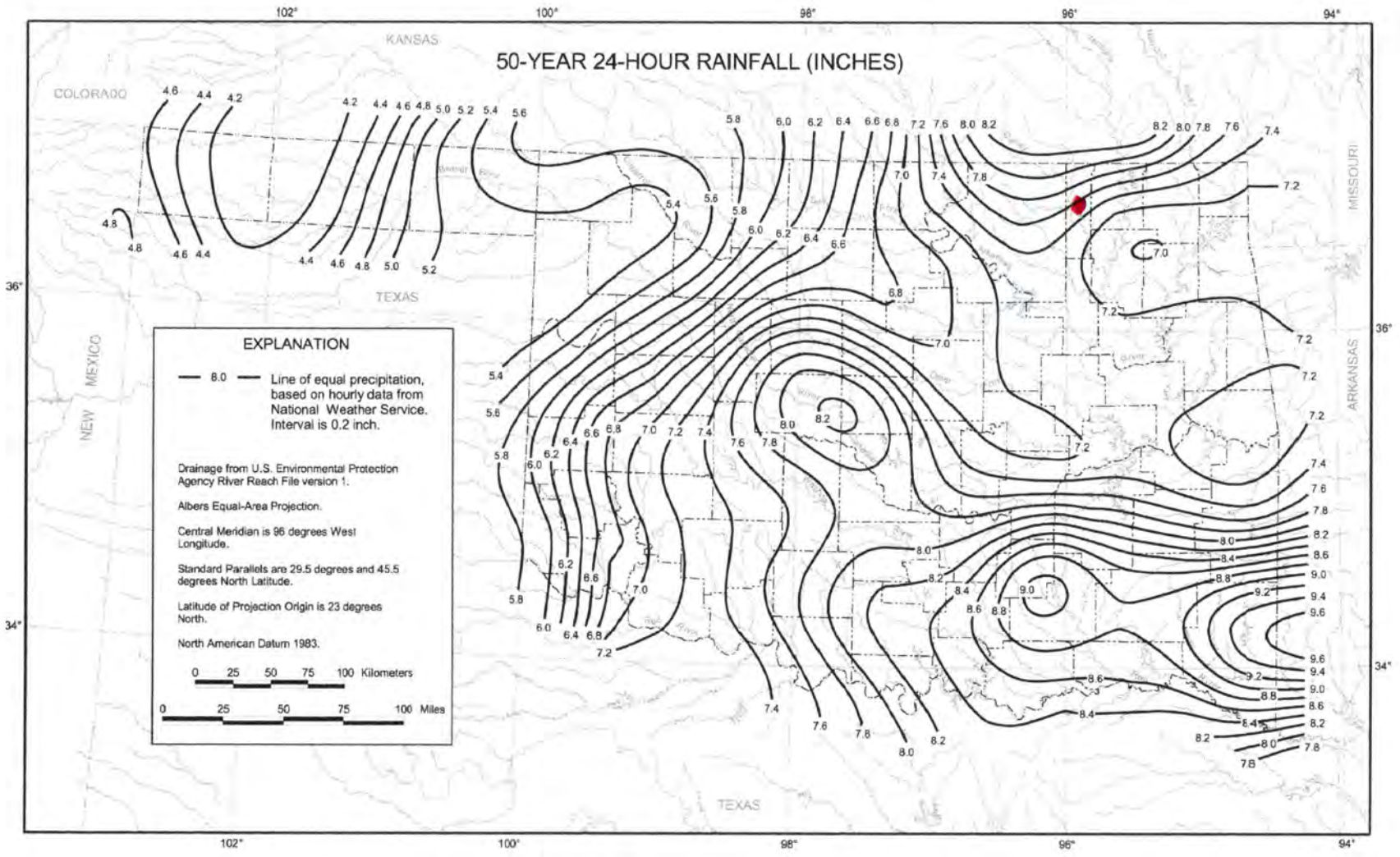



**Figure 69.** Depth of 50-year storm for 24-hour duration in Oklahoma.

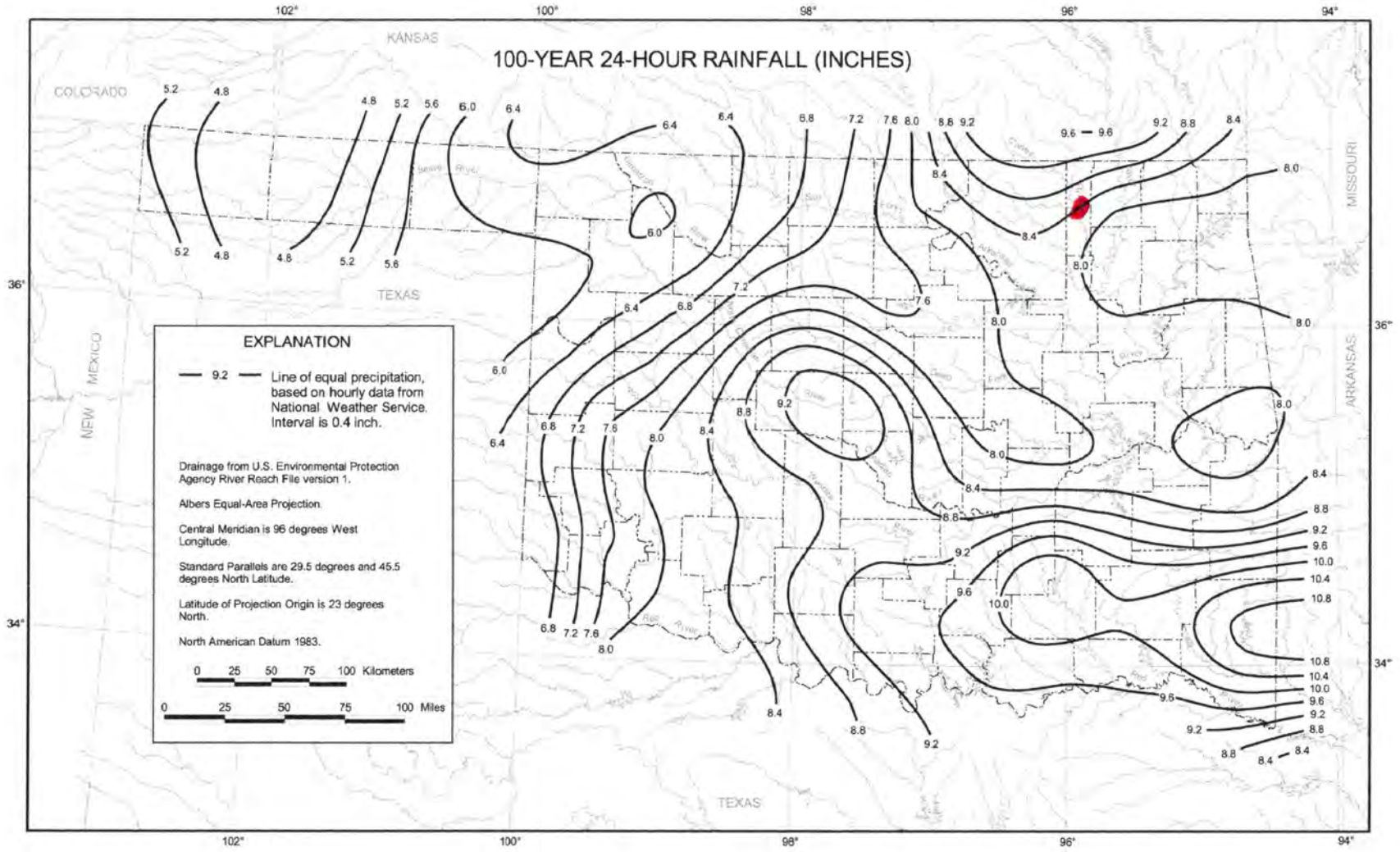



**Figure 70.** Depth of 100-year storm for 24-hour duration in Oklahoma.

# APPENDIX B
# Web Soil Survey Information

Hydrologic Soil Group—Washington County, Oklahoma
(Project Site East of US75)

Map Scale: 1:3,240 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**

**Soil Rating Polygons**
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

**Soil Rating Lines**
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

**Soil Rating Points**
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County, Oklahoma
Survey Area Data: Version 17, Sep 8, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 11, 2022—May 14, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Hydrologic Soil Group

| Map unit symbol | Map unit name | Rating | Acres in AOI | Percent of AOI |
|---|---|---|---|---|
| Bk | Eram-Verdigris complex, 0 to 12 percent slopes | D | 2.5 | 5.1% |
| CtE | Coweta-Eram complex, 5 to 20 percent slopes | D | 0.8 | 1.7% |
| DtC | Dennis silt loam, 3 to 5 percent slopes | C/D | 8.7 | 17.5% |
| Prqg | Pits, gravel and quarry | | 3.4 | 6.7% |
| SoE | Shidler stony silty clay loam, 1 to 20 percent slopes | D | 29.0 | 58.2% |
| SuB | Summit silty clay loam, 1 to 3 percent slopes | D | 4.7 | 9.5% |
| W | Water | | 0.7 | 1.3% |
| **Totals for Area of Interest** | | | **49.8** | **100.0%** |

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff: None Specified*

*Tie-break Rule:* Higher

# APPENDIX C
## Cn Values

US 75 Project
CN Values
Washington County, Oklahoma

Sub-Area Land Use and Curve Number Details

| Sub-Area Identifier | Land Use | | Hydrologic Soil Group | Sub-Area Area (ac) | Curve Number |
|---|---|---|---|---|---|
| Ex-A | Woods | (good) | D | 14.99 | 77 |
| | Total Area / Weighted Curve Number | | | 14.99 | 77 |
| Prop-1 | Open space; grass cover > 75% | (good) | D | 2.24 | 80 |
| | Paved parking lots, roofs, driveways | | D | 12.75 | 98 |
| | Total Area / Weighted Curve Number | | | 14.99 | 95 |

# APPENDIX D
# Hydraflow Report

# Hydrograph Return Period Recap

| Hyd. No. | Hydrograph type (origin) | Inflow Hyd(s) | Peak Outflow (cfs) | | | | | | | | Hydrograph description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1-Yr | 2-Yr | 3-Yr | 5-Yr | 10-Yr | 25-Yr | 50-Yr | 100-Yr | |
| 1 | SCS Runoff | ------- | 0.00 | 24.22 | ------- | 41.59 | 55.34 | 72.58 | 88.48 | 101.27 | Ex-A |
| 2 | SCS Runoff | ------- | 0.00 | 73.44 | ------- | 101.64 | 122.64 | 148.18 | 171.32 | 189.79 | Prop-1 |
| 3 | Reservoir | 2 | 0.00 | 13.29 | ------- | 17.67 | 20.24 | 22.91 | 25.02 | 26.54 | <no description> |

# Pond Report

Hydraflow Hydrographs by Intelisolve — Monday, Feb 19 2024, 4:36 PM

**Pond No. 1 - New Pond1**

**Pond Data**

Bottom LxW = 200.0 x 200.0 ft  Side slope = 4.0:1  Bottom elev. = 690.00 ft  Depth = 6.00 ft

**Stage / Storage Table**

| Stage (ft) | Elevation (ft) | Contour area (sqft) | Incr. Storage (cuft) | Total storage (cuft) |
|---|---|---|---|---|
| 0.00 | 690.00 | 40,000 | 0 | 0 |
| 0.30 | 690.30 | 40,966 | 12,145 | 12,145 |
| 0.60 | 690.60 | 41,943 | 12,436 | 24,581 |
| 0.90 | 690.90 | 42,932 | 12,731 | 37,312 |
| 1.20 | 691.20 | 43,932 | 13,029 | 50,341 |
| 1.50 | 691.50 | 44,944 | 13,331 | 63,672 |
| 1.80 | 691.80 | 45,967 | 13,636 | 77,308 |
| 2.10 | 692.10 | 47,002 | 13,945 | 91,254 |
| 2.40 | 692.40 | 48,049 | 14,257 | 105,511 |
| 2.70 | 692.70 | 49,107 | 14,573 | 120,084 |
| 3.00 | 693.00 | 50,176 | 14,892 | 134,976 |
| 3.30 | 693.30 | 51,257 | 15,215 | 150,191 |
| 3.60 | 693.60 | 52,349 | 15,541 | 165,731 |
| 3.90 | 693.90 | 53,453 | 15,870 | 181,601 |
| 4.20 | 694.20 | 54,569 | 16,203 | 197,805 |
| 4.50 | 694.50 | 55,696 | 16,539 | 214,344 |
| 4.80 | 694.80 | 56,835 | 16,879 | 231,223 |
| 5.10 | 695.10 | 57,985 | 17,223 | 248,446 |
| 5.40 | 695.40 | 59,146 | 17,569 | 266,015 |
| 5.70 | 695.70 | 60,319 | 17,920 | 283,935 |
| 6.00 | 696.00 | 61,504 | 18,273 | 302,208 |

**Culvert / Orifice Structures**

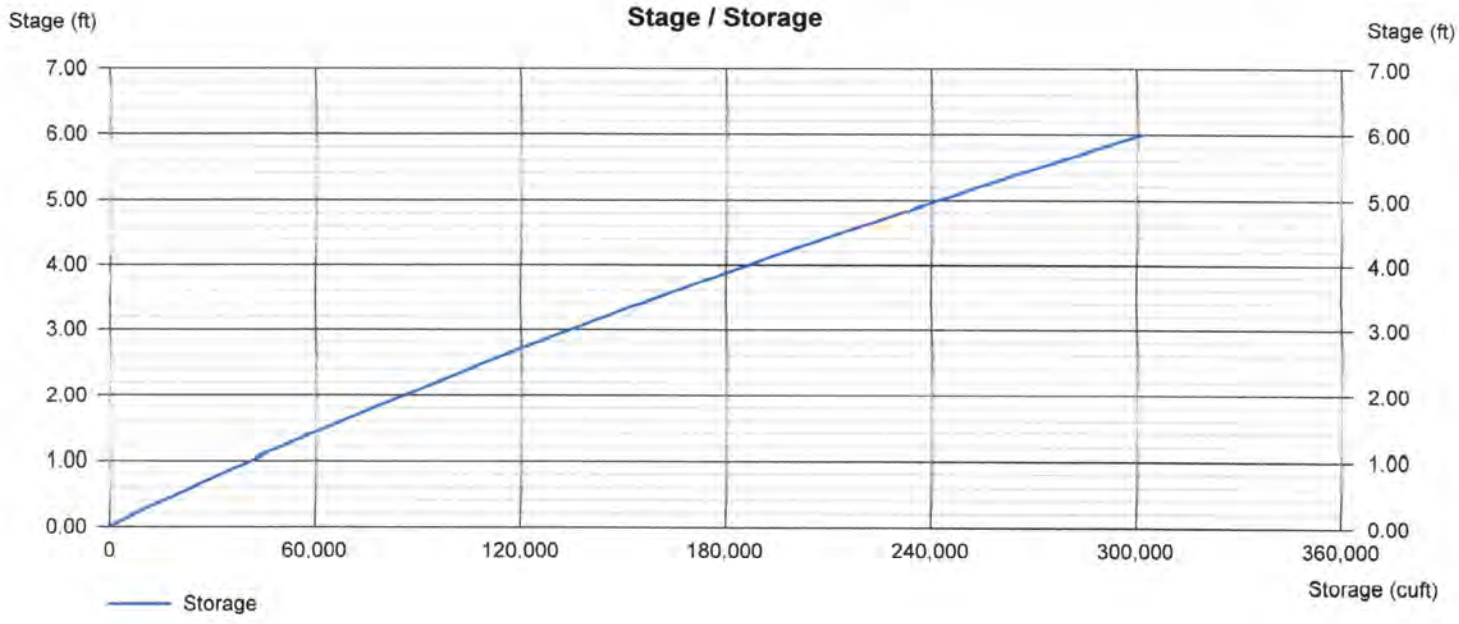
| | [A] | [B] | [C] | [D] |
|---|---|---|---|---|
| Rise (in) | = 24.00 | 0.00 | 0.00 | 0.00 |
| Span (in) | = 24.00 | 0.00 | 0.00 | 0.00 |
| No. Barrels | = 1 | 0 | 0 | 0 |
| Invert El. (ft) | = 690.00 | 0.00 | 0.00 | 0.00 |
| Length (ft) | = 60.00 | 0.00 | 0.00 | 0.00 |
| Slope (%) | = 6.50 | 0.00 | 0.00 | 0.00 |
| N-Value | = .011 | .013 | .013 | .000 |
| Orif. Coeff. | = 0.60 | 0.60 | 0.60 | 0.00 |
| Multi-Stage | = n/a | No | No | No |

**Weir Structures**

| | [A] | [B] | [C] | [D] |
|---|---|---|---|---|
| Crest Len (ft) | = 0.00 | 0.00 | 0.00 | 0.00 |
| Crest El. (ft) | = 0.00 | 0.00 | 0.00 | 0.00 |
| Weir Coeff. | = 3.33 | 0.00 | 0.00 | 0.00 |
| Weir Type | = --- | --- | --- | --- |
| Multi-Stage | = No | No | No | No |

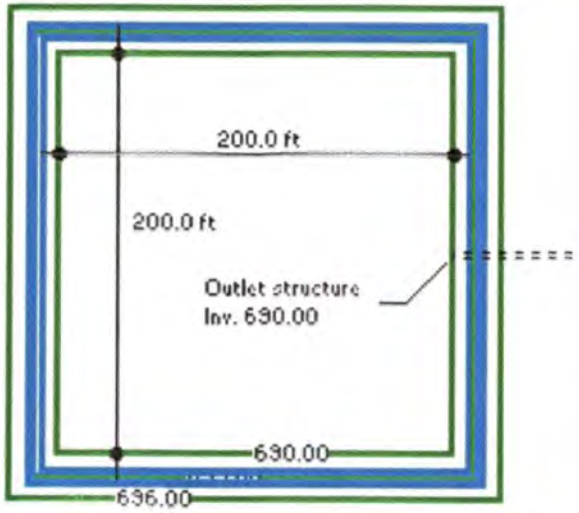
**Exfiltration =** 0.000 in/hr (Wet area)  Tailwater Elev. = 0.00 ft

Note: Culvert/Orifice outflows have been analyzed under inlet and outlet control.



# APPENDIX E
# Detention Pond Details

# New Pond1



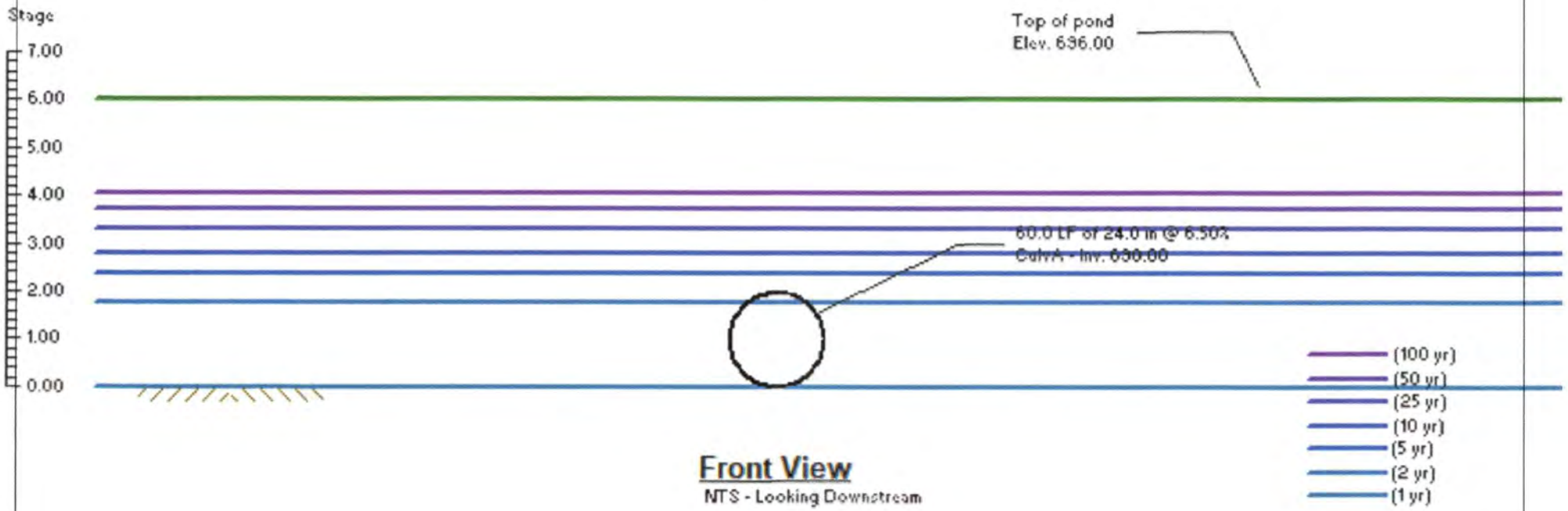

## Plan View

NTS

(100 yr)
(50 yr)
(25 yr)
(10 yr)
(5 yr)
(2 yr)
(1 yr)

Schematic only. Not for construction.

# New Pond1

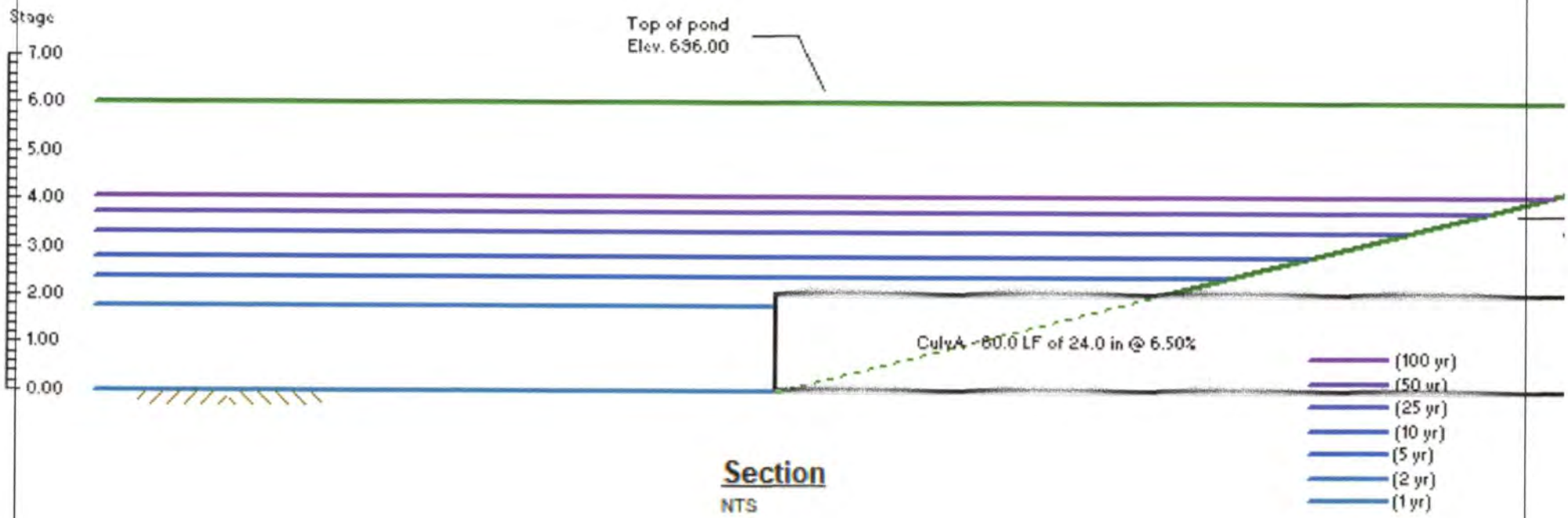



## Front View

NTS - Looking Downstream

Schematic only. Not for construction.

# New Pond1




## Section

NTS

Schematic only. Not for construction.

Appendix B

# Expanded Regulatory Setting

# ENVIRONMENTAL ASSESSMENT

## EXPANDED REGULATORY SETTING

## Bartlesville 14.993-acre Gaming and Fee-to-Trust Project

Washington County, OK | June 2024


**Prepared By:**

Acorn Environmental
5170 Golden Foothill Parkway
El Dorado Hills, CA 95762
916.235.8224
www.acorn-env.com

# Expanded Regulatory Setting

# INTRODUCTION

This appendix summarizes the framework of laws, regulations, and agreements pertaining to the Project Site and actions outlined throughout the Environmental Assessment (EA). The relevant legislation is organized by resource category, and while most regulations discussed within the document are described herein, this list is not comprehensive and is limited to the primary regulations relevant to the analysis within the EA. Once taken into federal trust, it is noted that state and local laws and regulations are generally not applicable.

# LAND RESOURCES – EA SECTION 3.2

## Federal

### Clean Water Act (CWA)

The CWA prohibits sediment and erosion discharge into navigable waters of the United States and establishes water quality goals. Construction projects disturbing one or more acres of soil must be covered under the NPDES Construction General Permit process. For tribal projects on land held in trust by the federal government, the Tribe proposing the project must apply for coverage under the USEPA's NPDES Construction General Permit. A site-specific Stormwater Pollution Prevention Plan (SWPPP) is required under this permit. For more information on the CWA see **Water Resources** below.

# WATER RESOURCES – EA SECTION 3.3

## Federal

### Executive Order (EO) 11988

EO 11988 requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. Specifically, EO 11988 states that agencies shall first determine whether the proposed action will occur in a floodplain. EO 11988 defines a floodplain as an area that has a one percent or greater chance of flooding in any given year. If an agency proposes to allow an action within a floodplain, the agency must consider alternatives to avoid adverse effects and incompatible development in a floodplain. If the only practicable alternative requires siting in a floodplain, the agency must minimize potential harm to or within the floodplain.

### Clean Water Act (CWA)

The CWA (33 U.S. Code [USC] § 1251-1376), as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality. The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The U.S. Environmental Protection Agency (USEPA) is delegated as the administrative agency under the CWA. Relevant sections of the CWA are as follows.

- Sections 303 and 304 provide for water quality standards, criteria, and guidelines. Section 303(d) requires states to identify impaired off-Reservation water bodies, rank these impaired bodies based on severity of contamination and uses for the waters, and develop water quality management strategies, usually in the form of total maximum daily loads for the contaminant(s) of concern.
- Section 401 (Water Quality Certification) requires an applicant for any federal permit that proposes an activity that may result in a discharge to Waters of the U.S., to obtain certification from the USEPA for on-trust land activities, or the state for off-Reservation activities, that the discharge will comply with other provisions of the CWA.
- Section 402 establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredged or fill material) into Waters of the U.S. Each NPDES permit contains limits on concentrations of pollutants discharged to surface waters to prevent degradation of water quality and protect beneficial uses.

The Federal Antidegradation Policy was adopted as part of the 1972 amendments to the CWA. Federal policy (Code of Federal Regulations [CFR], Title 40, Part 131.12) specifies that each state must develop, adopt, and retain an anti-degradation policy to protect the minimum level of off-Reservation surface water quality necessary to support existing uses. Each state must also develop procedures to implement the anti-degradation policy through water quality management processes. Each state anti-degradation policy must include implementation methods consistent with the provisions outlined in 40 CFR § 131.12. On trust land, these issues are addressed by the USEPA.

### *General NPDES Permit for Construction*

In 1990, an amendment to the CWA directed the NPDES permitting program to address non-point source pollution from construction activities. Construction activities include clearing, grading, excavation, stockpiling, and reconstructing existing facilities involving removal and replacement of existing foundations or other hardscapes. Construction projects disturbing one or more acres of soil must be covered under the NPDES Construction General Permit process. For tribal projects on land held in trust by the federal government, the Tribe proposing the project must apply for coverage under the USEPA's NPDES Construction General Permit. Project proponents are required to submit to the USEPA a complete Notice of Intent (NOI) to comply with the permit. A complete NOI package consists of an NOI form, site map, and fee. The USEPA's NPDES Construction General Permit also requires the development and implementation of a SWPPP. The SWPPP contains a site map showing the construction site perimeter, existing and proposed buildings, lots and roadways, stormwater collection and discharge points, general topography both before and after construction, and drainage patterns across the site. The SWPPP must list Best Management Practices (BMP) that will be implemented during construction and operation to address stormwater runoff rates and quality. SWPPP BMPs include the following categories:

- Site planning considerations, such as preservation of existing vegetation;
- Vegetation stabilization through methods such as seeding and planting;
- Physical stabilization through use of dust control and stabilization measures;
- Diversion of runoff by utilizing earth dikes and temporary drains and swales;
- Velocity reduction through measures such as slope roughening/terracing; and
- Sediment trapping/filtering through use of silt fences, straw bales and sand bag filters, and sediment traps and basins.

### Safe Drinking Water Act

Under the mandate of the Safe Drinking Water Act, the USEPA sets legally enforceable National Primary Drinking Water Regulations (primary standards) that apply to public water systems. These standards are established to protect human health by limiting the levels of contaminants in drinking water. The USEPA also defines National Secondary Drinking Water Regulations (secondary standards) for contaminants that cause cosmetic and aesthetic effects, but not for health effects. The USEPA recommends that these secondary standards be met but does not require systems to comply with them.

The USEPA does not oversee the construction and permitting of groundwater wells, but requires that public health standards, such as an effectively installed sanitary seal, are in place. The USEPA will also primarily establish monitoring and operational requirements, which will typically be specific to the project area. Both primary and secondary drinking water standards are expressed as either Maximum Contaminant Levels, which define the highest level of a contaminant allowed in drinking water, or Maximum Contaminant Level Goals, which define the level of a contaminant below which there is no known or expected risk to health. Monitoring requirements typically include total coliform, nitrate, inorganic chemicals, volatile organic chemicals, non-volatile synthetic organic chemicals, secondary drinking water standard constituents, and general chemistry (including alkalinity, hardness, and minerals). The frequency of sampling varies and may be reduced over time.

### Federal Emergency Management Agency

The Disaster Relief Act of 1974 as amended by the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 created the Federal Emergency Management Agency (FEMA), which is responsible for determining flood elevations and floodplain boundaries based on U.S. Army Corps of Engineers (USACE) studies. FEMA is also responsible for distributing Flood Insurance Rate Maps, which are used in the National Flood Insurance Program. These maps identify the locations of special flood hazard areas, including 100-year floodplains.

## State and Local

### Oklahoma Comprehensive Water Plan

The Oklahoma Comprehensive Water Plan divides the state into 13 planning areas by watershed to identify water demands, water supply reliability, and supply solutions where reliability analysis determines a gap is possible. The Project Site falls within the Middle Arkansas planning area. The Middle Arkansas Watershed Planning Region Report was completed in 2012 and analyzes water demand and availability through the year 2060.

### Oklahoma State Statute

Title 27A of the Oklahoma State Statute provides for the creation of state departments and designation of authority for such departments for the preservation of environmental quality in the state. This includes licensing requirements for activities and management actions related to hazardous waste use, air pollution management, water quality maintenance, aquifer recovery, and more. This title is often referred to as the Oklahoma Environmental Quality Act. Title 82 is specifically related to waters and water rights, primarily around domestic use of water, diversion of water, and dam management, but also addresses more general actions such as littering, authorizations of agencies to assist in water quality management, and preservation of scenic rivers.

## Tribal

### Cherokee Nation Tribal Code

The Cherokee Nation Tribal Code contains policies associated with protecting potable water, water quality, and waters of the Nation. § 5. Protection of the Environment, Public Health, and Safety requires gaming facilities licensed by the Gaming Commission to be constructed, maintained, and operated in a manner that adequately protects the human environment and the health and safety of the public.

# AIR QUALITY – EA SECTION 3.4

## Federal

### Clean Air Act (CAA) of 1970

The CAA (42 USC Chapter 85) is the federal legislation for the protection of air quality. The CAA gives the USEPA authority to regulate air quality by promulgating standards and levels for air quality and enforcing those standards and levels on federal, state, and tribal land. The CAA requires the USEPA to regulate hazardous air pollutants, which are those pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects. The CAA of 1970, as amended, establishes air quality standards for several critical air pollutants (CAPs): ozone ($O_3$), carbon monoxide (CO), particulate matter (PM), nitrogen dioxide ($NO_2$), sulfur dioxide ($SO_2$), and lead (Pb). These pollutants are termed "criteria" pollutants because the USEPA has established specific concentration threshold criteria based upon specific medical evidence of health effects or visibility reduction, soiling, nuisance, and other forms of damage. These National Ambient Air Quality Standards (NAAQS) are divided into primary standards and secondary standards. Primary standards are designed to protect the public health and secondary standards are intended to protect the public welfare from effects such as visibility reduction, soiling, nuisance, and other forms of damage. NAAQS are shown in **Table 1.**

Areas are designated attainment, nonattainment, or maintenance by the USEPA depending on whether the area is below or exceed the established NAAQS. Nonattainment areas must take steps towards attainment within a specific period of time. Once an area reaches attainment for particular criteria pollutant, then the area is re-designated attainment or maintenance. The CAA places most of the responsibility on states to achieve compliance with the NAAQS. States, municipal statistical areas, and counties that contain areas of nonattainment are required to develop a State Implementation Plan (SIP), which outlines policies and procedures designed to bring the state into compliance with the NAAQS.

#### *Ozone*

Photochemical reactions involving reactive organic gases (ROG)/volatile organic compounds (VOC) and nitrogen oxides ($NO_X$) resulting from the incomplete combustion of fossil fuels are the largest source of ground-level $O_3$. Because photochemical reaction rates depend on the intensity of ultraviolet light and air temperature, $O_3$ is primarily a summer air pollution problem. As a photochemical pollutant, $O_3$ is formed only during daylight hours under appropriate conditions. However, it is destroyed throughout the day and night. $O_3$ is considered a regional pollutant as the reactions forming it take place over time and are often most noticeable downwind from the sources of the emissions.

**Table 1: Ambient Air Quality Standards**

| Pollutant | Averaging Time | Standard (parts per million) | Standard (microgram per cubic meter) | Violation Criteria |
|---|---|---|---|---|
| $O_3$ | 8 hours | 0.070 | 137 | If exceeded on more than 3 days in 3 years |
| CO | 8 hours | 9 | 10,000 | If exceeded on more than 1 day per year |
| | 1 hour | 35 | 40,000 | If exceeded on more than 1 day per year |
| $NO_2$ | Annual arithmetic mean | 0.053 | 100 | If exceeded |
| | 1 hour | 0.100 | 188 | N/A |
| $SO_2$ | Annual arithmetic mean | 0.030 | 79 | If exceeded |
| | 24 hours | 0.14 | N/A | If exceeded on more than 1 day per year |
| | 1 hour (primary) | 197 | 196 | N/A |
| | 3 hours (secondary) | 0.5 | N/A | If exceeded on more than 1 day per year |
| $PM_{10}$ | 24 hours | N/A | 150 | If exceeded on more than 1 day per year |
| $PM_{2.5}$ | Annual arithmetic mean (primary) | N/A | 12 | If exceeded |
| | Annual arithmetic mean (secondary) | N/A | 15 | If exceeded |
| | 24 hours | N/A | 35 | If exceeded on more than 1 day per year |
| Lead | Rolling 3-month Avg. | N/A | 0.15 | If exceeded |
| $H_2S$ | 30-minutes | No Federal Standard | No Federal Standard | N/A |

Source: USEPA, 2024a

### *Particulate Matter 2.5*

Particle pollution is a mixture of microscopic solids and liquid droplets suspended in air. This pollution, also known as $PM_{2.5}$, is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, soil or dust particles, and allergens (such as fragments of pollen or mold spores). The size of particles is directly linked to their potential for causing health problems. Particles smaller than 2.5 µm pose the greatest problems because they can be inhaled deep into the lungs. Exposure to such particles can affect respiratory system function.

### *Carbon Monoxide*

CO is not readily dispersed throughout the atmosphere; therefore, it is considered a localized air quality issue as it is close to the emission source. CO emissions generally cause an acute (short-term) health threat. CO is a pollutant of concern at major signalized intersections (greater than 100,000 vehicles per day) that exhibit prolonged vehicle idling times.

### *Hazardous Air Pollutants*

In addition to the above-listed CAPs, Hazardous Air Pollutants (HAP) are a group of chemical pollutants which can cause adverse effects to human health and/or the environment. HAPs are a list of over 188 airborne chemicals developed by the USEPA.

Sources of HAPs include industrial processes, such as petroleum refining and chrome plating operations; commercial operations, such as gasoline stations and dry cleaners; cigarette smoke; and motor vehicle exhaust. Cars and trucks release at least 40 different HAPs. The most important, in terms of health risk, are diesel particulate matter (DPM), benzene, formaldehyde, 1,3-butadiene, and acetaldehyde. Health effects of HAPs can include cancer, birth defects, and neurological damage.

HAPs are less pervasive in the urban atmosphere than CAPs but are linked to short-term (acute) or long-term (chronic or carcinogenic) human health effects. The majority of health risks from HAPs can be attributed to relatively few compounds. The most important HAPs are found in DPM. Diesel engines emit a complex mixture of air pollutants composed of gaseous and solid material. Diesel exhaust contains a variety of harmful gases and over 40 other cancer-causing substances, and the visible emissions in diesel exhaust are PM that includes carbon particles or "soot." Exposure to DPM is a health hazard, particularly to children whose lungs are developing and the elderly who may have serious health problems.

### *Federal General Conformity*

The General Conformity Rule was established to determine conformity of a federal action to the applicable SIPs (42 USC § 7401). The federal agency makes a determination whether the federal action conforms to the applicable SIP before the federal action is implemented. A conformity determination is required for each criteria pollutant if project-related emissions would occur in a nonattainment or maintenance area, if the project is not exempt, and if project-related emissions would exceed the de minimis thresholds set forth in 40 CFR Part 51. The State of Oklahoma is in conformance with all NAAQS; therefore, no conformity determination is required (USEPA, 2024b).

### *Federal Class I Areas*

Title 1, Part C of the CAA was established in part to preserve, protect, and enhance the air quality in national parks, national wilderness areas, national monuments, national seashores, and other areas of special national or regional natural, recreational, scenic, or historic value. The CAA designates all international parks, national wilderness areas, and memorial parks larger than 5,000 acres and national parks larger than 6,000 acres as "Class I areas." The CAA prevents significant deterioration of air quality in Class I areas under the Prevention of Significant Deterioration (PSD) Program. The PSD Program protects Class I areas by allowing only a small increment of air quality deterioration in these areas by requiring assessment of potential impacts on air quality related values of Class I areas.

Any major source of emissions within 100 kilometers (62.1 miles) from a federal Class I area is required to conduct a pre-construction review of air quality impacts on the area(s). A "major source" for the PSD Program is defined as a facility that will emit (from direct stationary sources) 250 tons per year (tpy) of regulated pollutant. For certain industries, these requirements apply to facilities that emit (through direct stationary sources) 100 tpy or more of a regulated pollutant. Mobile sources (e.g., vehicle emissions) are by definition not stationary sources and are therefore not subject to the PSD program. The nearest Class I area is Upper Buffalo Wilderness Area in Arkansas, approximately 166 miles from the Project Site.

### *Tribal New Source Review*

The Tribal Minor New Source Review (NSR) permitting program was established by the USEPA under the CAA. The minor NSR program applies to both new minor sources and minor modifications to both major and minor projects in attainment and nonattainment areas. A General Permit under the minor NSR program would be required on trust land if stationary source allowable emissions of regulated pollutants would exceed the thresholds presented in 40 CFR 49.153 (**Table 2**).

**Table 2: Tribal Minor New Source Review Thresholds**

| Pollutant | Emissions Thresholds for Nonattainment Areas (tpy) | Emissions Thresholds for Attainment Areas (tpy) |
|---|---|---|
| NOx | 5 | 10 |
| ROG | 2 | 5 |
| PM | 5 | 10 |
| $PM_{10}$ | 1 | 5 |
| $PM_{2.5}$ | 0.6 | 3 |
| CO | 5 | 10 |
| $SO_2$ | 5 | 10 |
| Pb | 0.1 | 0.1 |

Source: 40 CFR 49.153.

This General Permit serves as a preconstruction permit containing limitations and other restrictions specifying the construction, modification, and operation of a minor source. The applicability of Tribal NSR is made on a source's potential to emit (PTE). For emergency generators, the USEPA has determined that 500 hours per year should be assumed as a reasonable and realistic "worst-case" estimate on a PTE basis (USEPA, 1995).

## NEPA **Guidance on Consideration of Greenhouse Gas Emissions and Climate Change (2023)**

On February 19, 2021, Secretary of the Interior Deb Haaland issued Secretarial Order (SO) 3399 to prioritize action on climate change throughout the Department and to restore transparency and integrity in the Department's decision-making processes. SO 3399 specifies that when considering the impact of GHG emissions from a proposed action, Bureaus/Offices should use appropriate tools, methodologies, and resources available to quantify GHG emissions and compare GHG quantities across alternatives.

SO 3399 acknowledges that identifying the interactions between climate change and the environmental impacts of a proposed action in NEPA documents can help decision makers identify opportunities to reduce GHG emissions, improve environmental outcomes, and contribute to protecting communities from the climate crisis. On January 9, 2023, the Council on Environmental Quality issued National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change (88 Fed. Reg. 1196). This interim guidance directs agencies to consider the potential effects of a proposed action on climate change and the effects of climate change on a proposed action and its environmental impacts. CEQ recommends that agencies quantify a proposed action's projected GHG emissions for the expected lifetime of the action and provide additional context for GHG emissions, including the use of the best available social cost of GHG (SC–GHG) estimates, to translate climate impacts into the more accessible metric of dollars.

This guidance does not propose a specific, quantitative threshold of significance; however, it states that agencies should consider the potential for mitigation measures to reduce or mitigate GHG emissions and climate change effects when those measures are reasonable and consistent with achieving the purpose and need for the proposed action. CEQ recommends that agencies explain how the proposed action and alternatives would help meet or detract from achieving relevant climate action goals and commitments, including federal goals, international agreements, state or regional goals, Tribal goals, agency-specific goals, or others as appropriate.

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## State

### Oklahoma Clean Air Act

The Oklahoma Department of Environmental Quality (DEQ) has primary responsibility and authority to prepare and implement Oklahoma's air quality management plan under the Oklahoma Environmental Quality Act and the Oklahoma Clean Air Act (27A O.S. §§ 2-1-101 et seq.). The USEPA has authorized the Air Quality Division of DEQ to implement and enforce most of the federal CAA programs under state statutes and rules.

## Tribal

### Cherokee Nation Tribal Code

The Cherokee Nation Tribal Code contains policies associated with protecting air quality and monitoring and reducing emissions.

### Low or No Emissions Program

The Federal Transit Administration (FTA) provides financial and technical assistance to public transportation systems, including competitive grant funding opportunities for the purchase of low or no emission vehicles and related supply equipment.

Subsequently, the Office of the Secretary established appropriate partnerships and designed a program plan in conjunction with the Cherokee Nation Roads Department. In 2018, the FTA listed Cherokee Nation as an approved funding recipient. The Cherokee Nation Low or No emissions program focuses on connecting rural Cherokee citizens to jobs in urban locations via clean energy transit options. The program supports long-term sustainability goals and maximizes funding opportunities.

### Volkswagen Mitigation Plan

In 2016, the United States reached a settlement with companies collectively known as “Volkswagen” (VW) to resolve allegations that VW knowingly enabled automobiles to emit pollutants that far exceeded what is allowable under U.S. emissions standards, thereby violating the Clean Air Act. As a result, a mitigation trust account was established for federally recognized Tribes to reduce nitrous oxide emissions through approved mitigation plans. Cherokee Nation has designed a multiple-year mitigation program and was officially designated as an approved beneficiary in 2018. The mitigation plan focuses on replacing specific classes of diesel-powered vehicles with zero-emission electric-powered vehicles and installing supporting infrastructure in iconic locations.

# BIOLOGICAL RESOURCES – EA SECTION 3.5

## Federal

### Federal Endangered Species Act

The Federal Endangered Species Act (FESA) protects species that are at risk of extinction and provides for the conservation of the ecosystems on which they depend. The U.S. Fish & Wildlife Service (USFWS) and the National Oceanic and Atmosphere Administration, Fisheries Service (NOAA Fisheries) share responsibility for implementing FESA. Generally, USFWS manages terrestrial and freshwater species, while NOAA Fisheries is responsible for marine and anadromous species. Threatened and endangered species on the federal list (50 CFR Sections 17.11 and 17.12) are protected from take, which is defined as direct or indirect harm. If "take" of a listed species is incidental to an otherwise lawful activity, this triggers the need for consultation under Section 7 of the FESA for federal agencies. Pursuant to the requirements of the FESA, a federal agency reviewing a proposed project within its jurisdiction must determine whether any federally listed species may be present on the proposed project site and whether the proposed project will have a potentially significant impact upon such species. Under the FESA, habitat loss is considered to be an impact to the species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species that is proposed for listing under the FESA or to result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC Section 1536[3], [4]). Therefore, project-related impacts to these species, or their habitats, would be considered significant.

### Migratory Bird Treaty Act

Migratory birds are protected under the federal Migratory Bird Treaty Act (MBTA) of 1918 (16 USC 703-711). The MBTA makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed under 50 CFR 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). The direct injury or death of a migratory bird due to construction activities or other construction-related disturbance that causes nest abandonment, nestling abandonment, or forced fledging would be considered take under federal law. As such, project-related disturbances must be reduced or eliminated during the nesting season.

### Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act was originally enacted in 1940 to protect bald eagles and was later amended to include golden eagles (16 USC Subsection 668-668). This act prohibits take, possession, and commerce of bald and golden eagles and associated parts, feathers, nests, or eggs with limited exceptions. The definition of take is the same as the definition under the FESA. The USFWS established five recovery programs in the mid-1970s based on geographical distribution of the species. Critical habitat was not designated by regulation under FESA. In 1995, the USFWS reclassified the bald eagle from endangered to threatened under FESA in the contiguous 48 states, excluding Michigan, Minnesota, Wisconsin, Oregon, and Washington, where it had already been listed as threatened. In 2007, the bald eagle was federally delisted under FESA. However, the provisions of the act remain in place for protection of bald and golden eagles.

### Clean Water Act (CWA) Sections 404 and 401

Any project that involves discharge of dredged or fill material into jurisdictional Waters of the U.S. must first obtain authorization from the USACE, under Section 404 of the CWA. Projects requiring a 404 permit under the CWA also require a Section 401 certification from either the USEPA for trust land, or the RWQCB for non-trust land. These two agencies also administer the NPDES general permits for construction activities disturbing one acre or more.

Effective September 8, 2023, the USEPA and the USACE have issued a new final rule in the Code of Federal Regulations to conform the definition of 'waters of the United States' to the 2023 Supreme Court's May 25, 2023 decision in Sackett vs. EPA. Under the new final rule, tributaries and wetlands must have a continuous surface connection to navigable waterways to be considered jurisdictional under the Clean Water Act. Only those relatively permanent, standing, or continuously flowing bodies of water meet the current definition. In certain states where litigation regarding this definition is ongoing, the pre-2015 definition of waters of the U.S. is in effect. Oklahoma is one of these states and currently employs the pre-2015 regulatory regime and definition.

## State and Local

### Oklahoma Endangered and Threatened Species

Oklahoma statute Title 29 (Game and Fish) §29-5-412 prohibits take of threatened or endangered species. This includes to "possess, hunt, chase, harass, capture, shoot at, wound or kill, take or attempt to take, trap or attempt to trap" any of these species. The Oklahoma Department of Wildlife Conservation (ODWC) maintains a list of those species that are not protected under the FESA but that the state recognizes as threatened or endangered.

# CULTURAL RESOURCES – EA SECTION 3.6

### National Historic Preservation Act (NHPA)

Section 106 of the National Historic Preservation Act (NHPA), as amended, and its implementing regulations found in 36 CFR Part 800 require federal agencies to identify cultural resources that may be affected by actions involving federal lands, funds, or permitting. The BIA must comply with Section 106 for the proposed trust acquisition.

The significance of the resources must be evaluated using established criteria outlined in 36 CFR 60.4, as described below. If a resource is determined to be a historic property, Section 106 of the NHPA requires that effects of the federal undertaking on the resource be determined. A historic property is defined as:

> *…any prehistoric or historic district, site, building, structure or object included in, or eligible for inclusion in the National Register of Historic Places, including artifacts, records, and material remains related to such a property… (NHPA Sec. 301[5])*

Section 106 of the NHPA prescribes specific criteria for determining whether a project would adversely affect a historic property, as defined in 36 CFR 800.5. An impact is considered adverse when prehistoric or historic archaeological sites, structures, or objects that are listed on or eligible for listing in the National Register of Historic Places (NRHP) are subjected to the following:

- Physical destruction of or damage to all or part of the property;
- Alteration of a property;
- Removal of the property from its historic location;
- Change of the character of the property's use or of physical features within the property's setting that contribute to its historic significance;
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features;
- Neglect of a property that causes its deterioration; and
- Transfer, lease, or sale of the property out of federal control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance.

If the historic property will be adversely affected by the undertaking, then prudent and feasible measures to resolve adverse impacts must be taken. The State Historic Preservation Office must be provided an opportunity to review and comment on these measures prior to project implementation.

## Archaeological Resources Protection Act

The Archaeological Resources Protection Act of 1979 (Public Law 96-95; 16 USC 470aa-mm) provides for the protection of archaeological resources and sites that are on public and Indian lands and fosters increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data that were obtained before October 31, 1979. The act also provides for penalties for noncompliance and illegal trafficking.

## Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA), 25 USC 3001 et seq., provides a process for museums and federal agencies to return Native American cultural items – human remains, funerary objects, sacred objects, or objects of cultural patrimony – to lineal descendants, and culturally affiliated Indian tribes and Native Hawaiian organizations. NAGPRA includes provisions for unclaimed and culturally unidentifiable Native American cultural items, intentional and inadvertent discovery of Native American cultural items on federal and Tribal lands, and penalties for noncompliance and illegal trafficking.

## State and Local

### Oklahoma Historical Society

State Office of Historic Preservation is a compilation of State statutes and regulations that govern the identification, designation, and protection of the State of Oklahoma's significant historical resources. There missions is to collect, preserve, and share the history and culture of the state of Oklahoma and its people.

# SOCIOECONOMIC CONDITIONS AND ENVIRONMENTAL JUSTICE– EA SECTION 3.7

## Federal

### Executive Order 12898

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, as amended, directs federal agencies to develop an Environmental Justice Strategy that identifies and addresses disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations. The CEQ has oversight responsibility of the federal government's compliance with EO 12898 and NEPA. The CEQ, in consultation with the USEPA and other agencies, has developed guidance to assist federal agencies with their NEPA procedures so that environmental justice concerns are effectively identified and addressed. The document *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses* provides the following direction on how to analyze the impacts of actions on low-income and minority populations:

> *Under NEPA, the identification of a disproportionately high and adverse human health or environmental effect on a low-income population, minority population, or Indian tribe does not preclude a proposed agency action from going forward, nor does it necessarily compel a conclusion that a proposed action is environmentally unsatisfactory. Rather, the identification of such an effect should heighten agency attention to alternatives (including alternative sites), mitigation strategies, monitoring needs, and preferences expressed by the affected community or population (USEPA, 1998).*

As previously stated, according to guidance from the CEQ (1997) and USEPA (1998), agencies should consider the composition of the affected area, to determine whether minority populations, low-income populations, or Indian tribes are present in the area affected by a proposed action and, if so, whether there may be disproportionately high and adverse environmental effects to those populations. Communities may be considered "minority" under the executive order if one of the following characteristics apply.

- The cumulative percentage of minorities within a census tract is greater than 50 percent (primary method of analysis); or
- The cumulative percentage of minorities within a census tract is less than 50 percent, but the percentage of minorities is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis (secondary method of analysis).

According to USEPA, either the county or the state can be used when considering the scope of the "general population." A definition of "meaningfully greater" is not given by the CEQ or USEPA, although the latter has noted that any affected area that has a percentage of minorities above the state's percentage is a potential minority community and any affected area with a minority percentage double that of the state's is a definite minority community under EO 12898. Communities may be considered "low-income" under the EO if one of the following characteristics applies.

- The median household income for a census tract is below the poverty line (primary method of analysis); or
- Other indications are present that indicate a low-income community is present within the census tract (secondary method of analysis).

In most cases, the primary method of analysis will suffice to determine whether a low-income community exists in the affected environment. However, when a census tract income may be just over the poverty line or where a low-income pocket within the tract appears likely, the secondary method of analysis may be warranted. Other indications of a low-income community under the secondary method of analysis include presence of households whose income is less than or equal to 200% of the poverty level.

### Executive Order 14096

EO 14096, issued in April of 2023, amends and expands certain provisions of EO 12898, and includes the following:

- Provides a broader definition of potentially disadvantaged communities.
- Explicitly expands definition of potentially disadvantaged communities to include persons with a Tribal affiliation and disabled persons;
- Requires Federal Agencies to fulfill environmental justice reporting requirements and prepare strategic plans; and
- Describes additional reporting and notification requirements related to toxic spills.

## State and Local

No regulations applicable to the development of the Project Site were identified during the socioeconomic conditions and environmental justice analysis.

# TRANSPORTATION AND CIRCULATION – EA SECTION 3.8

## Federal

### Department of Transportation (DOT)

The mission of the DOT is to ensure a fast, safe, efficient, accessible, and convenient transportation system that meets national interests and enhances quality of life. Organizations within the DOT include the Federal Highway Administration (FHWA), the Federal Aviation Administration, the National Highway Traffic Safety Administration, the Federal Transit Administration, the Federal Railroad Administration, and the Maritime Administration. The FHWA supports State and local governments in the design, construction, and maintenance of the Nation's highway system (Federal Aid Highway Program) and various federally and tribal owned lands (Federal Lands Highway Program).

Through financial and technical assistance to State and local governments, the Federal Highway Administration is responsible for ensuring that America's roads and highways continue to be among the safest and most technologically sound in the world. US-75 is a federal highway within the vicinity of the Project Site.

## State and Local

### Oklahoma Department of Transportation (ODOT)

ODOT is responsible for the construction and maintenance of the state's transportation infrastructure. ODOT conducts annual traffic counts on roadways within their jurisdiction. Additionally, the ODOT 2019 Standard Specifications for Highway Construction serves to establish minimum acceptable standards or a range for acceptable results where applicable.

### Comprehensive Land Use Plan for the Bartlesville Metropolitan Area

Part V of the Comprehensive Land Use Plan for the Bartlesville Metropolitan Area presents standards and principles for the physical development of the community, including a Trafficway Plan for the metropolitan area.

## Tribal

### Cherokee Nation Department of Transportation

The Department of Transportation (DOT) implements and supports cooperative road and bridge projects within the reservation of the Cherokee Nation by coordinating at the county, state, and federal levels as well as community involvement.

# LAND USE – EA SECTION 3.9

## Federal

### Farmland Protection Policy Act

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that federal programs are administered in a matter that is compatible with state and local units of government, and private programs and policies to protect farmland (7 U.S.C. § 4201). The Natural Resource Conservation Service (NRCS) is responsible for the implementation of the FPPA and categorizes farmland in a number of ways. These categories include prime farmland, farmland of statewide importance, and unique farmland. Prime farmland is considered to have the best possible features to sustain long-term productivity. Farmland of statewide importance includes farmland similar to prime farmland, but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Unique farmland is characterized by inferior soils and, depending on climate, generally needs irrigation. The NRCS fulfills the directives of the Soil and Water Conservation Act (16 USC § 2001-2009) by identifying significant areas of concern for the protection of national resources. NRCS uses a land evaluation and site assessment system to establish a Farmland Conversion Impact Rating (FCIR) score. The FCIR is completed on form AD-1006. The FCIR form has two components: land evaluation, which rates soil quality up to 100 points, and the site assessment, which measures other factors that affect the property's viability up to 160 points.

The total FCIR score is used as an indicator for the project's sponsor to consider alternative sites if the potential adverse impacts on the farmland exceed the allowable level; however, the FPPA does not require federal agencies to alter projects to avoid or minimize farmland conversion. Sites receiving a combined score of less than 160 (out of 260 possible points) do not require further evaluation. For sites with a combined score greater than 160 points, at least two other alternatives are required to be considered and the alternative with the lowest number of points selected unless there are other overriding considerations.

### Federal Aviation Regulation

In accordance with 14 CFR 77, which provides requirements, standards, and processes for determining obstructions to air navigation, the Federal Aviation Administration's (FAA's) primary objective is to promote air safety and the efficient use of the navigable airspace. In furthering this mission, the FAA conducts aeronautical studies based on information provided on FAA Form 7460-1, Notice of Proposed Construction or Alteration, by proponents of construction or development in the vicinity of airports. Developers must file Form 7460-1 with the FAA at least 45 days prior to construction if any of the following parameters are met:

- Proposed structures will exceed 200 feet above ground level;
- Proposed structures will be in proximity to an airport and will exceed the slope ratio;
- Proposed structures involves construction of a traverseway (i.e., highway, railroad, waterway, etc.) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b);
- Proposed structures will emit frequencies, and do/does not meet the conditions of the FAA Colocation Policy;
- Proposed structures will be in an instrument approach area and might exceed part 77 Subpart C;
- Proposed structures will be in proximity to a navigation facility and may impact the assurance of navigation signal reception;
- Proposed structures will be on an airport or heliport; or
- Filing has been requested by the FAA.

# PUBLIC SERVICES AND UTILITIES – EA SECTION 3.10

## Federal

### Safe Drinking Water Act and Clean Water Act

See **Water Resources** above.

## State and Local

### Oklahoma Public Utilities Division

The Oklahoma Public Utility Division is a division of the Oklahoma Corporation Commission that works to ensure safe, reliable, and fair utility service. It administers and enforces federal law, state statutes, agency rules, and orders involving service providers in several areas, including electricity, gas, water, cotton gin, and telecommunications. The Oklahoma Public Utility Division also oversees the Oklahoma Universal Service Fund, which assists in providing special services to Oklahoma's schools and medical facilities, and it reviews applications for new carriers that wish to offer certain services within the state.

Furthermore, the Consumer Services Group, part of the Oklahoma Public Utility Division, serves as the Corporation Commission's liaison to the public on utility regulatory issues. This group investigates and mediates regulated public utility and some telecommunications complaints and conducts field safety enforcement related to some regulated utility service quality problems.

## Tribal

### Cherokee Nation Tribal Code

The Cherokee Nation Tribal Code contains policies associated with law enforcement, fire protection, utilities, and solid waste management. § 5. Protection of the Environment, Public Health, and Safety requires gaming facilities licensed by the Gaming Commission to be constructed, maintained, and operated in a manner that adequately protects the human environment and the health and safety of the public.

# NOISE – EA SECTION 3.11

## Federal

### Federal Highway Administration (FHWA) Noise Abatement Criteria

FHWA provides construction noise level thresholds in its Construction Noise Handbook, 2006. These are provided in **Table 4**.

**Table 4: Federal Construction Noise Thresholds**

| Noise Receptor Locations and Land Uses | Daytime dBA, Leq (7 am - 6 pm) | Evening dBA, Leq (6 pm - 10 pm) | Nighttime dBA, Leq (10 pm - 7 am) |
|---|---|---|---|
| Noise-Sensitive Locations (residences, institutions, hotels) | 78 or Baseline +5 (whichever is louder) | Baseline + 5 | Baseline + 5 (if Baseline < 70) or Baseline + 3 (if Baseline > 70) |
| Commercial Areas (businesses, offices, stores) | 83 or Baseline + 5 | None | None |
| Industrial Areas (factories, plants) | 88 or Baseline + 5 | None | None |

Operational noise standards used in this study are FHWA Noise Abatement Criteria (NAC) for the assessment of noise consequences related to surface traffic and other project-related noise sources. These standards are discussed below. The FHWA establishes NAC for various land uses that have been categorized based upon activity. Land uses are categorized on the basis of their sensitivity to noise as indicated in **Table 5**. The FHWA NAC is based on peak traffic hour noise levels. Sensitive receptors with the potential to be impacted by the project alternatives primarily consist of residential land uses; thus, the Category B noise standard (67 dBA $L_{eq}$) would apply to those uses.

### Federal Transit Administration Transit Noise and Vibration Impact Assessment Manual

Peak particle velocity (PPV) is often used to measure vibration. PPV is the maximum instantaneous peak (inches per second) of the vibration signal. The PPV levels are used to estimate $L_v$ or VdB levels (vibration decibels with a reference velocity of one micro-inch per second). Scientific studies have shown that human responses to vibration vary by the source of vibration, which is either continuous or transient.

**Table 5: Federal Noise Abatement Criteria Hourly A-Weighted Sound Level Decibels**

| Activity Category | Activity Criteria Leq (h), dBA | Evaluation Location | Activity Category Description |
|---|---|---|---|
| A | 57 | Exterior | Land on which serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose |
| B | 67 | Exterior | Residential |
| C | 67 | Exterior | Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, daycare centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, tv studios, and trails |
| D | 52 | Interior | Auditoriums, daycare centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or non-profit institutional structures, radio studios, recording studios, schools, and television studios |
| E | 72 | Exterior | Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F |
| F | -- | -- | Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, shipyards, utilities (water resources, water treatment, electricity), and warehousing |
| G | -- | -- | Undeveloped lands that are not permitted |

Continuous sources of vibration include construction while transient sources include truck movements. Generally, the thresholds of perception and annoyance are higher for transient sources than for continuous sources. **Table 6** summarizes the Federal Transportation Administration's (FTA) guideline vibration damage criteria for various structural categories.

**Table 6: Construction Vibration Damage Criteria**

| Building Category | Approximate PPV (in/sec) | Approximate Lv (VdB) |
|---|---|---|
| Reinforced-concrete, steel, or timber (no plaster) | 0.5 | 102 |
| Engineered concrete and masonry (no plaster) | 0.3 | 98 |
| Non-engineered timber and masonry buildings | 0.2 | 94 |
| Buildings extremely susceptible to vibration damage | 0.12 | 90 |

As shown therein, buildings extremely susceptible to vibration damage could be damaged if vibration levels exceed 90 VdB. Additionally, although humans have a perceptibility threshold of 65 VdB, human response to vibration is not usually significant unless the vibration exceeds 70 VdB (FHWA, 2006). Background vibration velocity in residential areas is usually 50 VdB or lower.

# State and Local

## Bartlesville Municipal Code

The Bartlesville Municipal Code contains the codes and ordinances that govern the City of Bartlesville. The code consists of 20 chapters pertaining to all facets of city government, including finance, public safety, traffic and vehicle ordinances, restrictions and allowances at city parks, lakes and facilities, and building regulations. The Municipal Code contains several provisions related to noise with examples listed below:

- Section 12-94 sites that it is unlawful for any person to willfully or maliciously disturb the peace and quiet of the city, family, or person by loud or unusual noise. Furthermore, it also describes that it is unlawful to allow unusual noises, dogs barking/howling, and profane or threatening language.
- Section 19-334 deals with disturbing the peace with music from vehicles.

# Fundamentals of Sound, Effects of Noise, and Vibration Characteristics

## Fundamentals of Sound

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second or Hertz (Hz). Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected, or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers, and therefore, to avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals) as a point of reference, which is defined as 0 dB (decibels) at this threshold. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness. Since the decibel scale is logarithmic, not linear, two sound levels 10-dB apart differ in acoustic energy by a factor of 10.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (dBA) and the way the human ear perceives sound. When the standard logarithmic decibel is A-weighted, an increase of 10-dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool is the average, or equivalent, sound level ($L_{eq}$), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The $L_{eq}$ is the foundation of the composite noise descriptor, $L_{dn}$, and shows very good correlation with community response to noise.

The day/night average level (DNL or $L_{dn}$) is based upon the average noise level over a 24-hour day, with a +10-decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because $L_{dn}$ represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

## Effects of Noise

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction.
- Interference with activities such as speech, sleep, and learning.
- Physiological effects such as hearing loss or sudden startling.

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise. Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level.

In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. Regarding increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1-dBA cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness and can cause an adverse response.

Stationary point sources of noise—including stationary mobile sources such as idling vehicles—attenuate (lessen) at a rate of approximately 6-dB per doubling of distance from the source, depending on environmental conditions (i.e., atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

## Vibration Characteristics

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, amplitude and frequency of the source, and the response of the system that is vibrating. Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second.

Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities. Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. A threshold of 0.20 inches/second PVV is considered to be a reasonable threshold for short-term construction projects.

# HAZARDOUS MATERIALS – EA SECTION 3.12

## Federal

### Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) regulates the land disposal of hazardous materials from cradle-to-grave. This means establishing a regulatory framework for the generation, transport, treatment, storage and disposal of hazardous waste. Specifically, Subtitle D of RCRA pertains to non-hazardous solid waste and Subtitle C focuses on hazardous solid waste. A solid waste can consist of solids, liquids and gases, but these must be discarded in order to be considered waste. Additionally, the USEPA has developed regulations to set minimum national technical standards for how disposal facilities should be designed and operated. States issue permits to ensure compliance with USEPA and state regulations. The regulated community is comprised of a diverse group that must comprehend and adhere to RCRA regulations. These groups can consist of hazardous waste generators, government agencies, small businesses, and gas stations with underground petroleum tanks.

### Food, Drug, and Cosmetic Act

Under the federal Food, Drug, and Cosmetic Act, the USEPA sets maximum residue limits, or tolerances, for pesticides residues on food. When the USEPA sets a tolerance level for a food, this is the level deemed safe. In defining safe, this means that, “reasonable certainty that no harm will result from aggregate exposure to the pesticide residue.” When determining a safety finding for a tolerance level, the USEPA considers the toxicity of the pesticide and its break-down products, aggregate exposure to the pesticide in foods and from other sources of exposure if applicable, and any special risks specific to infants and children. If a tolerance is not set for a pesticide residue, a food containing that pesticide residue will be subject to government seizure if deemed appropriate. However, once a tolerance has been established for a pesticide residue, then residue levels below the tolerance will not trigger enforcement actions. If the residue level is detected above that tolerance, then the commodity will be subject to seizure. Some pesticides do not have a set tolerance level as the USEPA may grant exemptions in the cases where the pesticide residue does not pose, under foreseeable situations, a significant dietary risk.

### Insecticide, Fungicide, and Rodenticide Act

The federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) addresses the sale, distribution, and labeling of pesticides, as well as the certification and training of pesticide applicators. FIFRA establishes recordkeeping and reporting requirements on certified applicators of restricted use pesticides. Furthermore, FIFRA imposes storage, disposal, and transportation requirements on registrants and applicants for the registration of pesticides. Pesticide use is regulated through requirements to apply pesticides in a manner consistent with the label. The labeling requirement includes directions for use, warnings, and cautions along with the uses for which the pesticide is registered (e.g., pests and appropriate applications). This includes the specific conditions for the application, mixture, and storage of the pesticide.

Additionally, the label must specify a time period for re-entry into an area after the pesticide has been applied, and when crops may be harvested after the application of the pesticide. If a pesticide is used in a manner contrary to specifics on its label, then the use constitutes a violation of the FIFRA.

## Hazardous Communication Standard

The Occupational Safety and Health Administration helps ensure employee safety by regulating the handling and use of chemicals in the workplace. For instance, it administers the Hazard Communication Standard (HCS). The HCS ensures safety in the workplace concerning chemicals through requiring information to be provided and understood by workers about the identity and hazards associated with chemicals they may work with. This also requires that chemical manufactures and importers evaluate the hazards associated with the chemicals they create or import, and that these chemicals have proper labels and material safety data sheets concerning their hazards to others (e.g., customers). Downstream of the production, employers who utilize these hazardous chemicals in their workplaces are obligated to have labels and safety data sheets for their workers and to train them on the proper handling of these chemicals.

## Hazardous Substances Act

The Consumer Product Safety Commission has a limited role in regulating hazardous substances; it primarily deals with the labeling of consumer products through the federal Hazardous Substances Act (HSA). HSA only requires products that may at some point be in the presence of people's dwellings to be labeled, including during purchase, storage, or use. These labels must alert consumers of the potential hazards that the product may pose. However, in order for a product to be required for labelling, the product must be toxic, corrosive, flammable/combustible, an irritant, a strong sensitizer, or have the ability to generate pressure through decomposition, heat, or other means. Furthermore, the product must possess the ability to cause severe personal injury or substantial illness during or as a result of a customary or reasonably predictable handling or use, including reasonably foreseeable ingestion by children.

## Toxic Substances Control Act

The federal Toxic Substances Control Act (TSCA), as amended by the Frank R. Lautenberg Chemical Safety for the 21$^{st}$ Century Act, permits the USEPA to evaluate the potential risk from novel and existing chemicals and address unacceptable risks chemicals may have on human health and the environment. The USEPA oversees the production, importation, use, and disposal of certain chemicals. This includes the USEPA having the authority to require record keeping, reporting, and test requirements and restrictions associated with certain chemical substances and/or mixtures. However, certain groups of chemicals are excluded from TSCA consideration, including—but not limited to—food, drugs, cosmetics and pesticides. Examples of chemicals included in TSCA consideration are lead paint, asbestos, mercury, formaldehyde, and polychlorinated biphenyls.

## Emergency Planning and Community Right-to-Know Act

The federal Emergency Planning and Community Right-to-Know Act (EPCRA) is designed to assist local communities protect public health, safety, and the environment from chemical hazards. The Community Right-to-Know provisions help increase the public's knowledge and access to information on chemicals at individual facilities, their uses, and releases into the environment. The EPCRA also requires industry to report on the storage, usage, and releases of hazardous substances to federal, state, and local governments, and states and communities can use the information gained to improve chemical safety and protect public health and the environment.

### National Fire Protection Association Codes and Standards

The National Fire Protection Association (NFPA) publishes more than 300 consensus codes and standards intended to minimize the possibility and effects of fire and other risks, including, but not limited to (NFPA, 2022):

- NFPA 13 Standard for the Installation of Sprinkler Systems
- NFPA 72 National Fire Alarm and Signaling Code
- NFPA 88A Standard for Parking Structures
- NFPA 1660 Standard for Emergency, Continuity, and Crisis Management: Preparedness, Response, and Recovery
- NFPA 1140 Standard for Wildland Fire Protection

### 40 CFR Part 280

40 CFR Part 280, also known as the Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST), is a part of the Electronic Code of Federal Regulations. It provides guidelines and requirements for the design, construction, operation, release detection, and corrective action for UST systems. The regulation is divided into several subparts, each addressing a specific aspect of UST management:

- Subpart A: Program Scope and Installation Requirements for Partially Excluded UST Systems
- Subpart B: UST Systems: Design, Construction, Installation, and Notification
- Subpart C: General Operating Requirements
- Subpart D: Release Detection
- Subpart E: Release Reporting, Investigation, and Confirmation
- Subpart F: Release Response and Corrective Action for UST Systems Containing Petroleum or Hazardous Substances
- Subpart G: Out-of-Service UST Systems and Closure
- Subpart H: Financial Responsibility

Each subpart contains sections that detail the requirements for that specific area. For example, Subpart C includes sections on spill and overfill control, operation and maintenance of corrosion protection, compatibility, repairs allowed, reporting and recordkeeping, periodic testing of spill prevention equipment and containment sumps used for interstitial monitoring of piping, and periodic operation and maintenance walkthrough inspections. 40 CFR Part 280 is enforced by the Environmental Protection Agency and is designed to protect the environment from potential hazards associated with UST systems.

## State and Local

### Multi-Jurisdictional Multi-Hazard Mitigation Plan Update for Washington County.

The Multi-Jurisdictional Multi-Hazard Mitigation Plan Update for Washington County adheres to the guidelines of the Hazard Mitigation Grant Program (HGMP) by FEMA and complies with the U.S. Stafford Disaster Relief and Emergency Assistance Act, overseen by Oklahoma Emergency Management (OEM). The primary objective of this strategic document is to minimize suffering and damage caused by disasters in Washington County. It achieves this by identifying and evaluating hazards that threaten residents, businesses, and property. The plan assesses mitigation measures for protection against various hazards, such as severe winter storms, high winds, floods, and wildfires, considering both general and site-specific factors.

Collaboration among officials, community members, and school representatives ensures a comprehensive approach to hazard mitigation. The plan includes a timeline for the planning process and data on natural hazard risks specific to Washington County. Aligned with FEMA and the State of Oklahoma, the overarching goal is to enhance public awareness and reduce the risk of losses from natural hazards.

## Tribal

### Cherokee Nation Tribal Code

The Cherokee Nation Tribal Code contains policies associated with protecting the environment and properly addressing hazardous materials issues. § 5. Protection of the Environment, Public Health, and Safety requires gaming facilities licensed by the Gaming Commission to be constructed, maintained, and operated in a manner that adequately protects the human environment and the health and safety of the public.

# VISUAL RESOURCES – EA SECTION 3.13

## State and Local

### Oklahoma Scenic Byways

Oklahoma Byways provide access to the state's most spectacular public lands, including three national parks, 38 state parks, two national historic trails, two national historic sites, one national memorial, and 22 national historic landmarks. There is a network of roads that have been designated as having regionally outstanding scenic, natural, recreational, cultural, historic, or archaeological significance. The program is designed by the Federal Department of Transportation, and the state level byways are designated by the State department of transportation.

### Comprehensive Land Use Plan for the Bartlesville Metropolitan Area

The Plan sets forth goals, objectives, and policy recommendations of the Bartlesville Metropolitan Area Planning Commission, the Bartlesville City Council, and the Washington County Board of Commissioners. The purpose of the plan is to bring about the orderly, coordinated, physical development of the metropolitan area in accordance with the present and future needs of the area, to conserve the natural resources in the area, to ensure efficient expenditure of public funds, and to promote the health, safety, convenience, prosperity, and general welfare of the people and the community. It indirectly includes policies and recommendations for visual resources through the preservation of natural and scenic resources. The Plan has several policies and goals for the development of aesthetically pleasing environments.

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Appendix C

# Cultural Resources Study

(CONFIDENTIAL – AVAILABLE UPON REQUEST)

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# CHEROKEE NATION THPO CONCURRENCE LETTER

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CHEROKEE NATION®
P.O. Box 948 • Tahlequah, OK 74465-0948
918-453-5000 • www.cherokee.org

**Chuck Hoskin Jr.**
*Principal Chief*
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**Bryan Warner**
*Deputy Principal Chief*
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May 10, 2024

William Brant
Bureau of Indian Affairs
P.O. Box 8002
Muskogee, OK 74402-8002

Re: Bartlesville 14.993-acre Gaming and Fee-to-Trust Project

Mr. William Brant:

The Cherokee Nation (Nation) is in receipt of your correspondence about and related report for the **Bartlesville 14.993-acre Gaming and Fee-to-Trust Project**, and appreciates the opportunity to provide comment upon this project. This communication is intended for government-to-government consultation with a sovereign federally recognized Tribal Nation. Information received in consultation will be deemed confidential unless explicit consent is provided by the Nation.

The Nation maintains databases and records of cultural, historic, and pre-historic resources in this area. Our Historic Preservation Office (Office) reviewed this project, cross referenced the project's legal description against our information, and found no instances where this project intersects or adjoins such resources. Thus, the Nation does not foresee this project imparting impacts to Cherokee cultural resources at this time.

However, the Nation requests that the Bureau of Indian Affairs (BIA) halt all project activities immediately and re-contact our Office for further consultation if items of cultural significance are discovered during the course of this project. Additionally, the Nation requests that the BIA conduct appropriate inquiries with other pertinent Historic Preservation Offices regarding historic and prehistoric resources not included in the Nation's databases or records.

If you require additional information or have any questions, please contact me at your convenience. Thank you for your time and attention to this matter.

Wado,

Elizabeth Toombs

Elizabeth Toombs, Tribal Historic Preservation Officer
Cherokee Nation Tribal Historic Preservation Office
elizabeth-toombs@cherokee.org
918.453.5389

Appendix D

# Custom Soil Resource Report

# CUSTOM SOIL RESOURCE REPORT

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

## Bartlesville 14.993-acre Gaming and Fee-to-Trust Project

Washington County, OK | January 2024


**Requested By:**

Acorn Environmental
5170 Golden Foothill Parkway
El Dorado Hills, CA 95762
916.235.8224
www.acorn-env.com


**Source:** https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx
**Date Accessed:** January 2024

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

# Custom Soil Resource Report for Washington County, Oklahoma

January 22, 2024

# Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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# How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report
## Soil Map (Cherokee Bartlesville)

Map Scale: 1:1,730 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 15N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

**Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County, Oklahoma
Survey Area Data: Version 17, Sep 8, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 11, 2022—May 14, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend (Cherokee Bartlesville)

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| DtC | Dennis silt loam, 3 to 5 percent slopes | 2.8 | 18.3% |
| Prqg | Pits, gravel and quarry | 0.2 | 1.3% |
| SoE | Shidler stony silty clay loam, 1 to 20 percent slopes | 11.9 | 77.4% |
| SuB | Summit silty clay loam, 1 to 3 percent slopes | 0.5 | 3.0% |
| **Totals for Area of Interest** | | **15.4** | **100.0%** |

# Map Unit Descriptions (Cherokee Bartlesville)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

# Washington County, Oklahoma

## DtC—Dennis silt loam, 3 to 5 percent slopes

### Map Unit Setting

*National map unit symbol:* 2thf0
*Elevation:* 600 to 1,000 feet
*Mean annual precipitation:* 41 to 45 inches
*Mean annual air temperature:* 55 to 61 degrees F
*Frost-free period:* 150 to 255 days
*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Dennis and similar soils:* 85 percent
*Minor components:* 15 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Dennis

#### Setting

*Landform:* Hillslopes
*Landform position (two-dimensional):* Shoulder, backslope
*Landform position (three-dimensional):* Side slope
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Parent material:* Silty and clayey residuum weathered from shale

#### Typical profile

*A - 0 to 11 inches:* silt loam
*BA - 11 to 17 inches:* silty clay loam
*Bt1 - 17 to 22 inches:* silty clay
*Bt2 - 22 to 68 inches:* silty clay
*C - 68 to 79 inches:* silty clay loam

#### Properties and qualities

*Slope:* 3 to 5 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Somewhat poorly drained
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)
*Depth to water table:* About 12 to 24 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* High (about 10.6 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 3e
*Hydrologic Soil Group:* C/D
*Ecological site:* R112XY103KS - Loamy Upland
*Hydric soil rating:* No

**Minor Components**

**Bates**

*Percent of map unit:* 5 percent
*Landform:* Interfluves
*Landform position (two-dimensional):* Shoulder, backslope
*Landform position (three-dimensional):* Side slope
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Ecological site:* R112XY103KS - Loamy Upland
*Hydric soil rating:* No

**Collinsville**

*Percent of map unit:* 4 percent
*Landform:* Hillslopes
*Landform position (two-dimensional):* Backslope
*Landform position (three-dimensional):* Side slope
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Ecological site:* R112XY105OK - Shallow Sandstone Upland
*Hydric soil rating:* No

**Eram**

*Percent of map unit:* 3 percent
*Landform:* Interfluves
*Landform position (two-dimensional):* Footslope
*Landform position (three-dimensional):* Base slope
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Ecological site:* R112XY102KS - Clayey Upland
*Hydric soil rating:* No

**Parsons**

*Percent of map unit:* 3 percent
*Landform:* Interfluves
*Landform position (two-dimensional):* Summit
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Concave
*Across-slope shape:* Concave
*Ecological site:* R112XY101KS - Claypan Upland
*Hydric soil rating:* No

## Prqg—Pits, gravel and quarry

**Map Unit Setting**

*National map unit symbol:* 2ydsy
*Elevation:* 670 to 1,210 feet
*Mean annual precipitation:* 37 to 45 inches
*Mean annual air temperature:* 55 to 59 degrees F
*Frost-free period:* 175 to 215 days

*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Pits, gravel and quarry:* 100 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Pits, Gravel And Quarry**

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 8
*Hydric soil rating:* Unranked

## SoE—Shidler stony silty clay loam, 1 to 20 percent slopes

**Map Unit Setting**

*National map unit symbol:* 2zgwk
*Elevation:* 620 to 950 feet
*Mean annual precipitation:* 31 to 48 inches
*Mean annual air temperature:* 57 to 64 degrees F
*Frost-free period:* 190 to 220 days
*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Shidler and similar soils:* 90 percent
*Minor components:* 10 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Shidler**

**Setting**

*Landform:* Hillslopes
*Landform position (two-dimensional):* Backslope
*Landform position (three-dimensional):* Side slope
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Parent material:* Loamy residuum weathered from cherty limestone

**Typical profile**

*A - 0 to 8 inches:* stony silty clay loam
*R - 8 to 79 inches:* bedrock

**Properties and qualities**

*Slope:* 1 to 20 percent
*Surface area covered with cobbles, stones or boulders:* 0.0 percent
*Depth to restrictive feature:* 6 to 20 inches to lithic bedrock
*Drainage class:* Well drained
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to low (0.00 to 0.00 in/hr)
*Depth to water table:* More than 80 inches
*Frequency of flooding:* None
*Frequency of ponding:* None

*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Very low (about 1.2 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 7s
*Hydrologic Soil Group:* D
*Ecological site:* R112XY106OK - Shallow Limestone Upland
*Hydric soil rating:* No

**Minor Components**

**Aliceville**

*Percent of map unit:* 5 percent
*Landform:* Interfluves
*Landform position (two-dimensional):* Summit, shoulder
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Ecological site:* R112XY102KS - Clayey Upland
*Hydric soil rating:* No

**Summit**

*Percent of map unit:* 5 percent
*Landform:* Interfluves
*Landform position (two-dimensional):* Backslope, footslope
*Landform position (three-dimensional):* Base slope
*Down-slope shape:* Concave, convex
*Across-slope shape:* Concave
*Ecological site:* R112XY103KS - Loamy Upland
*Hydric soil rating:* No

## SuB—Summit silty clay loam, 1 to 3 percent slopes

**Map Unit Setting**

*National map unit symbol:* 2thf5
*Elevation:* 540 to 1,230 feet
*Mean annual precipitation:* 31 to 47 inches
*Mean annual air temperature:* 55 to 59 degrees F
*Frost-free period:* 175 to 255 days
*Farmland classification:* All areas are prime farmland

**Map Unit Composition**

*Summit and similar soils:* 90 percent
*Minor components:* 10 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Summit**

**Setting**

*Landform:* Interfluves

*Landform position (two-dimensional):* Backslope, footslope
*Landform position (three-dimensional):* Base slope
*Down-slope shape:* Concave, convex
*Across-slope shape:* Concave
*Parent material:* Calcareous clayey colluvium and/or residuum weathered from shale

**Typical profile**

*A - 0 to 8 inches:* silty clay loam
*BA - 8 to 14 inches:* silty clay loam
*Bt - 14 to 35 inches:* silty clay
*BC - 35 to 49 inches:* silty clay
*C - 49 to 79 inches:* silty clay

**Properties and qualities**

*Slope:* 1 to 3 percent
*Depth to restrictive feature:* More than 80 inches
*Drainage class:* Moderately well drained
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)
*Depth to water table:* About 24 to 36 inches
*Frequency of flooding:* None
*Frequency of ponding:* None
*Maximum salinity:* Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
*Available water supply, 0 to 60 inches:* Moderate (about 8.9 inches)

**Interpretive groups**

*Land capability classification (irrigated):* None specified
*Land capability classification (nonirrigated):* 2e
*Hydrologic Soil Group:* D
*Ecological site:* R112XY103KS - Loamy Upland
*Hydric soil rating:* No

**Minor Components**

**Dennis**

*Percent of map unit:* 5 percent
*Landform:* Interfluves
*Landform position (two-dimensional):* Summit, footslope
*Landform position (three-dimensional):* Interfluve, base slope
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Ecological site:* R112XY103KS - Loamy Upland
*Hydric soil rating:* No

**Wagstaff**

*Percent of map unit:* 3 percent
*Landform:* Interfluves
*Landform position (two-dimensional):* Summit, shoulder
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Ecological site:* R112XY102KS - Clayey Upland
*Hydric soil rating:* No

**Shidler**

*Percent of map unit:* 2 percent

*Landform:* Interfluves
*Landform position (two-dimensional):* Summit, shoulder
*Landform position (three-dimensional):* Interfluve
*Down-slope shape:* Convex
*Across-slope shape:* Convex
*Ecological site:* R112XY106OK - Shallow Limestone Upland
*Hydric soil rating:* No

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Appendix E

# Biological Assessment

# BIOLOGICAL ASSESSMENT

## CHEROKEE NATION

# Bartlesville 14.993-acre Gaming and Fee-to-Trust Project

Washington County, OK | March 2024

**Lead Agency:**

Bureau of Indian Affairs
Eastern Oklahoma Regional Office
3100 W. Peak Blvd
Muskogee, OK 74401

# BIOLOGICAL ASSESSMENT

## CHEROKEE NATION

## Bartlesville 14.993-acre Gaming and Fee-to-Trust Project

Washington County, OK | March 2024


**Lead Agency:**

Bureau of Indian Affairs
Eastern Oklahoma Regional Office
3100 W. Peak Blvd
Muskogee, OK 74401
918.781.4600

**Prepared By:**

Acorn Environmental
5170 Golden Foothill Parkway
El Dorado Hills, CA 95762
916.235.8224
www.acorn-env.com

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# Section 1 | Introduction

## 1.1 PURPOSE OF ASSESSMENT

The purpose of this Biological Assessment (BA) is to address potential effects of the Cherokee Nation (Nation) Bartlesville 14.993-acre Gaming and Fee-to-Trust Project (Proposed Action) on species listed as endangered or threatened under the Endangered Species Act (ESA). This BA has been prepared in accordance with legal requirements found in Section 7 (a)(2) of the ESA (16 U.S.C. 1536(c)). The purpose of a BA is to evaluate the potential effects of an action on species listed and proposed for listing, as well as designated and proposed critical habitat, and to determine whether any such species or habitat are likely to be adversely affected by the action.

## 1.2 DESCRIPTION OF PROPOSED ACTION AND ACTION AREA

### 1.2.1 Action Area

The Action Area consists of vacant land located along US-75 within unincorporated Washington County, Oklahoma, surrounded by the City of Bartlesville. Surrounding land uses include commercial, residential, and open space. The Action Area is located within Section 28 of Township 26 North, Range 13 East within the Indian Base and Meridian. The Action Area falls within the Bartlesville South United States Geological Survey (USGS) 7.5' quadrangle map. **Figure 1** and **Figure 2** show the location of the Action Area, and **Figure 3** presents an aerial photograph of the Action Area and the immediate vicinity. For purposes of this assessment, the Action Area is defined as the entire property, which totals 14.993 acres. The Proposed Action would result in development of the totality of the Action Area.

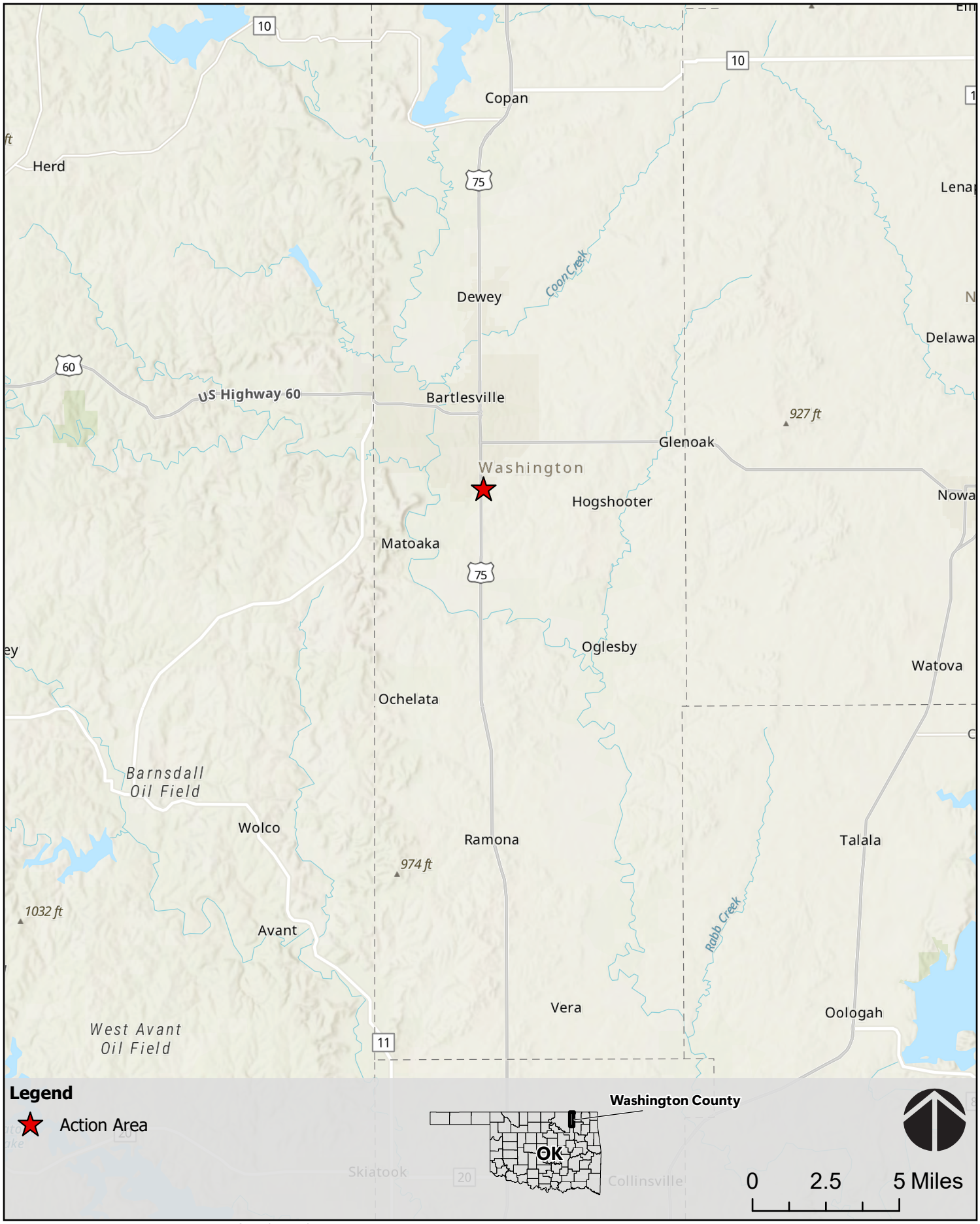
### 1.2.2 Proposed Action

The Proposed Action consists of the acquisition by the U.S. Bureau of Indian Affairs (BIA) of the Action Area in unincorporated Washington County, Oklahoma into federal trust status for the Cherokee Nation (Nation) for gaming purposes. Development components are shown in **Table 1** and **Figure 4**. The Proposed Action consists of the following components: 1) Transfer of the Action Area into federal trust status for the benefit of the Nation; and 2) construction of a casino, gas station/convenience store, hotel, paved surface parking, and supporting infrastructure within the Action Area. Construction is estimated to begin in 2025 and occur for approximately 18 months. The Action Area would be accessible via US-75/Southeast Washington Blvd. Water and wastewater connections would be provided by the City of Bartlesville and existing overhead powerlines occur along US-75/Southeast Washington Blvd and would provide electricity.

## 1.3 LISTED SPECIES AND CRITICAL HABITAT

### 1.3.1 Critical Habitat

There is no designated critical habitat within or adjacent to the Action Area. The nearest designated critical habitat is over 20 miles southeast of the Action Area and is designated for rabbitsfoot (*Quadrula cylindrica cylindrica*) (USFWS, 2024a).




Esri, NASA, NGA, USGS, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS

**FIGURE 1**

REGIONAL LOCATION

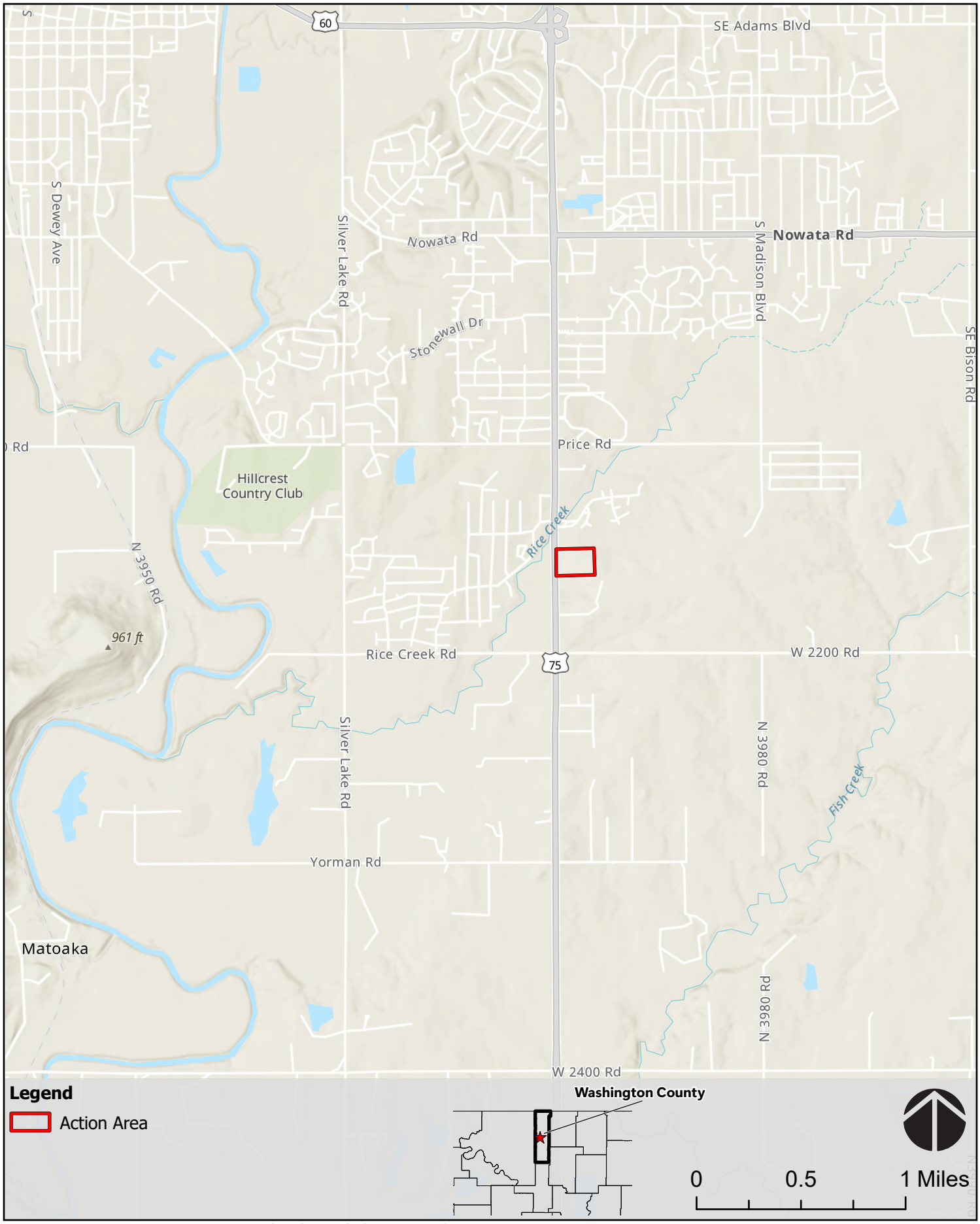



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**FIGURE 2**
SITE AND VICINITY

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**FIGURE 3**
AERIAL OVERVIEW

**Legend**

Action Area

1. MAIN ENTRY
2. SERVICE ENTRY
3. C-STORE ENTRY
4. PORTE COCHERE
5. CASINO
6. HOTEL
7. HOTEL LOBBY
8. HOTEL PATIO
9. LOADING DOCK
10. C-STORE
11. FUEL PUMPS
12. SURFACE PARKING
13. RAISED GARDEN FEATURE
14. DETENTION POND
15. PROPERTY LINE

0 100 200 Feet

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**FIGURE 4**
SITE PLAN

**Table 1: Development Components of the Proposed Action**

| Area | Number of Units | Square Footage |
|---|---|---|
| **Casino** | | |
| Gaming Floor | 500 Gaming Devices/5 tables | 16,000 |
| Sports Book | 34 Positions | 816 |
| Retail, Food, and Beverage | 130 Seats | 7,770 |
| Bars and Lounges | - | 1,176 |
| Meeting and Conference Space | 150 Seats | 1,725 |
| Porte Cochere | | 3,600 |
| Support and Circulation | - | 23,304 |
| **Total** | - | **54,391** |
| **Hotel** | | |
| Guest Rooms | 40 Rooms | 19,406 |
| Lobby | - | 1,317 |
| Support and Circulation | - | 9,179 |
| **Total** | - | **29,902** |
| **Gas Station/Convenience Store** | | |
| Convenience Store | 20 Gaming Devices | 4,000 |
| Fueling Stations | 8 Stations | - |
| **Total** | - | **4,000** |
| **Surface Parking** | | |
| Parking Spaces | 703 Spaces | - |

### 1.3.2 USFWS Species List

An official USFWS species list was generated online using the USFWS' Information for Planning and Consultation (IPaC) Trust Resource Report System (**Attachment A**). The following federally protected resources were identified that may occur in the Action Area:

#### Plants

None

#### Mammals

- Tricolored bat (*Perimyotis subflavus*) – Proposed Endangered

#### Birds

- Piping plover (*Charadrius melodus*) – Threatened
- Rufa red knot (*Calidris canutus rufa*) – Threatened

#### Reptiles

- Alligator Snapping Turtle (*Macrochelys temminckii*) – Proposed Threatened

### Clams

- Rabbitsfoot (*Quadrula cylindrica cylindrica*) – Threatened

### Insects

- Monarch Butterfly (*Danaus plexippus*) – Candidate
- American Burying Beetle (*Nicrophorus americanus*) – Threatened

#### *IPaC Verification for American Burying Beetle*

The status for American burying beetle (ABB) has recently been downlisted from Endangered to Threatened. The USFWS has issued a final rule under Section 4(d) of the Federal Endangered Species Act that sets forth a key to help project proponents determine if an activity is excepted from take. Activities excepted from take were assessed within a Programmatic Biological Opinion issued on the final 4(d) rule. Under the 4(d) rule, federal nexus projects that fall within the scope of the Programmatic Biological Opinion are considered compliant with Section 7 of the Federal Endangered Species Act. The USFWS IPaC system offers a determination key that determines consistency of a project with the Programmatic Biological Opinion.

Project information was submitted to the USFWS through the USFWS IPaC system under the final 4(d) rule for potential effects to ABB resulting from federal-nexus projects. A verification letter was issued by the USFWS for the Proposed Action that determined the Proposed Action is consistent with the Programmatic Biological Opinion on Final 4(d) Rule for the American burying beetle and Activities Excepted from Take Prohibitions (50 CFR § 17.47(d), Federal Register Citation 85 FR 65241). The verification letter is included in **Attachment A**.

### Migratory Birds

Additionally, under the Migratory Bird Treaty Act of 1918 (16 USC §703-711), migratory bird species and their nests and eggs that are on the federal list (50 CFR §10.13) are protected from injury or death, and project-related disturbances must be reduced or eliminated during the nesting cycle.

## 1.4 HABITAT CONSERVATION PLANS

The Action Area is not located within the covered area of any Habitat Conservation Plan, Safe Harbor Agreement, or similar.

## 1.5 CONSULTATION TO DATE

The BIA may use this BA to consult with the USFWS.

The Nation has previously consulted with the USFWS regarding impacts to ABB habitat on the Nation's other trust lands. In 2017, the Nation, in coordination with the USFWS, enacted the Cherokee Nation Endangered Species Conservation and Mitigation Program (CMP) (Cherokee Nation, 2017). The CMP was created in cooperation between the Nation and USFWS to facilitate ABB conservation and compliance with applicable regulations. The CMP designated the National Cherokee Nation Park as an ABB Conservation and Mitigation Area with a total of 790.1 acres preserved and a total of 694 conservation credits made available to the Nation.

# Section 2 | Methods

## 2.1 PRELIMINARY DATA GATHERING AND RESEARCH

Prior to conducting the field survey, the following information sources were reviewed:

- United States Geological Survey (USGS) 7.5 degree-minute topographic quadrangles of the Action Area and vicinity
- Aerial photography of the Action Area
- USFWS National Wetlands Inventory (NWI) mapper (USFWS, 2024b)
- USFWS IPaC species list (**Attachment A**)
- USFWS IPaC determination key for ABB (**Attachment A**)

## 2.2 FIELD SURVEYS

Consulting biologist Dr. Geo Graening conducted a biological field assessment on January 10, 2024 and collected data on wildlife and plant species present, as well as habitat types and potentially jurisdictional waters. Variable-intensity pedestrian surveys were performed. Fauna and flora observed were recorded in a field notebook and identified to the lowest possible taxon. Survey efforts emphasized the search for federally listed species. Habitat types occurring in the Action Area were mapped on aerial photographs, and information on habitat conditions and the suitability of habitats to support listed species was also recorded. The Action Area was also assessed for the presence of potentially jurisdictional water features, and other biologically-sensitive aquatic habitats.

## 2.3 MAPPING AND OTHER ANALYSIS

Locations of species' occurrences and habitat boundaries within the Action Area were recorded on color aerial photographs and then digitized to produce habitat maps. Vegetation communities (assemblages of plant species growing in an area of similar biological and environmental factors), were classified based upon the presence, distribution, and dominance of vegetation observed. Geographic analyses were performed using geographical information system software (ArcGIS 10, ESRI, Inc.).

The Action Area was surveyed for aquatic resources. If wetlands or other aquatic habitats were encountered, they would be classified using USFWS National Wetlands Inventory Classification System for Wetland and Deepwater Habitats, or "Cowardin class" (Cowardin et al., 1979). Informal wetland delineation methods would consist of an abbreviated, visual assessment of the three requisite wetland parameters (hydrophytic vegetation, hydric soils, hydrologic regime) defined in the U.S. Army Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987). Any encountered aquatic resources would be identified and measured in the field and similarly digitized to calculate acreage and to produce informal delineation maps.

# Section 3 | Results of Surveys

## 3.1 ENVIRONMENTAL SETTING

The geological setting of Washington County includes a mixture of Quaternary and Pennsylvanian sediments and sedimentary rock (Oklahoma Geological Survey, 2008). Washington County falls primarily within the Claremore Cuesta Plains geomorphic province, where terrain is generally flat and the climate is generally mild with the coldest monthly average low being 24 degrees Fahrenheit in January and the warmest monthly average high being 93 degrees Fahrenheit in July and August (U.S. Climate Data, 2024).

Within the Action Area, the topography is relatively flat with a gentle upward slope from west to east of approximately 693 to 759 feet above mean sea level. The Action Area primarily consists of undeveloped forested land. The western portion of the Action Area is ruderal and is currently used for site access and staging of sheds for roadside advertising. Site photographs are included in **Attachment B**.

## 3.2 INVENTORY OF FLORA AND FAUNA

No federally listed plant or animal species were observed during surveys conducted within the Action Area.

Animals observed during the surveys of the Action Area consisted of the following:

- Domestic dogs (*Canis familiaris*)
- Eastern cottontail (*Sylvilagus floridanus*)
- Blue jay (*Cyanocitta cristata*)
- Carolina wren (*Thryothorus ludovicianus*)
- Dark-eyed junco (*Junco hyemalis*)
- American crow (*Corvus brachyrhynchos*)

Plants observed during surveys of the Action Area consisted of the following:

- Iris (*Iris sp*.)
- Bermuda grass (*Cynodon dactylon*)
- Chinese privet (*Ligustrum sinense*)
- Japanese honeysuckle (*Lonicera japonica*)
- Chinese bushclover (*Lespedeza cuneata*)
- eastern red cedar (*Juniperus virginiana*)
- black locust (*Robinia pseudoacacia*)
- honey locust (*Gleditsia triacanthos*)
- prairie broomweed (*Amphiachyris dracunculoides*)
- prickly pear (*Opuntia*)
- Arkansas yucca (*Yucca Arkansas)*
- Missouri foxtail cactus (*Escobaria missouriensis*)
- switchgrasses (*Panicum virgatum* and *Panicum capillare*)
- big bluestem (*Andropogon gerardii*)
- grama (*Bouteloua*)
- field thistle (*Cirsium discolor*)

- horseweed (*Erigeron canadensis*)
- Johnson grass (*Sorghum*)
- pin oak (*Quercus palustris*)
- red oak (*Quercus rubra*)
- shagbark hickory (*Carya ovata*)
- common hackberry (*Celtis occidentalis*)
- winged elm (*Ulmus alata*)
- coralberry (*Symphoricarpos orbiculatus*)
- possumhaw holly (*Ilex decidua*)
- black cherry (*Prunus serotina*)
- eastern redbud (*Cercis canadensis*)
- poison ivy (*Toxicodendron radicans*)
- greenbrier (*Smilax*)
- groundcherry (*Calliphysalis*)

## 3.3 TERRESTRIAL HABITATS

The following terrestrial natural communities occur in the Action Area (**Figure 5**) and are described below:

- Ruderal/developed
- Cedar glade
- Mixed hardwood forest

### 3.3.1 Ruderal/Developed (1.2 acres)

These areas consist of disturbed or converted natural habitat that are now either in a ruderal state or fully developed. On the western edge of the Action Area, the vegetation communities are ruderal or urbanized. A strip along US-75/Southeast Washington Blvd was cleared and graveled to establish a commercial area (a retailer of storage sheds) as well as a municipal stormwater collection system. Vegetation in this area consists of non-native turf grasses and common weeds and ornamental species, such as Bermuda grass (*Cynodon dactylon*), Chinese privet (*Ligustrum sinense*), Japanese honeysuckle (*Lonicera japonica*), iris (*Iris sp*.), and Chinese bushclover (*Lespedeza cuneata*).

### 3.3.2 Cedar Glade (6.1 acres)

The eastern half of the Action Area is underlain by limestone bedrock, where soil development is poor. Vegetation is sparse and conditions are hotter and dryer than adjacent areas containing better soils and denser vegetation. Such habitats are called glades, and the vegetation community is drought adapted and interspersed with occasional trees. The dominant tree is eastern red cedar (*Juniperus virginiana*), but black locust (*Robinia pseudoacacia*) and honey locust (*Gleditsia triacanthos*) were also present. Prairie broomweed (*Amphiachyris dracunculoides*) was abundant. In rocky areas succulents such as prickly pear (*Opuntia*), Arkansas yucca (*Yucca arkansana*), and Missouri foxtail cactus (*Escobaria missouriensis*) were common. There were also remnants of prairie habitat in clearings in the Action Area, and native annual and perennial bunchgrasses can be seen, primarily switchgrasses (*Panicum virgatum* and *Panicum capillare*), big bluestem (*Andropogon gerardii*), and grama (*Bouteloua*). Some forbs were present, such as field thistle (*Cirsium discolor*) and horseweed (*Erigeron canadensis*), as well as non-native grasses such as Johnson grass (*Sorghum*).

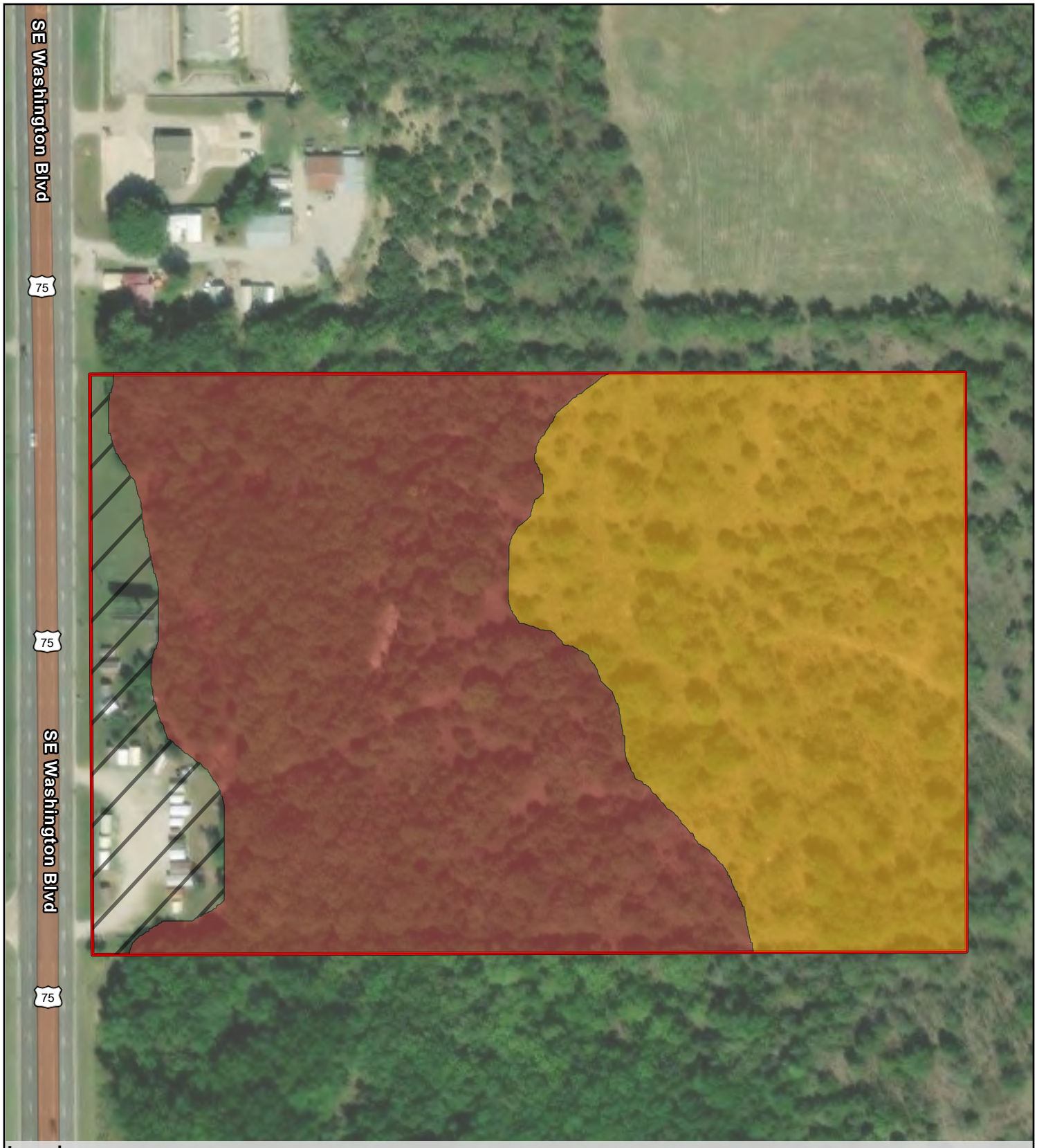


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**FIGURE 5**
HABITAT TYPES

### 3.3.3 Mixed Hardwood Forest (7.7 acres)

On the western half of the Action Area, mixed hardwood forest forms a dense canopy, except where clearings have been made for access roads. The deciduous overstory consists primarily of pin oak (*Quercus palustris*), red oak (*Quercus rubra*), and shagbark hickory (*Carya ovata*), with occasional common hackberry (*Celtis occidentalis*) and winged elm (*Ulmus alata*). The understory consists of coralberry (*Symphoricarpos orbiculatus*), possumhaw holly (*Ilex decidua*), black cherry (*Prunus serotina*), eastern redbud (*Cercis canadensis*) and vines such as poison ivy (*Toxicodendron radicans*), greenbrier (*Smilax*), and groundcherry (*Calliphysalis*). The closed canopy and dense leaf litter precludes the establishment of most grasses, although wildflowers could emerge in spring.

## 3.4 AQUATIC HABITATS

Regional mapped wetland features from the USFWS National Wetland Inventory are shown in **Figure 6**. The NWI did not report water features within the Action Area. The nearest surface water resources to the Action Area identified by NWI are isolated freshwater ponds and a riverine system associated with Rice Creek. Water resource mapping was also conducted during the survey. The survey did not observe aquatic habitats within the Action Area.

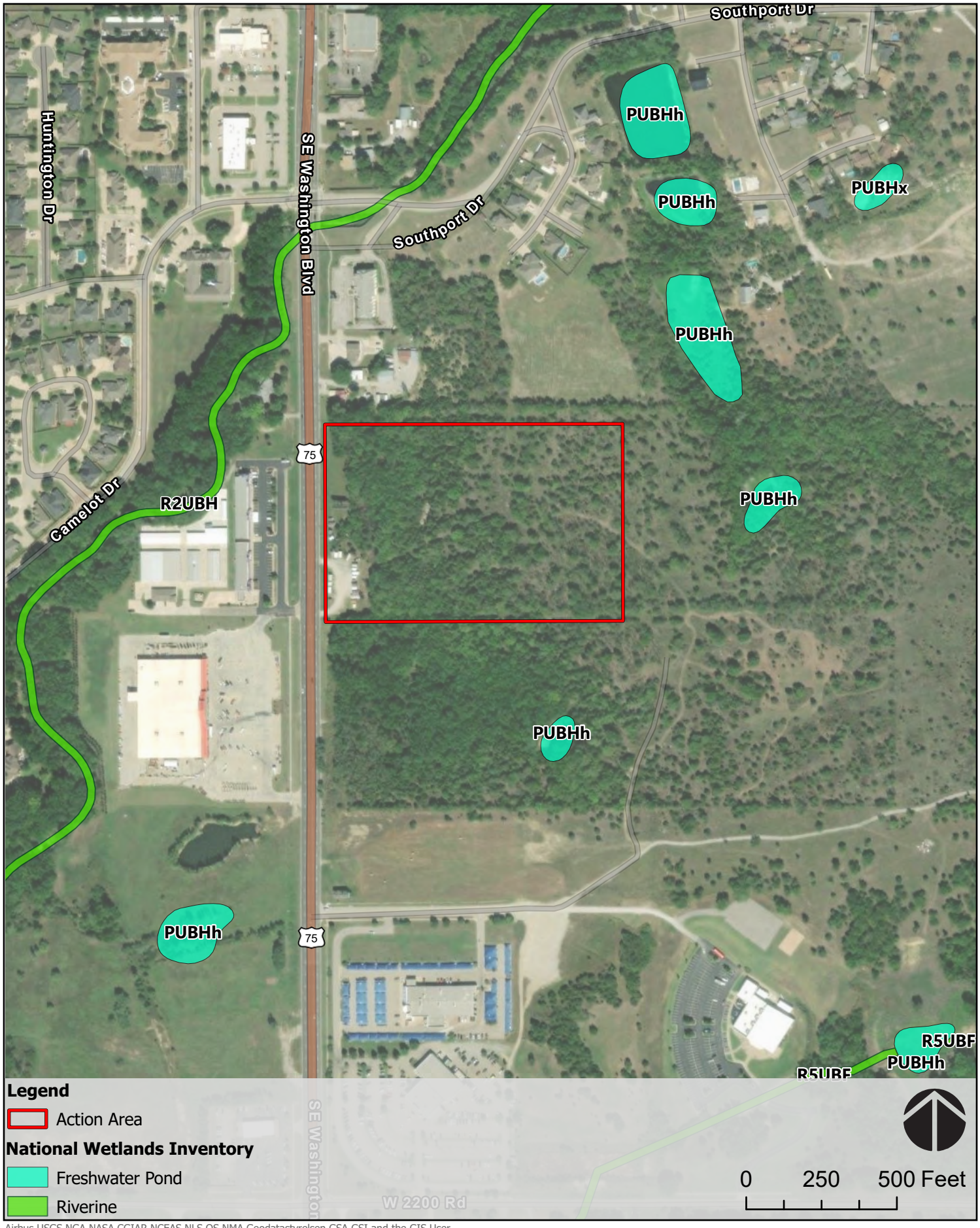


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**FIGURE 6**

National Wetland Inventory

# Section 4 | Species Accounts

## 4.1 MAMMALS

### 4.1.1 Tricolored bat (*Perimyotis subflavus*)

**Proposed Endangered**

The Action Area falls within the believed extant range of this species. Tricolor bats overwinter in caves, or cave-like analogs such as mines. During their active season, this species will roost in caves, structures, or in forested areas where leafy deciduous trees are present. This species prefers to roost within the leaves, however, it is also known to roost in evergreens or within structures (USFWS, 2024c). Females are known to have a high site fidelity and will return to a favored roost site each year. Although individuals may have favorite roosting sites, tricolored bats will frequently alter which individual roost tree is used (USFWS, 2022). Tricolored bats mate just prior to hibernation, typically in mid-August to mid-October, with young being born shortly after hibernation, typically in May through July (USFWS, 2022). Females give birth in a maternity roost and will stay with their young at the roost until the young are weaned. Preferred foraging habitat includes over waterways and along forested edges of waterways.

There are no known occurrences of this species within the Action Area, and this species was not observed during the survey. The Action Area contains deciduous and evergreen trees that could provide suitable roosting habitat for this species during the active season. Winter hibernacula habitat is not present.

## 4.2 BIRDS

### 4.2.1 Piping plover (*Charadrius melodus*)

**Threatened**

The piping plover is a migratory shorebird that requires sand or gravel beaches for nesting (USFWS, 2024d). The majority of nesting occurs within coastal areas, however, the Northern Great Plains breeding population utilizes inland lakes, reservoirs, or similar. Piping plovers will forage for invertebrates within sandy mud flats, ephemeral pools, seagrass beds, and unvegetated shorelines of lakes, reservoirs, or river sandbars (USFWS, 2024d).

There are no known occurrences of this species within the Action Area, and this species was not observed during the survey. The Action Area lacks suitable habitat for this species and does not provide foraging or nesting habitat. Therefore, this species does not have potential to occur within the Action Area.

### 4.2.2 Rufa red knot (*Calidris canutus rufa)*

**Threatened**

Rufa red knots are migratory shorebirds that breed in the far north (arctic) and travel as far south as South America to overwinter (USFWS, 2024e). While this species is a coastal bird and requires coastal habitat for breeding and foraging, isolated observances of this species has been noted to stopover at inland saline lakes during migration (USFWS, 2024e; All About Birds, 2024). Therefore, inland habitat would only be used transiently by individual rufa red knots where saline lakes are available for migratory stopovers.

There are no known occurrences of this species within the Action Area, and this species was not observed during the survey. The Action Area lacks suitable habitat for this species and does not provide foraging or nesting habitat. There are no saline lakes in the vicinity that would serve as suitable migratory stopovers. Therefore, this species does not have potential to occur within the Action Area.

# 4.3 REPTILES

## 4.3.1 Alligator Snapping Turtle (*Macrochelys temminckii*)

### Proposed Threatened

The alligator snapping turtle is a freshwater turtle that can reach a size of up to 250 pounds and two feet in shell length (ODWC, 2024a). Alligator snapping turtles live in freshwater rivers, lakes, sloughs, and other freshwater surface waters that provide sufficient forage. They will feed on a variety of prey, including fish, mussels, and amphibians, as well as birds, mammals, or reptiles that wander within striking distance. According to the Oklahoma Department of Wildlife Conservation (ODWC), it is believed that alligator snapping turtles in the state of Oklahoma are limited to waterbodies within the east central and southeastern portions of the state (ODWC, 2024a).

There are no known occurrences of this species within the Action Area, and this species was not observed during the survey. The Action Area does not contain freshwater habitat and therefore lacks suitable habitat for this species. Therefore, this species does not have potential to occur within the Action Area.

# 4.4 CLAMS

## 4.4.1 Rabbitsfoot (*Quadrula cylindrica cylindrica*)

### Threatened

Rabbitsfoot is a freshwater mussel that inhabits small to medium sized streams as well as larger rivers where shallow waters with lower flows are present (USFWS, 2024f). Suitable substrate for this species includes gravels and sand, with reported depths of observations up to 12 feet below the water surface. Rabbitsfoot feed on algae, bacteria, detritus, and microscopic organisms. Juveniles will burrow to feed and seek refuge, however adults generally only filter feed.

There are no known occurrences of this species within the Action Area, and this species was not observed during the survey. The Action Area does not contain freshwater habitat and therefore lacks suitable habitat for this species. Therefore, this species does not have potential to occur within the Action Area.

# 4.5 INSECTS

## 4.5.1 American Burying Beetle (*Nicrophorus americanus*)

### Threatened

ABB is a large carrion beetle that occupies a wide variety of habitats within the state of Oklahoma. According to the ODWC, this species is most commonly found in the state within oak-hickory forests (ODWC, 2024b). The USFWS has determined that while ABB can inhabit a range of habitats, the following habitats are unfavorable: land tilled on a regular basis, developed land, urban land, stockpiled soil with no vegetation, wetlands or saturated soils, and pasture/grassland less than 8 inches in height (USFWS, 2018).

These habitats have been determined unsuitable due to the level of disturbance or because of the poor habitat quality for ABB. The active season for ABB in Oklahoma is based on temperature conditions and is considered to begin post winter after five consecutive nights exceeding 60 degrees Fahrenheit and ends after August 31 after the third night that temperatures drop below 60 degrees Fahrenheit (USFWS, 2018).

Survey efforts took place outside of the active season for this species. Therefore, lack of survey observations is not considered an indicator of presence for this species. The mixed hardwood forest within the Action Area provides suitable habitat for this species and contains a mixture of oak and hickory known to support this species elsewhere in the state (ODWC, 2024b). The ruderal habitat would be considered unfavorable as it is regularly disturbed with vegetation absent in some areas and maintained below 8 inches in other areas (USFWS, 2018). The cedar grove within the Action Area is also considered unsuitable for ABB as soils within this area are too moist to support ABB.

Project information was submitted to the USFWS through the USFWS IpaC system under the final 4(d) rule for potential effects to ABB resulting from federal-nexus projects. A verification letter was issued by the USFWS for the Proposed Action that determined the Proposed Action is consistent with the Programmatic Biological Opinion on Final 4(d) Rule for the American burying beetle and Activities Excepted from Take Prohibitions (50 CFR § 17.47(d), Federal Register Citation 85 FR 65241). The verification letter is included in **Attachment A**.

### 4.5.2 Monarch Butterfly (*Danaus plexippus*)

#### Candidate

The monarch is a candidate species and not yet formerly proposed for listing. During the breeding season, monarchs lay their eggs on their obligatory milkweed host plant (primarily *Asclepias* species), and larvae emerge after two to five days (USFWS, 2023g). Larvae develop through five molts over a period of 9 to 18 days, feeding on milkweed and sequestering toxic chemicals (cardenolides) as a defense against predators. The larva then pupates into a chrysalis before emerging 6 to 14 days later as an adult butterfly. There are multiple generations of monarchs produced during the breeding season, with most adult butterflies living approximately two to five weeks; overwintering adults enter into reproductive diapause (suspended reproduction) and live six to nine months (USFWS, 2023g). In the fall, monarchs begin migrating to their overwintering sites. This migration can take monarchs distances of over 3,000 km and last for over two months. In early spring (February-March), surviving monarchs break diapause and mate at the overwintering sites before dispersing. The same individuals that undertook the initial southward migration begin flying back through the breeding grounds and their offspring start the cycle of generational migration over again (USFWS 2023g).

There are no known occurrences of this species within the Action Area and this species was not observed during the survey. Milkweed was not observed within the Action Area, and the density of the tree canopy limits the understory of the Action Area such that suitable foraging nectar sources would not be available. Additionally, roosting colonies do not occur within the Action Area. Therefore, this species does not have potential to occur within the Action Area.

# Section 5 | Effects of the Action

Based on guidance provided by the ESA Section 7 Effects Determination Guidance, possible effects determinations for the Proposed Action are:

- **No effect:** The proposed action will not affect the listed species or critical habitat.
- **May affect but is not likely to adversely affect:** The proposed action will affect a listed species in a way that is discountable, insignificant, or completely beneficial. Discountable effects are extremely unlikely to occur; insignificant effects are impacts small enough that they never reach the scale where a take occurs, and completely beneficial effects are positive effects without any adverse effects to the species.
- **May affect and is likely to adversely affect:** The proposed action will either directly or indirectly, or through its interrelated and interdependent actions, adversely affect a listed species.

These guidelines were used in determining conclusions of this BA and are discussed for the critical habitat, listed species, and migratory birds below.

## 5.1 POTENTIAL ADVERSE EFFECTS ON CRITICAL HABITAT

There is no federally-designated critical habitat for any listed species within or adjacent to the Action Area. The nearest critical habitat is over 20 miles southeast of the Action Area and is designated for rabbitsfoot (*Quadrula cylindrica cylindrica*) (USFWS, 2024a). Therefore, implementation of the Proposed Action will have no effect on designated critical habitat for any federally listed species.

## 5.2 POTENTIAL ADVERSE EFFECTS ON LISTED SPECIES

### 5.2.1 Tricolored Bat

There is potential for individual tricolored bats to roost within trees in the Action Area during their active season (April 1 through October 31). Therefore, should construction activities related to the Proposed Action result in removal of trees with roosting bats, take of individual bats could occur. The quality of potential roosting habitat is sub-optimal as tricolored bats prefer to roost in deciduous trees, and the majority of the Action Area is dominated by less favorable cedars. Additionally, trees within both the cedar glade and mixed hardwood forest are younger and of a similar age class. Old growth and larger trees more likely to support roosting are absent.

As a proposed endangered species, tricolored bat is not protected from take until the rule to list the species is finalized; however, federal agencies are required under Section 7(a)(4) of the ESA to confer with USFWS if their actions will jeopardize the continued existence of the species. Therefore, avoidance, and minimization measures are included in **Section 5.5**. Avoidance measures include timing of tree removal outside of the active season when there is no potential for tricolored bats to occur. Should these activities commence during the active season, measures in **Section 5.5** would require emergence surveys to determine if trees within the Action Area are utilized by tricolored bats. In the event that individual roosting bats are observed, an avoidance plan would be developed with USFWS to ensure activities commence when roosts are unoccupied or by implementing a multi-day tree removal regime. With consideration of measures presented in **Section 5.5**, implementation of the Proposed Action may affect but is not likely to adversely affect tricolored bat.

### 5.2.2 Piping Plover

The Action Area lacks suitable habitat for piping plover, therefore, this species does not have potential to occur within the Action Area. Implementation of the Proposed Action will have no effect on piping plover.

### 5.2.3 Rufa Red Knot

The Action Area lacks suitable habitat for rufa red knot, therefore, this species does not have potential to occur within the Action Area. Implementation of the Proposed Action will have no effect on rufa red knot.

### 5.2.4 Alligator Snapping Turtle

The Action Area lacks suitable habitat for alligator snapping turtle, therefore, this species does not have potential to occur within the Action Area. Implementation of the Proposed Action will have no effect on alligator snapping turtle.

### 5.2.5 Rabbitsfoot

The Action Area lacks suitable habitat for rabbitsfoot, therefore, this species does not have potential to occur within the Action Area. Implementation of the Proposed Action will have no effect on rabbitsfoot.

### 5.2.6 American Burying Beetle

As discussed in **Section 4.5.1**, Suitable habitat for ABB is present within the mixed hardwood forest within the Action Area. Construction of the Proposed Action would result in conversion of 7.7 acres of suitable ABB habitat into developed habitat. This has the potential to result in take of individual ABB, should ABB be present within the Action Area.

Project information was submitted to the USFWS through the USFWS IPaC system under the final 4(d) rule for potential effects to ABB resulting from federal-nexus projects. A verification letter was issued by the USFWS for the Proposed Action that determined the Proposed Action is consistent with the Programmatic Biological Opinion on the Final 4(d) Rule for the American burying beetle and Activities Excepted from Take Prohibitions (50 CFR § 17.47(d), Federal Register Citation 85 FR 65241). The verification letter is included in **Attachment A**. Therefore, the Programmatic Biological Opinion satisfies and concludes the Proposed Action's responsibilities under the Federal Endangered Species Act, Section 7(a)(2) with respect to ABB.

Although no further action is required, this assessment recognizes that the USFWS Oklahoma Field Office has issued best management practices for minimizing impacts to ABB. Those best management practices feasible for implementing as part of the Proposed Action are outlined in **Section 5.5.2**.

With consideration of measures presented in **Section 5.5**, implementation of the Proposed Action may affect but is not likely to adversely affect ABB.

### 5.2.7 Monarch Butterfly

The Action Area lacks suitable habitat and host plants to support monarch butterfly, therefore, this species does not have potential to occur within the Action Area. Implementation of the Proposed Action will have no effect on monarch butterfly.

# 5.3 INTERRELATED, INTERDEPENDENT, AND CUMULATIVE EFFECTS

## 5.3.1 Interrelated and Interdependent Effects

Interrelated and interdependent effects are direct or indirect effects that occur as a result of activities that are closely affiliated with a project in areas outside the Action Area. Such actions include road or utility improvements off-site that would not be constructed but for implementation of the Proposed Action. Indirect effects also consist of the off-site degradation of natural habitats, such as the increase in noise or by the discharge of sediment to receiving waterbodies during construction.

Implementation of the Proposed Action would involve the construction of off-site access improvements and off-site improvements for the extension of water and wastewater connections to the Action Area. Access improvements would occur within the right-of-way for US-75/Southeast Washington Blvd. Water infrastructure is already present adjacent to the Action Area and would similarly require work within the right-of-way and possibly infrastructure upgrades along the roadway to existing water lines. Finally, wastewater lines are available in the vicinity of the Action Area but would require extension along US-75/Southeast Washington Blvd within the roadway/road shoulder. Overhead powerlines are already available along US-75/Southeast Washington Blvd and would not require ground disturbance should electrical upgrades be necessary.

### Tricolored Bat

Construction of the access improvements would be limited to paving and widening of the existing access drive within the public right-of-way for US-75/Southeast Washington Blvd. This would require removal of existing pavement and widening into an area of sparse weedy forbs within the ruderal road shoulder that is regularly mowed and driven over. This area does not contain features of value to tricolored bat. Similarly, extension of water and wastewater infrastructure to the Action Area would be limited to work within the ruderal/developed road and road shoulder. Electrical upgrades, if needed would be fully overhead, in which case no ground disturbance would occur, or minimal undergrounding within the road and road shoulder may occur. These activities would not require disturbance of trees, structures, or other habitat of value to tricolored bat. Additionally, these actions would not indirectly impact suitable habitat through means such as intense use of artificial light or strong vibrations. Therefore, the Proposed Action would have no effect on tricolored bat related to interrelated and interdependent effects.

### Piping Plover

As discussed in **Section 4.2.1**, piping plover is a coastal species. When found within inland habitat, this species requires open bodies of water with sand or gravel beaches to support foraging and nesting. These habitats do not occur within the vicinity of the Action Area or the off-site infrastructure improvements. Although surface waters would not be directly impacted, there is the possibility of impaired runoff escaping areas of direct impacts and flowing into downstream surface waters. Although surface waters are absent within the Action Area, it is noted that, on tribal trust land, the Nation must enroll in the USEPA's 2022 Construction General Permit. On non-federal land, the landowner must enroll under the State Water Quality Control Board's Construction General Permit prior to the initiation of construction.

In conjunction with enrollment under either of these permit programs, a Storm Water Pollution Prevention Plan (SWPPP), Erosion Control Plan, and a Hazardous Materials Management/Spill Response Plan must be created and implemented during construction to avoid or minimize the potential for erosion, sedimentation, or accidental release of hazardous materials. Implementation of these measures mandated by law would prevent the exceedance of water quality thresholds designed to protect off-site water quality. Therefore, the Proposed Action would have no effect on piping plover related to interrelated and interdependent effects.

## Rufa Red Knot

As with piping plover, the rufa red knot is a coastal bird that relies on coastal habitats. When found inland, specifically associated with migratory events, this species may be observed apart from coastal habitat if sufficient saline waterbodies are present to serve as migratory stopovers. There are no saline surface waters within or near the Action Area or the off-site infrastructure improvement. Therefore, the Proposed Action would have no effect on rufa red knot related to interrelated and interdependent effects.

## Alligator Snapping Turtle

The alligator snapping turtle requires freshwater rivers, lakes, sloughs, and other freshwater surface waters that provide sufficient forage. There are no surface water resources within the Action Area or areas subject to off-site infrastructure improvements. Although surface waters would not be directly impacted, there is the possibility of impaired runoff escaping areas of direct impacts and flowing into downstream surface waters. As discussed above under piping plover, a SWPPP would be implemented for the Proposed Action and would prevent impaired waters from exiting the area of impact and affecting downstream waters. Therefore, the Proposed Action would have no effect on alligator snapping turtle related to interrelated and interdependent effects.

## Rabbitsfoot

As with alligator snapping turtle, rabbitsfoot requires a surface water habitat that is not found within or adjacent to the Action Area or off-site infrastructure improvements. As discussed above, indirect effects would be avoided through the implementation of a SWPPP. Therefore, the Proposed Action would have no effect on rabbitsfoot related to interrelated and interdependent effects.

## American Burying Beetle

Indirect actions would occur within ruderal/developed habitat that would be unfavorable to ABB and would not result in actions that would impact habitat of value to this species. Therefore, the Proposed Action would have no effect on ABB related to interrelated and interdependent effects.

## Monarch Butterfly

Interrelated and interdependent actions would be limited to minimal work within disturbed road shoulders and would not directly impact habitat suitable for monarch butterfly. Additionally, as discussed above, these actions would not indirectly impact habitat outside of boundary of direct impacts. Therefore, the Proposed Action would have no effect on monarch butterfly related to interrelated and interdependent effects.

### 5.3.2 Cumulative Effects

For the purposes of this assessment, cumulative effects consider the full range of a species and whether the Proposed Action, in conjunction with the condition of the species across its range, would imperil the long-term existence of a species. For the purposes of this analysis, the cumulative setting includes growth and development envisioned in the City of Bartlesville Comprehensive Land Use Plan for the Bartlesville Metropolitan Area (City of Bartlesville, 1999), US Highway 75 Master Plan (City of Bartlesville, 2003), and zoning designation and land use trends in the vicinity of the Action Area. **Table 2** below identifies specific development projects within the wider City of Bartlesville. There are no known significant development projects within unincorporated Washington County in the vicinity of the Proposed Action.

**Table 2: Cumulatively Considered Projects**

| Project | Summary | Status |
|---|---|---|
| Capital Improvement Projects | Various roadway improvements, public service building improvements, parks maintenance, and equipment purchasing | Approved, in funding stages |
| City Projects | Improvements to existing city infrastructure, including sidewalks, a wastewater expansion, fiberoptics, and improvements to the Bartlesville Municipal Airport | Various stages of planning |
| Osage Casino Bartlesville | Gaming floor, restaurant, hotel, and banquet space | Recently opened |
| Commercial infill | Various commercial infill projects including:<br>▪ Food and dining (Bricktown Brewery, Wendy's, McAlister Deli, H Tea O, Scooter's Coffee)<br>▪ Shoe Department Encore | Approved, in various stages of pre-construction/construction |
| DR Horton Homes | 73 single-family residences | Partially constructed |
| Silver Lake Village | Re-zone from agriculture to single-family residential/ multi-family residential and general commercial of 115 acres on Adams Blvd east of Silver Lake Road | Planning stages |
| Sources: City of Bartlesville 2022a, 2022b, 2022c, 2024; 500 Nations, 2024; Bartlesville Radio, 2022 | | |

#### Tricolored Bat

Impacts to tricolored bat related to the Proposed Action would be the removal of potential roost trees within approximately 13.8 acres of tree-dominated habitat and potential for these actions to result in take of individual tricolored bats. It is noted that the potential roosting habitat is less-favorable to tricolored bat due to the type and age of trees present. Additionally, the Action Area and vicinity are semi-urbanized and developed. This therefore constitutes a loss of sub-optimal habitat that has a relatively low potential to serve as active-season roosting habitat. Higher quality forested habitat is readily available outside of the urbanized area associated with the City of Bartlesville where no known cumulative projects are anticipated to occur. Removal of this habitat would therefore not endanger the continued existence of this species. Additionally, avoidance, minimization, and mitigation measures included in Section 5.5 would ensure that individual roosting bats would be avoided such that take of tricolored bat would not occur. As take would not occur and habitat loss would not be cumulatively considerable, implementation of the Proposed Action may affect but is not likely to adversely affect tricolored bat.

### Piping Plover

As discussed above, the Proposed Action would not result in direct, interrelated, or interdependent effects to this species. Therefore, the Proposed Action would not contribute to cumulative impacts to this species. The Proposed Action would have no effect on piping plover as it relates to cumulative impacts.

### Rufa Red Knot

As discussed above, the Proposed Action would not result in direct, interrelated, or interdependent effects to this species. Therefore, the Proposed Action would not contribute to cumulative impacts to this species. The Proposed Action would have no effect on rufa red knot as it relates to cumulative impacts.

### Alligator Snapping Turtle

As discussed above, the Proposed Action would not result in direct, interrelated, or interdependent effects to this species. Therefore, the Proposed Action would not contribute to cumulative impacts to this species. The Proposed Action would have no effect on alligator snapping turtle as it relates to cumulative impacts.

### Rabbitsfoot

As discussed above, the Proposed Action would not result in direct, interrelated, or interdependent effects to this species. Therefore, the Proposed Action would not contribute to cumulative impacts to this species. The Proposed Action would have no effect on rabbitsfoot as it relates to cumulative impacts.

### American Burying Beetle

A verification letter issued by the USFWS for the Proposed Action determined the Proposed Action is consistent with the Programmatic Biological Opinion on the Final 4(d) Rule for the American burying beetle and Activities Excepted from Take Prohibitions (50 CFR § 17.47(d), Federal Register Citation 85 FR 65241) (**Attachment A**). Other development projects in the area that may impact ABB or its habitat would be required to undergo the same determination process in accordance with the Programmatic Biological Opinion. Therefore, the Proposed Action may affect but is not likely to adversely affect ABB as it relates to cumulative impacts.

### Monarch Butterfly

As discussed above, the Proposed Action would not result in direct, interrelated, or interdependent effects to this species. Therefore, the Proposed Action would not contribute to cumulative impacts to this species. The Proposed Action would have no effect on monarch butterfly as it relates to cumulative impacts.

## 5.4 POTENTIAL EFFECTS ON MIGRATORY BIRDS/RAPTORS

Trees and other vegetation within the Action Area may provide suitable nesting and perching habitat for raptors and/or migratory birds. If construction activities are conducted during the nesting season, nesting birds/raptors could be directly impacted by removal of nesting habitat and indirectly impacted by noise, vibration, and other construction-related disturbance. Implementation of avoidance and minimization measures in **Section 5.5** would prevent potential impacts to migratory birds/raptors, and nesting birds.

# 5.5 AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

The following measures shall be implemented during construction.

## 5.5.1 Tricolored Bat

- Timing of tree removal shall occur outside the active season (April 1 through October 31) of roosting bats to the extent feasible.

  **OR**

- Should tree removal occur during the active season (April 1 through October 31), emergence surveys shall be conducted by a qualified biologist consistent with Appendix E: Phase 4 Emergence Surveys of the USFWS Range-Wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines (USFWS, 2023).
- As tricolored bat can be difficult to detect in emergence surveys, USFWS shall be consulted prior to emergence surveys to approve the surveying biologist as well as the survey methodology and timing.
- If no bats are observed, data sheets shall be submitted to the USFWS and no further action is necessary.
- If one or more bats are observed, it shall be assumed that the bat is a listed bat. In this case, an avoidance plan shall be developed with USFWS that identifies avoidance methods such as timing of disturbance with periods of bat activity in order to confirm bats are absent from trees prior to impacts, or implementation of a multi-day tree removal process in order to ensure trees are removed slowly enough to prevent injury or mortality to roosting bats.

## 5.5.2 American Burying Beetle

- The use of artificial lighting shall be limited and shall consist of LED bulbs to the extent feasible. In situations where night construction work is necessary, direct light shall be shielded downward and limited to the work area to the extent feasible to prevent light from projecting upwards, thus minimizing the potential to attract insects, including ABBs.
- A Stormwater Pollution Prevention Plan (SWPPP) shall be prepared, implemented, and maintained throughout the construction phase of the development, consistent with General Construction Permit requirements. The SWPPP shall include, but would not be limited to, the following BMPs to minimize storm water effects to water quality during construction:
    - Grading activities shall be limited to the immediate area required for construction.
    - Temporary erosion control measures (such as silt fences, fiber rolls, staked straw bales, temporary re-vegetation, rock bag dams, erosion control blankets, and sediment traps) shall be employed as needed for disturbed areas.
    - Construction activities shall be scheduled to minimize land disturbance during peak runoff periods to the extent feasible.
    - Disturbed areas shall be paved, re-vegetated, and/or stabilized following construction activities.
    - A spill prevention and countermeasure plan shall be developed that identifies proper storage, collection, and disposal measures for potential pollutants (such as fuel, fertilizers, pesticides, etc.) used on-site.
    - Petroleum products shall be stored, handled, used, and disposed of properly in accordance with provisions of the CWA (33 USC §§ 1251 to 1387).

  - Construction materials shall be stored, covered, and isolated to prevent runoff loss and contamination of surface and groundwater.
  - Fuel and vehicle maintenance areas shall be limited to the impact area.
  - To minimize dust generation during construction, soil will be wetted down with water prior to ground disturbance as needed.
  - Generated waste shall be properly disposed of.
- Workers operating in the project area during construction shall be educated about ABB habitat and their responsibility to avoid and minimize impacts to ABB. Workers shall be provided with a color picture of the ABB and signs shall be posted at project-related access points with reminders to follow special restrictions in the area.
- Workers shall report any ABB sightings to the project manager and food waste or dead animals shall be removed from the Action Area each day.

### 5.5.3 Nesting Migratory Birds/Other Birds of Prey

- If construction activities commence during the general nesting season (February 15 to September 1), a preconstruction nest survey shall be conducted by a qualified biologist on and within 100 feet of proposed construction, and within 7 days of initiating ground disturbance. If active nests are identified, the qualified biologist shall determine a suitable avoidance buffer based on the needs of the species observed.
- Avoidance measures include establishment of a buffer zone using construction fencing or similar, or the postponement of construction until after the nesting season, or until after a qualified biologist has determined the nest is no longer active. Avoidance buffers may vary in size depending on habitat characteristics, project-related activities, and disturbance levels.
- Should work activity cease for 14 days or more during the nesting season, surveys shall be repeated to ensure birds and have not established nests during inactivity.

# Section 6 | Conclusions

The Action Area is comprised of ruderal/developed, mixed hardwood, and cedar glade habitat. The USFWS species list identified seven federally listed species with the potential to occur in the vicinity of the Action Area in addition to migratory birds protected under the MTBA. These species are the tricolored bat, piping plover, rufa red knot, alligator snapping turtle, rabbitsfoot, ABB, and monarch butterfly. This Biological Assessment is respectfully submitted to USFWS for review and concurrence that the Proposed Action would (1) have no effect on piping plover, rufa red knot, alligator snapping turtle, rabbitsfoot, and monarch butterfly, and (2) may affect but is not likely to adversely affect tricolored bat and ABB with consideration of avoidance and minimization measures.

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# Section 8 | Qualifications of Preparers

### G.O. Graening, Ph.D., M.S.E.

Dr. Graening holds a Doctorate in Biological Sciences and a Master of Science in Biological Engineering and is a certified arborist (International Society of Arboriculture). Dr. Graening has 26 years of experience in environmental assessment and research, including the performance of numerous wetland delineations and aquatic restoration projects, USFWS permitted work for multiple bat species, and plant surveys. Dr. Graening also served as an adjunct professor of biology at California State University Sacramento for 10 years and was an active researcher in the area of conservation biology and groundwater ecology.

### Kelli Raymond, B.S.

Ms. Raymond holds a B.S. in Animal Biology with a focus on Wildlife Ecology. She has approximately 10 years of experience collecting field data and preparing environmental assessments. Ms. Raymond has worked in several states across the U.S. performing biological resources surveys, including plant surveys, bat acoustic and flyout monitoring, and wildlife utilization monitoring. She also has experience live handling numerous wildlife species, including fish, migratory birds, and big game. Ms. Raymond is experienced in the preparation of Biological Assessments and Section 7 consultation with both the USFWS and NMFS under the federal Endangered Species Act.

Attachment A

# IPaC Report and ABB Verification

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
Phone: (918) 581-7458 Fax: (918) 581-7467

In Reply Refer To:
Project code: 2024-0046588
Project Name: Cherokee Nation

February 08, 2024

Subject: Verification letter for 'Cherokee Nation' project under the October 15, 2020, Programmatic Biological Opinion on Final 4(d) Rule for the American burying beetle and Activities Excepted from Take Prohibitions (50 CFR § 17.47(d), Federal Register Citation 85 FR 65241).

Dear Kt Alonzo:

The U.S. Fish and Wildlife Service (Service) received on **February 08, 2024** your effect determination(s) for the 'Cherokee Nation' (the Action) using the American burying beetle (*Nicrophorus americanus*) determination key within the Information for Planning and Consultation (IPaC) system.

This determination key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's October 15, 2020, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from incidental "take"[1] prohibitions applicable to the American burying beetle under the Endangered Species Act of 1973 (Act) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the American burying beetle; however, any incidental take that may occur as a result of the Action is not prohibited under the Act Section 4(d) rule adopted for this species at 50 CFR §17.47(d). **Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under Act Section 7(a)(2) with respect to the American burying beetle.**

Please report any changes to the information about the Action that you submitted in IPaC, the results of any American burying beetle surveys conducted in the Action area, and any dead, injured, or sick American burying beetles that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

This IPaC-assisted determination allows you to rely on the PBO for compliance with Act Section 7(a)(2) only for the American burying beetle.

---

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct (Act, Section 3(19)).

This letter covers only the American burying beetle. It **does not** apply to the following ESA-protected species that also may occur in the Action area:

- Alligator Snapping Turtle *Macrochelys temminckii* Proposed Threatened
- Monarch Butterfly *Danaus plexippus* Candidate
- Piping Plover *Charadrius melodus* Threatened
- Rabbitsfoot *Quadrula cylindrica cylindrica* Threatened
- Rufa Red Knot *Calidris canutus rufa* Threatened
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

If your project may affect additional listed species, you must evaluate additional DKeys for other species, or submit a request for consultation for the additional species to your local Ecological Services Field Office.

**Action Description**
You provided to IPaC the following name and description for the subject Action.

**1. Name**

Cherokee Nation

**2. Description**

The following description was provided for the project 'Cherokee Nation':

> Commercial

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.70531255,-95.93328680757463,14z

# QUALIFICATION INTERVIEW

1. Is the action authorized, funded, or being carried out by a Federal agency?

   *Yes*

2. Have you determined that the proposed action will have “no effect” on the American burying beetle? (If you are unsure select "No")

   *No*

3. Will your activity **purposefully take** American burying beetles?

   *No*

4. Is your project wholly inside the 4d rule Analysis Area? For areas of your project occurring inside the Analysis Area (New England, Northern Plains, Southern Plains), your project may qualify for exemptions. For areas of your project occurring outside the Analysis Area, all incidental take is exempted according to the ABB 4d Rule.

   **Automatically answered**
   *Yes*

5. Is American burying beetle suitable habitat present within the action area?

   *Yes*

6. Will suitable habitat be affected by the proposed action? Suitable habitat may be impacted if the action involves soil disturbance, use of vehicles or heavy equipment, artificial lighting, vegetation removal, use of herbicides, pesticides, other hazardous chemicals.

   *Yes*

# PROJECT QUESTIONNAIRE

Please select the activity that best matches your proposed action.

*1. Soil disturbance related to urban expansion or construction of structures*

If you chose 13 above, please describe below. If you did not choose 13 above, please type "0".

*0*

Estimate the total acres of suitable American burying beetle habitat that may be affected.

*7.7*

Please estimate the total number of acres of **temporary impacts** to American burying beetle habitat. See definitions

*7.7*

Please estimate the total number of acres of **permanent impacts** to American burying beetle habitat. See definitions

*7.7*

## IPAC USER CONTACT INFORMATION

Agency: Cherokee Nation
Name: Kt Alonzo
Address: 5170 Golden Foothill Parkway
City: El Dorado Hills
State: CA
Zip: 95762
Email kalonzo@acorn-env.com
Phone: 5308636191

## LEAD AGENCY CONTACT INFORMATION

Lead Agency: Bureau of Indian Affairs

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Oklahoma Ecological Services Field Office
9014 East 21st Street
Tulsa, OK 74129-1428
Phone: (918) 581-7458 Fax: (918) 581-7467

In Reply Refer To:
Project Code: 2024-0046588
Project Name: Cherokee Nation

February 08, 2024

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

**Migratory Birds**: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

# OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Oklahoma Ecological Services Field Office**
9014 East 21st Street
Tulsa, OK 74129-1428
(918) 581-7458

# PROJECT SUMMARY

Project Code: 2024-0046588
Project Name: Cherokee Nation
Project Type: Commercial Development
Project Description: Commercial
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@36.70531255,-95.93328680757463,14z

Counties: Washington County, Oklahoma

# ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## MAMMALS

| NAME | STATUS |
|---|---|
| Tricolored Bat *Perimyotis subflavus*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/10515 | Proposed Endangered |

## BIRDS

| NAME | STATUS |
|---|---|
| Piping Plover *Charadrius melodus*<br>Population: [Atlantic Coast and Northern Great Plains populations] - Wherever found, except those areas where listed as endangered.<br>There is **final** critical habitat for this species. Your location does not overlap the critical habitat.<br>Species profile: https://ecos.fws.gov/ecp/species/6039 | Threatened |
| Rufa Red Knot *Calidris canutus rufa*<br>There is **proposed** critical habitat for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/1864 | Threatened |

## REPTILES

| NAME | STATUS |
|---|---|
| Alligator Snapping Turtle *Macrochelys temminckii*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/4658 | Proposed Threatened |

## CLAMS

| NAME | STATUS |
|---|---|
| Rabbitsfoot *Quadrula cylindrica cylindrica* | Threatened |

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/5165

## INSECTS

| NAME | STATUS |
|---|---|
| American Burying Beetle *Nicrophorus americanus* | Threatened |

Population: Wherever found, except where listed as an experimental population
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/66

| | |
|---|---|
| Monarch Butterfly *Danaus plexippus* | Candidate |

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

## CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

# USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

# BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

---

1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.

3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

**There are bald and/or golden eagles in your project area.**

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

| NAME | BREEDING SEASON |
|---|---|
| Bald Eagle *Haliaeetus leucocephalus*<br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br>https://ecos.fws.gov/ecp/species/1626 | Breeds Oct 15 to Aug 31 |

# PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

**Probability of Presence** (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

**Breeding Season** (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

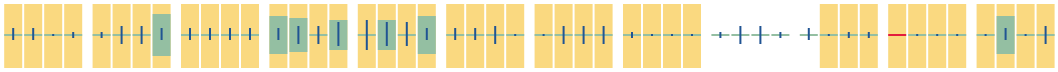
**Survey Effort** (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

**No Data** (–)
A week is marked as having no data if there were no survey events for that week.

■ probability of presence ■ breeding season | survey effort – no data

| SPECIES | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|

Bald Eagle
Non-BCC
Vulnerable



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

# MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

| NAME | BREEDING SEASON |
|---|---|
| Bald Eagle *Haliaeetus leucocephalus*<br>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.<br>https://ecos.fws.gov/ecp/species/1626 | Breeds Oct 15 to Aug 31 |

| NAME | BREEDING SEASON |
|---|---|
| Black-billed Cuckoo *Coccyzus erythropthalmus*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9399 | Breeds May 15 to Oct 10 |
| Chimney Swift *Chaetura pelagica*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9406 | Breeds Mar 15 to Aug 25 |
| Eastern Whip-poor-will *Antrostomus vociferus*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/10678 | Breeds May 1 to Aug 20 |
| Kentucky Warbler *Oporornis formosus*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9443 | Breeds Apr 20 to Aug 20 |
| Prothonotary Warbler *Protonotaria citrea*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9439 | Breeds Apr 1 to Jul 31 |
| Red-headed Woodpecker *Melanerpes erythrocephalus*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9398 | Breeds May 10 to Sep 10 |
| Rusty Blackbird *Euphagus carolinus*<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA<br>https://ecos.fws.gov/ecp/species/9478 | Breeds elsewhere |
| Wood Thrush *Hylocichla mustelina*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/9431 | Breeds May 10 to Aug 31 |

# PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

**Probability of Presence** (■)

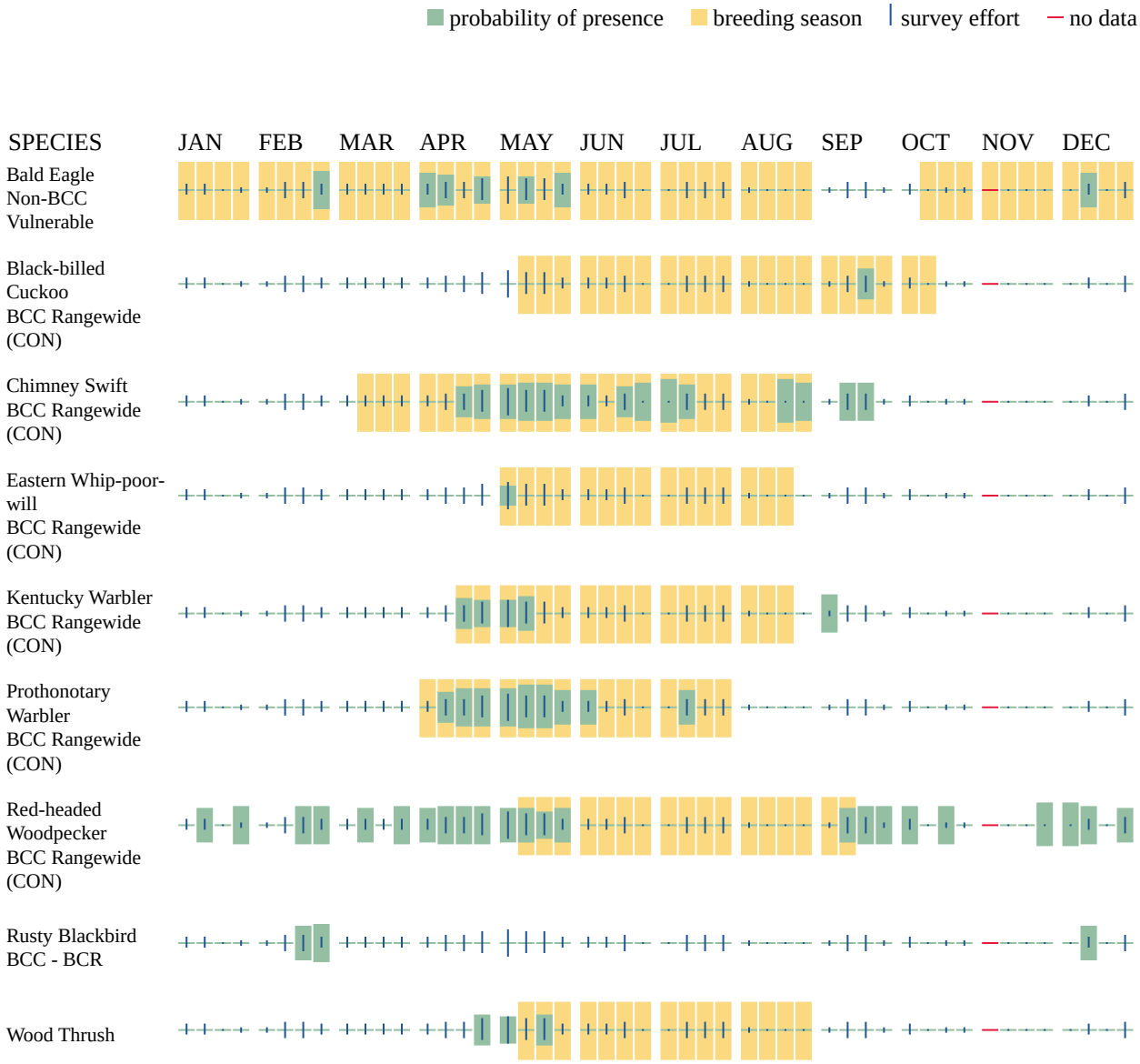
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

**Breeding Season** (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

**Survey Effort** (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

**No Data** (–)
A week is marked as having no data if there were no survey events for that week.

---



BCC Rangewide
(CON)

Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

# WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

# IPAC USER CONTACT INFORMATION

Agency: Cherokee Nation
Name: Kt Alonzo
Address: 5170 Golden Foothill Parkway
City: El Dorado Hills
State: CA
Zip: 95762
Email kalonzo@acorn-env.com
Phone: 5308636191

# LEAD AGENCY CONTACT INFORMATION

Lead Agency: Bureau of Indian Affairs

Attachment B

# Site Photographs

View looking northeast along Southeast Washington Boulevard of the ruderal habitat (mowed grass) and developed area (commercial business selling storage sheds)

View looking northwest of mowed area and commercial area, at the edge of the mixed hardwood forest

View looking northeast from an access road with trash cleanup occurring in the center of the Action Area

View looking east of the cedar glade; the rocky, thin soil is visible in the foreground

View looking east of the mixed hardwood forest and leaf litter

View looking west of the access road used to haul away trash; the road is wet from snow melt

View looking east from the southern edge of the property boundary, showing prairie grasses that have colonized an old road clearing

View  of bunchgrasses in the northeast corner of the property; cedar glade is in the background

View of exposed limestone bedrock in the northeast corner of the property

View looking northeast of the cedar glade; in the background, there is a housing development on the neighboring property

View looking north of trash (from illegal trash dumping) in the cedar glade

Appendix F

# Air Quality Emissions Calculations

# AIR QUALITY EMISSIONS CALCULATIONS

## USEPA MODEL MOTOR VEHICLE EMISSION SIMULATOR

## Bartlesville 14.993-acre Gaming and Fee-to-Trust Project

Washington County, OK | February 2024

**Prepared By:**

Acorn Environmental
5170 Golden Foothill Parkway
El Dorado Hills, CA 95762
916.235.8224
www.acorn-env.com

**Source:** https://www.epa.gov/air-emissions-factors-and-quantification/ap-42-compilation-air-emissions-factors

**Table 1a**
**Alternative A - Vehicle Miles Traveled per Year**

| | Trip Generation (average daily trips) | Average Distance (miles)[1] | Alternative A | |
|---|---|---|---|---|
| | | | Trips/Year | VMT/Year (miles) |
| **Proposed Project**[1] | **7,464** | **15** | **2,724,360** | **40,865,400** |

[1] Trip generation is weekly average calculated from weekday/weekend from Traffic Impact Analysis (Traffic Engineering Consultants, February 2024)

**Table 1a**
**Alternative B - Vehicle Miles Traveled per Year**

| | Trip Generation (average daily trips) | Average Distance (miles)[1] | Alternative B | |
|---|---|---|---|---|
| | | | Trips/Year | VMT/Year (miles) |
| **Reduced Intensity Alternative**[1] | **5,904** | **15** | **2,154,960** | **32,324,400** |

[1] Trip generation is weekly average calculated from weekday/weekend from Traffic Impact Analysis (Traffic Engineering Consultants, February 2024)

**Table 2a**
**2026 Mobile Operations Criteria Pollutant and GHG Emissions**

| | Alternative A | Alternative B |
|---|---|---|
| vmt/yr | 40,865,400 | 32,324,400 |
| **Criteria Pollutant Emissions (tpy)** | | |
| NOx | 17.19 | 13.60 |
| VOC | 3.70 | 2.92 |
| $SO_2$ | 0.09 | 0.07 |
| CO | 139.17 | 110.08 |
| $PM_{2.5}$ | 0.63 | 0.50 |
| $PM_{10}$ | 2.32 | 1.83 |
| **Greenhouse Gas[1]** | | |
| $CO_2$ | 18200.3 | 14396.4 |
| $CH_4$ | 1.3 | 1.1 |
| $N_2O$ | 0.9 | 0.7 |
| $CO_2e$ | 18489.9 | 14625.4 |

[1] GHG emissions shown in metric tonnes.
Source: MOVES4

**Table 2b**
**2046 Mobile Operations Criteria Pollutant and GHG Emissions**

| | Alternative A | Alternative B |
|---|---|---|
| vmt/yr | 40,865,400 | 32,324,400 |
| **Criteria Pollutant Emissions (tpy)** | | |
| NOx | 4.37 | 3.46 |
| VOC | 1.51 | 1.19 |
| $SO_2$ | 0.06 | 0.05 |
| CO | 48.99 | 38.75 |
| $PM_{2.5}$ | 0.37 | 0.29 |
| $PM_{10}$ | 2.02 | 1.60 |
| **Greenhouse Gas[1]** | | |
| $CO_2$ | 12547.59 | 9925.10 |
| $CH_4$ | 0.91 | 0.72 |
| $N_2O$ | 0.72 | 0.57 |
| $CO_2e$ | 12785.63 | 10113.39 |

[1] GHG emissions shown in metric tonnes.
Source: MOVES4

**Table 3a**
2026 Operational Mobile Annual Average Emission Factors

| Criteria Pollutant | grams per mile |
|---|---|
| NOx | 0.38 |
| VOC | 0.08 |
| $SO_2$ | 0.002 |
| CO | 3.09 |
| $PM_{2.5}$ | 0.01 |
| $PM_{10}$ | 0.05 |
| **Greenhouse Gases** | |
| $CO_2$ | 445.37 |
| $CH_4$ | 0.03 |
| $N_2O$ | 0.02 |
| $CO_2e$ | 452.46 |
| Source: MOVES4 | |

**Table 3b**
2026 Operational Start Annual Average Emission Factors

| Criteria Pollutant | grams per start |
|---|---|
| NOx | 0.37 |
| VOC | 0.35 |
| $SO_2$ | 0.000 |
| CO | 3.87 |
| $PM_{2.5}$ | 0.01 |
| $PM_{10}$ | 0.01 |
| **Greenhouse Gases** | |
| $CO_2$ | 79.16 |
| $CH_4$ | 0.05 |
| $N_2O$ | 0.03 |
| $CO_2e$ | 90.38 |
| Source: MOVES4 | |

**Table 3c**
2046 Operational Mobile Annual Average Emission Factors

| Criteria Pollutant | grams per mile |
|---|---|
| NOx | 0.10 |
| VOC | 0.03 |
| $SO_2$ | 0.001 |
| CO | 1.09 |
| $PM_{2.5}$ | 0.01 |
| $PM_{10}$ | 0.04 |
| **Greenhouse Gas** | |
| $CO_2$ | 307.05 |
| $CH_4$ | 0.02 |
| $N_2O$ | 0.018 |
| $CO_2e$ | 312.87 |
| Source: MOVES4 | |

**Table 3d**
2046 Operational Start Annual Average Emission Factors

| Criteria Pollutant | grams per start |
|---|---|
| NOx | 0.19 |
| VOC | 0.17 |
| $SO_2$ | 0.000 |
| CO | 1.38 |
| $PM_{2.5}$ | 0.01 |
| $PM_{10}$ | 0.01 |
| **Greenhouse Gas** | |
| $CO_2$ | 41.64 |
| $CH_4$ | 0.03 |
| $N_2O$ | 0.02 |
| $CO_2e$ | 48.22 |
| Source: MOVES4 | |

**Table 4**
Fugitive Dust Emissions from Construction

| | **Alternative A** | **Alternative B** |
|---|---|---|
| Construction Area (acres) | 15.00 | 15.00 |
| Duration of Construction (months) | 18 | 12 |
| On-site cut/fill (1,000 cubic yards) | 12.1 | 12.1 |
| $PM_{10}$ Emisson Factor (tons $PM_{10}$/acre-month) | 0.011 | 0.011 |
| On-site cut/fill PM10 Emission Factor (tons PM10/1,000 cubic yards) | 0.059 | 0.059 |
| **Total PM10 Emissions (tons)** | **3.68** | **2.69** |
| **Total $PM_{2.5}$ Emissions (tons)** | **1.84** | **1.35** |

Source: Emission factors from WRAP's Fugitive Dust Handbook (Level 2).

Note: On-site cut/fill estimated based on project description. PM2.5 conservatively estimated to be half of PM10 emissions.

**Table 5a**
Alternative A - Construction Emissions

| Construction Equipment[1] | Horsepower | Load Factor | Hours in Use[2] (hours/day) | Emission Factors (g/bhp/hr)[4] | | | | | | Emission (tons/year) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CO | VOC | NOx | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ | CO | VOC | NOx | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ |
| **Site Grading** | | | | | | | | | | | | | | | |
| 2 Excavator | 158 | 0.38 | 8 | 3.08 | 0.17 | 1.32 | 0.01 | 0.07 | 0.06 | 0.13 | 0.01 | 0.06 | 0.00 | 0.00 | 0.00 |
| 1 Bulldozer | 247 | 0.40 | 8 | 1.80 | 0.40 | 4.09 | 0.01 | 0.18 | 0.17 | 0.06 | 0.01 | 0.14 | 0.00 | 0.01 | 0.01 |
| 1 Grader | 187 | 0.41 | 8 | 1.22 | 0.26 | 3.07 | 0.01 | 0.10 | 0.09 | 0.03 | 0.01 | 0.08 | 0.00 | 0.00 | 0.00 |
| 2 Tractor/Loaders/Backhoes | 97 | 0.37 | 8 | 3.53 | 0.23 | 2.29 | 0.01 | 0.11 | 0.10 | 0.09 | 0.01 | 0.06 | 0.00 | 0.00 | 0.00 |
| 2 Scrapers | 367 | 0.48 | 8 | 1.92 | 0.25 | 2.48 | 0.01 | 0.10 | 0.09 | 0.24 | 0.03 | 0.31 | 0.00 | 0.01 | 0.01 |
| Employee Trips (miles)[3] | | 12,000 | | 2.91 | 0.07 | 0.19 | 0.00 | 0.04 | 0.01 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fugitive Dust | | | | | | | | | | | | | | 3.68 | 1.84 |
| **Construction** | | | | | | | | | | | | | | | |
| 1 Crane | 231 | 0.29 | 7 | 1.50 | 0.28 | 2.97 | 0.01 | 0.12 | 0.11 | 0.23 | 0.04 | 0.46 | 0.00 | 0.02 | 0.02 |
| 3 Forklifts | 89 | 0.2 | 8 | 3.24 | 0.15 | 1.91 | 0.01 | 0.06 | 0.05 | 0.46 | 0.02 | 0.27 | 0.00 | 0.01 | 0.01 |
| 1 Generator | 84 | 0.74 | 8 | 3.34 | 0.26 | 2.32 | 0.01 | 0.10 | 0.10 | 0.55 | 0.04 | 0.38 | 0.00 | 0.02 | 0.02 |
| 3 Tractors/Loaders/Backhoes | 97 | 0.37 | 7 | 1.21 | 0.18 | 1.24 | 0.01 | 0.04 | 0.04 | 0.30 | 0.05 | 0.31 | 0.00 | 0.01 | 0.01 |
| 1 Welder | 46 | 0.45 | 8 | 4.56 | 0.65 | 3.78 | 0.01 | 0.13 | 0.13 | 0.75 | 0.11 | 0.62 | 0.00 | 0.02 | 0.02 |
| Employee Trips (miles)[3] | | 1,338,000 | | 2.91 | 0.07 | 0.19 | 0.00 | 0.04 | 0.01 | 4.29 | 0.10 | 0.28 | 0.00 | 0.06 | 0.01 |
| **Paving** | | | | | | | | | | | | | | | |
| 2 Pavers | 130 | 0.42 | 8 | 3.00 | 0.19 | 1.81 | 0.01 | 0.08 | 0.08 | 0.06 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 |
| 2 Paving Equipment | 132 | 0.36 | 8 | 3.07 | 0.20 | 1.79 | 0.01 | 0.09 | 0.08 | 0.05 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 |
| 2 Rollers | 80 | 0.38 | 8 | 3.45 | 0.27 | 2.84 | 0.01 | 0.15 | 0.14 | 0.04 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 |
| Employee Trips (miles)[3] | | 6,000 | | 2.91 | 0.07 | 0.19 | 0.00 | 0.04 | 0.01 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Architectural Coating** | | | | | | | | | | | | | | | |
| Coating | | 0.0116 | | | | | | | | | 0.51 | | | | |
| **Total Project Construction Emissions** | | | | | | | | | | **7.21** | **0.94** | **3.01** | **0.01** | **3.85** | **1.96** |

Sources:

[1] Construction equipment list from CalEEMod.

[2] Hours per normal work day.

[3] Based on 20 mile trip length, 15 to 223 trips per day, and EMFAC, 2014 emission factors (grams/mile).

[4] Emission factors provided by EMFAC, 2014, EPA approved offroad emission factors, as sourced from CalEEMod Default Data Tables: http://www.aqmd.gov/docs/default-source/caleemod/caleemod-appendixd.pdf?sfvrsn=2.
On-Road Emission Factors from MOVES4 for Passenger Truck (31)

**Table 5b**
Alternative B - Construction Emissions

| Construction Equipment[1] | Horsepower | Load Factor | Hours in Use[2] (hours/day) | Emission Factors (g/bhp/hr)[4] | | | | | | Emission (tons/year) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | CO | VOC | NOx | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ | CO | VOC | NOx | $SO_2$ | $PM_{10}$ | $PM_{2.5}$ |
| **Site Grading** | | | | | | | | | | | | | | | |
| 2 Excavator | 158 | 0.38 | 8 | 3.08 | 0.17 | 1.32 | 0.01 | 0.07 | 0.06 | 0.13 | 0.01 | 0.06 | 0.00 | 0.00 | 0.00 |
| 1 Bulldozer | 247 | 0.40 | 8 | 1.80 | 0.40 | 4.09 | 0.01 | 0.18 | 0.17 | 0.06 | 0.01 | 0.14 | 0.00 | 0.01 | 0.01 |
| 1 Grader | 187 | 0.41 | 8 | 1.22 | 0.26 | 3.07 | 0.01 | 0.10 | 0.09 | 0.03 | 0.01 | 0.08 | 0.00 | 0.00 | 0.00 |
| 2 Tractor/Loaders/Backhoes | 97 | 0.37 | 8 | 3.53 | 0.23 | 2.29 | 0.01 | 0.11 | 0.10 | 0.13 | 0.01 | 0.09 | 0.00 | 0.00 | 0.00 |
| 2 Scrapers | 367 | 0.48 | 8 | 1.92 | 0.25 | 2.48 | 0.01 | 0.10 | 0.09 | 0.24 | 0.03 | 0.31 | 0.00 | 0.01 | 0.01 |
| Employee Trips (miles)[3] | | 12,000 | | 2.91 | 0.07 | 0.19 | 0.00 | 0.04 | 0.01 | 0.04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fugitive Dust | | | | | | | | | | | | | | 2.69 | 1.35 |
| **Construction** | | | | | | | | | | | | | | | |
| 1 Crane | 231 | 0.29 | 7 | 1.50 | 0.28 | 2.97 | 0.01 | 0.12 | 0.11 | 0.23 | 0.04 | 0.46 | 0.00 | 0.02 | 0.02 |
| 3 Forklifts | 89 | 0.2 | 8 | 3.24 | 0.15 | 1.91 | 0.01 | 0.06 | 0.05 | 0.46 | 0.02 | 0.27 | 0.00 | 0.01 | 0.01 |
| 1 Generator | 84 | 0.74 | 8 | 3.34 | 0.26 | 2.32 | 0.01 | 0.10 | 0.10 | 0.55 | 0.04 | 0.38 | 0.00 | 0.02 | 0.02 |
| 3 Tractors/Loaders/Backhoes | 97 | 0.37 | 7 | 1.21 | 0.18 | 1.24 | 0.01 | 0.04 | 0.04 | 0.10 | 0.02 | 0.10 | 0.00 | 0.00 | 0.00 |
| 1 Welder | 46 | 0.45 | 8 | 4.56 | 0.65 | 3.78 | 0.01 | 0.13 | 0.13 | 0.75 | 0.11 | 0.62 | 0.00 | 0.02 | 0.02 |
| Employee Trips (miles)[3] | | 1,260,000 | | 2.91 | 0.07 | 0.19 | 0.00 | 0.04 | 0.01 | 4.29 | 0.10 | 0.28 | 0.00 | 0.06 | 0.01 |
| **Paving** | | | | | | | | | | | | | | | |
| 2 Pavers | 130 | 0.42 | 8 | 3.00 | 0.19 | 1.81 | 0.01 | 0.08 | 0.08 | 0.06 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 |
| 2 Paving Equipment | 132 | 0.36 | 8 | 3.07 | 0.20 | 1.79 | 0.01 | 0.09 | 0.08 | 0.05 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 |
| 2 Rollers | 80 | 0.38 | 8 | 3.45 | 0.27 | 2.84 | 0.01 | 0.15 | 0.14 | 0.04 | 0.00 | 0.03 | 0.00 | 0.00 | 0.00 |
| Employee Trips (miles)[3] | | 6,000 | | 2.91 | 0.07 | 0.19 | 0.00 | 0.04 | 0.01 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Architectural Coating** | | | | | | | | | | | | | | | |
| Coating | | 0.0116 | | | | | | | | | 0.32 | | | | |
| **Total Project Construction Emissions** | | | | | | | | | | **7.05** | **0.72** | **2.83** | **0.01** | **2.85** | **1.46** |

Sources:

[1] Construction equipment list from CalEEMod.

[2] Hours per normal work day.

[3] Based on 20 mile trip length, 15 to 223 trips per day, and EMFAC, 2014 emission factors (grams/mile).

[4] Emission factors provided by EMFAC, 2014, EPA approved offroad emission factors, as sourced from CalEEMod Default Data Tables: http://www.aqmd.gov/docs/default-source/caleemod/caleemod-appendixd.pdf?sfvrsn=2.
On-Road Emission Factors from MOVES4 for Passenger Truck (31)

**Table 6a**
Alternative A - Construction GHG Emissions

| Construction Equipment[1] | Horsepower | Load Factor | Hours in Use[2] (hours/day) | Emission Factors (g/bhp/hr)[3] | | Emission Factors (g/mile) | Emisssion (metric tons) |
|---|---|---|---|---|---|---|---|
| | | | | CO2 | CH4 | CO2e | CO2e |
| **Site Grading** | | | | | | | |
| 2 Excavator | 158 | 0.38 | 8 | 472.43 | 0.15 | | 18.30 |
| 1 Bulldozer | 247 | 0.40 | 8 | 474.59 | 0.15 | | 15.13 |
| 1 Grader | 187 | 0.41 | 8 | 473.67 | 0.15 | | 11.72 |
| 2 Tractor/Loaders/Backhoes | 97 | 0.37 | 8 | 476.73 | 0.15 | | 11.04 |
| 2 Scrapers | 367 | 0.48 | 8 | 472.85 | 0.15 | | |
| Employee Trips (total miles)[4] | | 12,000 | | | | 380.48 | 4.57 |
| **Construction** | | | | | | | |
| 1 Crane | 231 | 0.29 | 7 | 472.96 | 0.15 | | 67.07 |
| 3 Forklifts | 89 | 0.2 | 8 | 473.06 | 0.15 | | 61.12 |
| 1 Generator | 84 | 0.74 | 8 | 568.30 | 0.02 | | 84.87 |
| 3 Tractors/Loaders/Backhoes | 97 | 0.37 | 7 | 476.73 | 0.15 | | 108.66 |
| 1 Welder | 46 | 0.45 | 8 | 568.30 | 0.06 | | 28.31 |
| Employee Trips (total miles)[4] | | 1,338,000 | | | | 380.48 | 509.09 |
| **Paving[4]** | | | | | | | |
| 2 Pavers | 130 | 0.42 | 8 | 472.66 | 0.15 | | 8.33 |
| 2 Paving Equipment | 132 | 0.36 | 8 | 470.66 | 0.15 | | 7.21 |
| 2 Rollers | 80 | 0.38 | 8 | 474.01 | 0.15 | | 4.65 |
| Employee Trips (total miles)[4] | | 6,000 | | | | 380.48 | 2.28 |
| **Construction GHG Emissions** | | | | | | | **942** |

Source:
[1] Construction equipment list from CalEEMod.
[2] Hours per normal work day.
[3] Off-Road Emission factors provided from California Air Resources Board OFFROAD2011 emission factors, as sourced from CalEEMod Default Data
[4] On-Road Emission Factors from MOVES4 for Passenger Truck (31)

**Table 6b**
Alternative B - Construction GHG Emissions

| Construction Equipment[1] | Horsepower | Load Factor | Hours in Use[2] (hours/day) | Emission Factors (g/bhp/hr)[3] | | Emission Factors (g/mile) | Emisssion (metric tons) |
|---|---|---|---|---|---|---|---|
| | | | | CO2 | CH4 | CO2e | CO2e |
| **Site Grading** | | | | | | | |
| 2 Excavator | 158 | 0.38 | 8 | 472.43 | 0.15 | | 18.30 |
| 1 Bulldozer | 247 | 0.40 | 8 | 474.59 | 0.15 | | 15.13 |
| 1 Grader | 187 | 0.41 | 8 | 473.67 | 0.15 | | 11.72 |
| 2 Tractor/Loaders/Backhoes | 97 | 0.37 | 8 | 476.73 | 0.15 | | 11.04 |
| 2 Scrapers | 367 | 0.48 | 8 | 472.85 | 0.15 | | |
| Employee Trips (total miles)[4] | | 12,000 | | | | 380.48 | 4.57 |
| **Construction** | | | | | | | |
| 1 Crane | 231 | 0.29 | 7 | 472.96 | 0.15 | | 67.07 |
| 3 Forklifts | 89 | 0.2 | 8 | 473.06 | 0.15 | | 61.12 |
| 1 Generator | 84 | 0.74 | 8 | 568.30 | 0.02 | | 84.87 |
| 3 Tractors/Loaders/Backhoes | 97 | 0.37 | 7 | 476.73 | 0.15 | | 108.66 |
| 1 Welder | 46 | 0.45 | 8 | 568.30 | 0.06 | | 28.31 |
| Employee Trips (total miles)[4] | | 1,260,000 | | | | 380.48 | 479.41 |
| **Paving[4]** | | | | | | | |
| 2 Pavers | 130 | 0.42 | 8 | 472.66 | 0.15 | | 8.33 |
| 2 Paving Equipment | 132 | 0.36 | 8 | 470.66 | 0.15 | | 7.21 |
| 2 Rollers | 80 | 0.38 | 8 | 474.01 | 0.15 | | 4.65 |
| Employee Trips (total miles)[4] | | 6,000 | | | | 380.48 | 2.28 |
| **Construction GHG Emissions** | | | | | | | **913** |

Source:

[1] Construction equipment list from CalEEMod.

[2] Hours per normal work day.

[3] Off-Road Emission factors provided from California Air Resources Board OFFROAD2011 emission factors, as sourced from CalEEMod Default Data

[4] On-Road Emission Factors from MOVES4 for Passenger Truck (31)

**Table 7a**
Alternative A

| Pollutant/GHG | Net MMscf/year | Emission Factors (lb/MMscf) | Conversion factor (lb/tons) | Emissions (tons) |
|---|---|---|---|---|
| VOC | 3.6 | 5.5 | 0.0005 | 0.01 |
| NOx | 3.6 | 0.64 | 0.0005 | 0.00 |
| CO | 3.6 | 84 | 0.0005 | 0.15 |
| $SO_2$ | 3.6 | 0.6 | 0.0005 | 0.00 |
| $PM_{10}$ | 3.6 | 7.6 | 0.0005 | 0.01 |
| $PM_{2.5}$ | 3.6 | 7.6 | 0.0005 | 0.01 |
| **Greenhouse Gas** | | | **lb/MT** | **MT** |
| $CO_2$ | 3.6 | 120,000 | 0.00045 | 194 |

Stationary Sources include boilers, stoves, heating units, and other equipment. Includes reduction of 1.3 MMscf/year for existing casino, which will close.

Source: AP 42, Tables 1.4-1 and 1.4-2 (EPA, 1998), USEIA, 2022.

**Table 7b**
Alternative B

| Pollutant/GHG | Net MMscf/year | Emission Factors (lb/MMscf) | Conversion factor (lb/tons) | Emissions (tons) |
|---|---|---|---|---|
| VOC | 2.4 | 5.5 | 0.0005 | 0.01 |
| NOx | 2.4 | 0.64 | 0.0005 | 0.00 |
| CO | 2.4 | 84 | 0.0005 | 0.10 |
| $SO_2$ | 2.4 | 0.6 | 0.0005 | 0.00 |
| $PM_{10}$ | 2.4 | 7.6 | 0.0005 | 0.01 |
| $PM_{2.5}$ | 2.4 | 7.6 | 0.0005 | 0.01 |
| **Greenhouse Gas** | | | **lb/MT** | **MT** |
| $CO_2$ | 2.4 | 120,000 | 0.00045 | 130 |

Stationary Sources include boilers, stoves, heating units, and other equipment. Includes reduction of 1.3 MMscf/year for existing casino, which will close.

Source: AP 42, Tables 1.4-1 and 1.4-2 (EPA, 1998), USEIA, 2022.

**Table 8a Indirect GHG Emissions**

Alternative A

| Sources | Emission Factors | | | Use | Emissions |
|---|---|---|---|---|---|
| | $CO_2$ | $CH_4$ | $N_2O$ | | (MT of $CO_2e$) |
| | lbs of/MWh | | | Net MWh | |
| Electricity | 995.8 | 0.107 | 0.015 | 1,658 | 753.93 |
| | MT of $CO_{2e}$/MT of Solid Waste | | | MT of Solid Waste | |
| Solid Waste | 0.503 | | | 358.00 | 180.07 |
| Water/Wastewater | MT of CO2e/Million Gallons | | | Million Gallons | |
| | 6.428 | | | 4.76 | 30.60 |
| **Total** | | | | | **965** |

Source: Electricity based on U.S. Energy Information Administration, 2018 Commercial Buildings Energy Consumption Survey.

**Table 8b Indirect GHG Emissions**

Alternative B

| Sources | Emission Factors | | | Use | Emissions |
|---|---|---|---|---|---|
| | $CO_2$ | $CH_4$ | $N_2O$ | | (MT of $CO_2e$) |
| | lbs of/MWh | | | Net MWh | |
| Electricity | 995.8 | 0.107 | 0.015 | 1,172 | 532.94 |
| | MT of $CO_{2e}$/MT of Solid Waste | | | MT of Solid Waste | |
| Solid Waste | 0.503 | | | 310.00 | 155.93 |
| Water/Wastewater | MT of CO2e/Million Gallons | | | Million Gallons | |
| | 6.428 | | | 3.01 | 19.35 |
| **Total** | | | | | **708** |

Sources: Electricity based on U.S. Energy Information Administration, 2018 Commercial Buildings Energy Consumption Survey.

# Potential To Emit Calculator for Boilers

7/1/2016

## Emissions from Emergency Generator/Engine - Criteria Pollutants

Engine Size: 1609 hp

Diesel Used: Y

Purple values are pulled from other worksheet
Blue values are results

**Worst Case PTE (ton/yr)**

| Pollutant | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| PM | $PM_{10}$ | $PM_{2.5}$ | $SO_2$ | $NO_X$ | CO | VOC | CO2 | Single HAP | Combined HAP |
| **0.01** | **0.01** | **0.01** | **0.00** | **0.31** | **0.07** | **0.01** | **14.80** | **0.02** | **0.05** |

---

**Engine Type:** **Diesel (> 600 hp)** Used: Y Sulfur Content: 0.00 %

| | Pollutant | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PM | $PM_{10}$ | $PM_{2.5}$[2] | $SO_2$ | $NO_X$ | CO | VOC[3] | CO2 | Single HAP | Combined HAP |
| Emission Factor[1] (lbs/hp-hr) | 0.0007 | 0.0007 | 0.0007 | 1.21E-05 | 0.024 | 5.50E-03 | 7.05E-04 | 1.15 | 0.00118 | 0.0038 |
| Limited PTE (ton/yr) | **0.01** | **0.01** | **0.01** | **0.00** | **0.31** | **0.07** | **0.01** | **14.80** | **0.02** | **0.05** |

**Note:**

1. Emission factors are from Chapter 3.4, Tables 3.4-1 and 3.4-2 for Large Stationary Diesel and Dual Fuel Engines (updated 10/96).
2. Assume $PM_{2.5}$ emissions are equal to $PM_{10}$ emissions.
3. Assume TOC (total organic compounds) emissions equal to VOC emissions.
4. Assume 500 hours/yr of operation for an emergency engine

**Methodology**

PTE (ton/yr) = Engine Capacity (hp) x EF (lb/hp-hr) x 8760 hr x 1 ton/2000 lb

# Potential To Emit Calculator for Gasoline Dispensing Facilities - Inputs

3/23/2015

**This workbook is designed to calculate the potential to emit of your gasoline dispensing facility.**
The gasoline dispensing facility (GDF) owner/operator shall provide two pieces of information. These include whether or not the GDF is in a designated ozone nonattainment area and the number of vehicle refueling positions at the GDF for both gasoline and diesel vehicles. Ozone attainment/nonattainment designation status can be found at

Directions - Enter the facility's information in the yellow-highlighted boxes below.

The facility wide emissions will be displayed on the "Output" sheet.

**Facility Profile - User Inputs**

**What is the number of gasoline only refueling positions at your dispensing facility?** **0**

A vehicle refueling position is a single gasoline dispensing machine and its associated nozzle(s). The total number of vehicle refueling positions at your GDF is the number of gasoline-fueled vehicles that can be refueled simultaneously.

**What is the number of automotive/ nonroad diesel only refueling positions at your facility?** 0

A vehicle refueling position is a single diesel fuel dispenser and its associated nozzle(s). The total number of automotive/nonroad only diesel refueling positions at your facility is the number of automotive-type vehicles (passenger car, light truck)or nonroad equipment that can be refueled simultaneously. This count would include free standing aboveground tanks used to refuel nonroad equipment.

**What is the number of dispensers capable of refueling with either gasoline or diesel?** 8

These are normally multi-grade dispensers with separate gasoline and diesel fuel nozzles on the same dispenser. These are used primarily to refuel automotive and light truck type vehicles.

**What is the number of heavy-duty (HD) truck diesel refueling positions at your facility?** 0

A HD truck (e.g., over the road) refueling position is a single diesel fuel dispenser and its associated nozzle(s). The total number of HD truck refueling positions at your facility is the number of HD trucks that can be refueled simultaneously.

Ozone designation status can be found at http://www.epa.gov/oar/oaqps/greenbk/hindex.html or co attainment
Enter either **attainment** or **nonattainment**.

**What is the current year?** **2026**
Enter the current year (a number between 2013 and 2030).

# Potential To Emit Calculator for Gasoline Dispensing Facilities - Outputs

3/23/2015

| | |
|---|---|
| **Potential to Emit (tons VOC/year)** | **1.414** |

**This facility is located in a ozone attainment area.**

Appendix G

# Traffic Impact Analysis

# TRAFFIC IMPACT ANALYSIS

## Cherokee Nation Bartlesville 14.993-acre Gaming and Fee-to-Trust Project

## Bartlesville, Oklahoma

**Prepared for:**

**Cherokee Nation**

**February 2024**

**Prepared by:**

**Traffic Engineering Consultants, Inc.**

**B.J. Hawkins, P.E., PTOE**
**Oklahoma P.E. # 25164**
**CA # 1160**

**2 / 7 / 2024**

**Date**

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## 1.0 INTRODUCTION

Traffic Engineering Consultants, Inc. (TEC) was retained to conduct a traffic impact analysis (TIA) for a proposed casino development to be constructed in Washington County, Oklahoma. The analysis was requested to determine the effects the proposed development would have on the adjacent street system, to review the available access to the development, and to provide recommendations for improvements that may be necessary to accommodate the trips expected to be generated by the development.

## 2.0 BACKGROUND

### 2.1 PROPOSED DEVELOPMENT

The site of the proposed development is located east of US-75 between Price Road and Rice Creek Road/W 2200 Road as shown in **Figure 1**. The development centers around a casino which will also include a hotel and gas station with convenience store. The development is assumed to be constructed in a single phase and is anticipated to be completed in 2026. Access to the new development, as shown in **Figure 2**, is proposed via three full-access drives on US-75. Drive #1 will provide access to the gas station/convenience store, Drive #2 will serve as the main entrance to the casino and hotel, and Drive #3 will serve as the service entrance to the casino and hotel.

### 2.2 ADJACENT ROADWAY NETWORK

US-75 is a five-lane state highway with a posted speed limit of 45 miles per hour (mph) north of Atwoods and 50 mph south of Atwoods. It carries an approximate average daily traffic (ADT) of 20,300 vehicles per day (vpd). Price Road is a two-lane undivided collector west of US-75 and varies between a two-, three-, and four-lane collector east of US-75 with a posted speed limit of 35 mph. Camelot Drive is a two-lane undivided collector with a posted speed limit of 25 mph. Southport Drive is a two-lane undivided local street with a posted speed limit of 25 mph. Rice Creek Road/W 2200 Road is a two-lane undivided collector with a posted speed limit of 40 mph west of US-75 and 45 mph east of US-75.

### 2.3 STUDY INTERSECTIONS

The TIA evaluated and analyzed four intersections in the vicinity of the site to determine the impact the future development would have on the surrounding roadway infrastructure. The study intersections are indicated in Figure 1.

**LEGEND**

= Study Intersection

FIGURE 1. Site Location Map
Bartlesville, Oklahoma

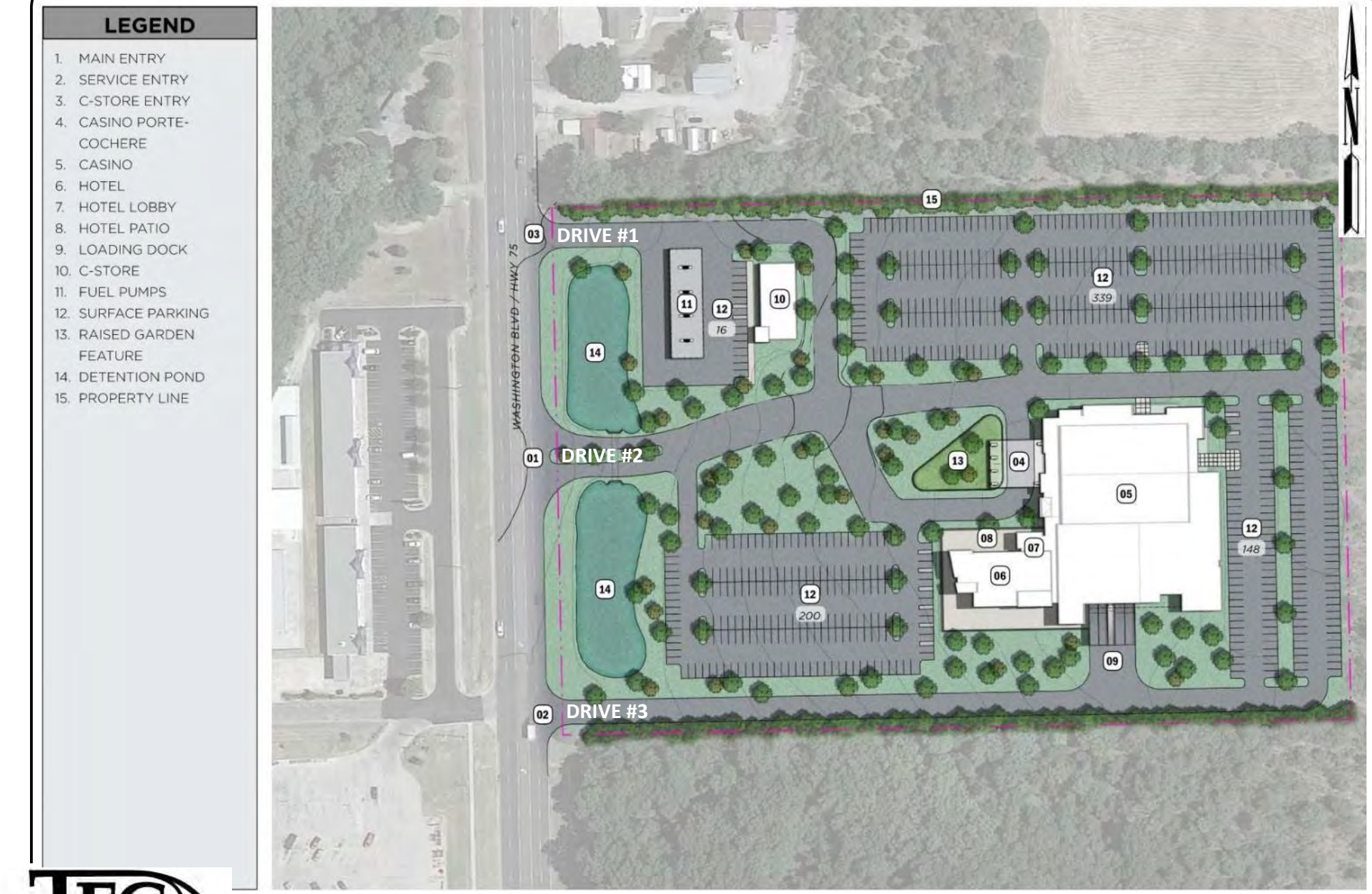



FIGURE 2. Proposed Site Plan

The intersection of Price Road and US-75 is signalized with exclusive left-turn lanes on all four approaches that operate with protected-plus-permitted signal phasing, and exclusive right-turn lanes on all approaches except the westbound approach. The exclusive right-turn lanes are channelized with yield signs.

The intersection of Camelot Drive/Southport Drive and US-75 is signalized with exclusive left-turn lanes on all four approaches that operate with protected-plus-permitted signal phasing, and an exclusive right-turn lane only on the southbound approach which operates with permitted-plus-overlap phasing.

The intersection of the shared Atwoods Drive and US-75 is unsignalized with stop control on the eastbound single lane approach. The northbound and southbound approaches include a center turn lane for left-turn movements.

The intersection of Rice Creek Road/W 2200 Road and US-75 is unsignalized with stop control on the eastbound and westbound single lane approaches. The northbound and southbound approaches include a center turn lane for left-turn movements.

## 3.0 BACKGROUND TRAFFIC

### 3.1 EXISTING TRAFFIC

Existing traffic volume data was collected adjacent to the proposed development in December 2023 while schools were in session. Weekday, Friday, and Saturday peak hour turning movement volumes were collected at the study intersections of US-75 at Price Road, Camelot Drive/Southport Drive, Rice Creek Road/W 2200 Road, and the shared Atwoods Drive, as shown in Figure 1. Additionally, twenty-four hour turning movement volumes were collected at the intersection of US-75 and the shared Atwoods Drive. The data collected indicated the weekday a.m. peak hour varied by intersection and generally occurred from 7:45 – 8:45. The weekday, Friday, and Saturday p.m. peak hours also varied by intersection and generally occurred from 4:15 – 5:15. The Friday and Saturday p.m. peak hours typically correspond to the peak periods of the week for a casino development.

Given the traffic characteristics in the area and the anticipated trip generation for the proposed development, the weekday, Friday, and Saturday peak periods would represent a “worst-case scenario”

with regards to traffic impact on the surrounding roadway network. If traffic operations are acceptable during these weekday peak hours, it can be reasoned that conditions would be acceptable throughout the remainder of the day and week when the surrounding roadway traffic is lighter. The 2023 existing traffic is summarized in **Figure 3** and detailed printouts of all the traffic count data are included in the appendix.

### 3.2 FUTURE BACKGROUND TRAFFIC

The 2023 existing traffic was then utilized to determine the background traffic for 2026 and 2046. The 2026 design period was selected as the estimated completion year of the development and the 2046 design period was selected as the horizon year, 20 years after build-out. The background traffic was determined for the 2026 and 2046 design years by applying an average annual growth rate of 4.0% to the 2023 existing traffic. The 4.0% annual growth rate was determined by averaging previous ODOT annual average daily traffic (AADT) counts in the study area since 2015 and will represent the assumed annual growth in the area in addition to the proposed site trips. The 2026 and 2046 projected background traffic is summarized in **Figures 4** and **5**, respectively.

## 4.0 PROPOSED SITE TRIPS

To determine the effects a new development will have on an existing street system, new or additional trips must be projected. The ITE *Trip Generation Manual*, 11$^{th}$ edition, was used to determine the number of trips the site is expected to generate. The report is a nationally accepted reference which provides trip rates for determining the trips expected to be generated by different land use types.

Available information was utilized regarding the anticipated land uses to determine the site generated trips. The *Hotel* and *Gasoline/Service Station* land use categories were selected to determine the trip generation for the site. The current ITE trip rates for the casino/video gaming land uses include a small number of video lottery establishments less than 5,000 square feet in size. Since the proposed casino is 54,391 square feet in size it was determined that other data must be referred to.

TEC previously collected daily and peak hour ingress and egress traffic volumes at comparable casino developments in Oklahoma. The casinos are located in Lawton, Bartlesville, Ponca City, Ramona, Okemah, Thackerville, and Tahlequah and range in size from 10,000 square feet to 73,000 square feet. The trip rate information from the casinos

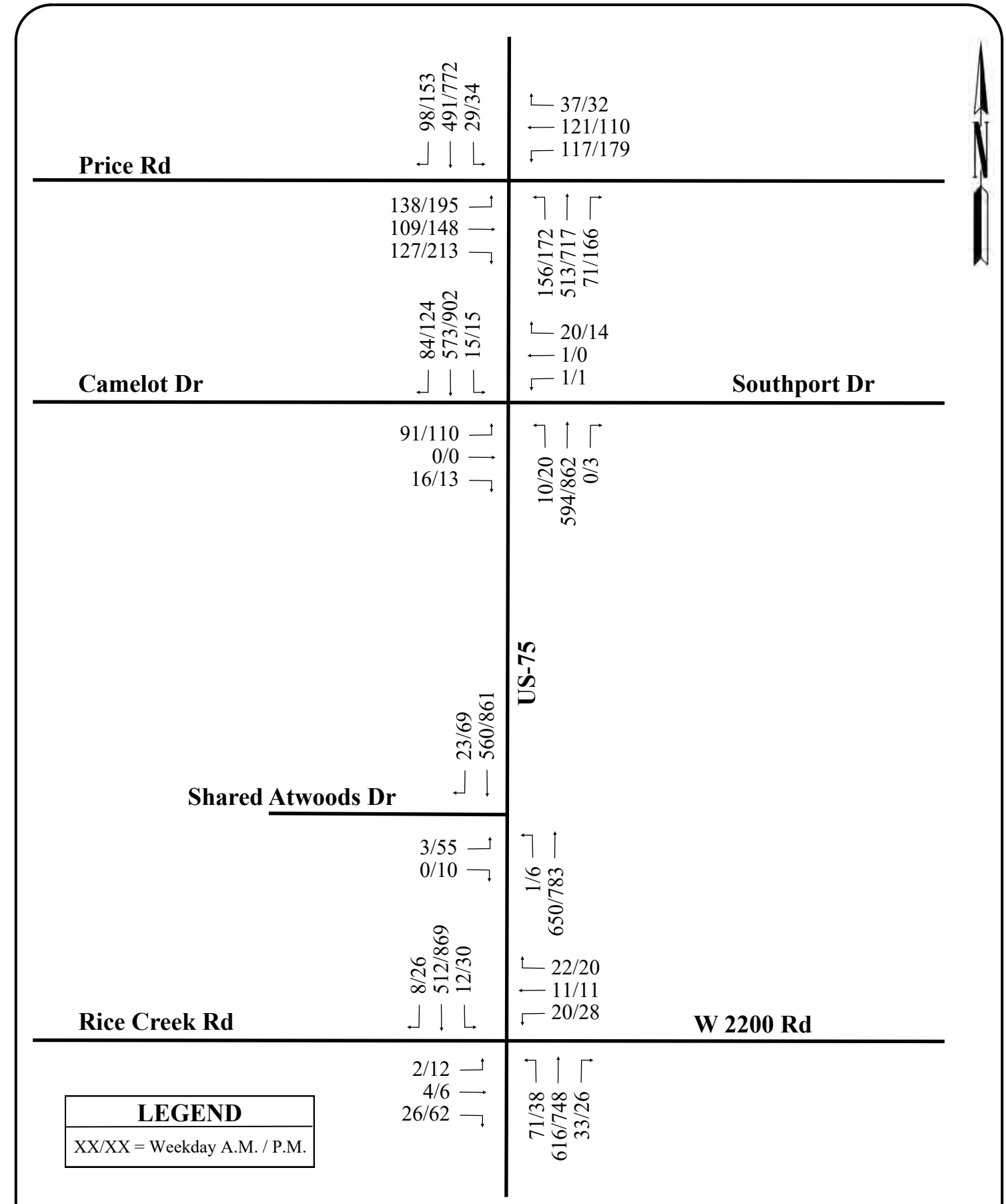



FIGURE 3A. 2023 Existing Traffic
US-75/Washington Boulevard
Bartlesville, OK

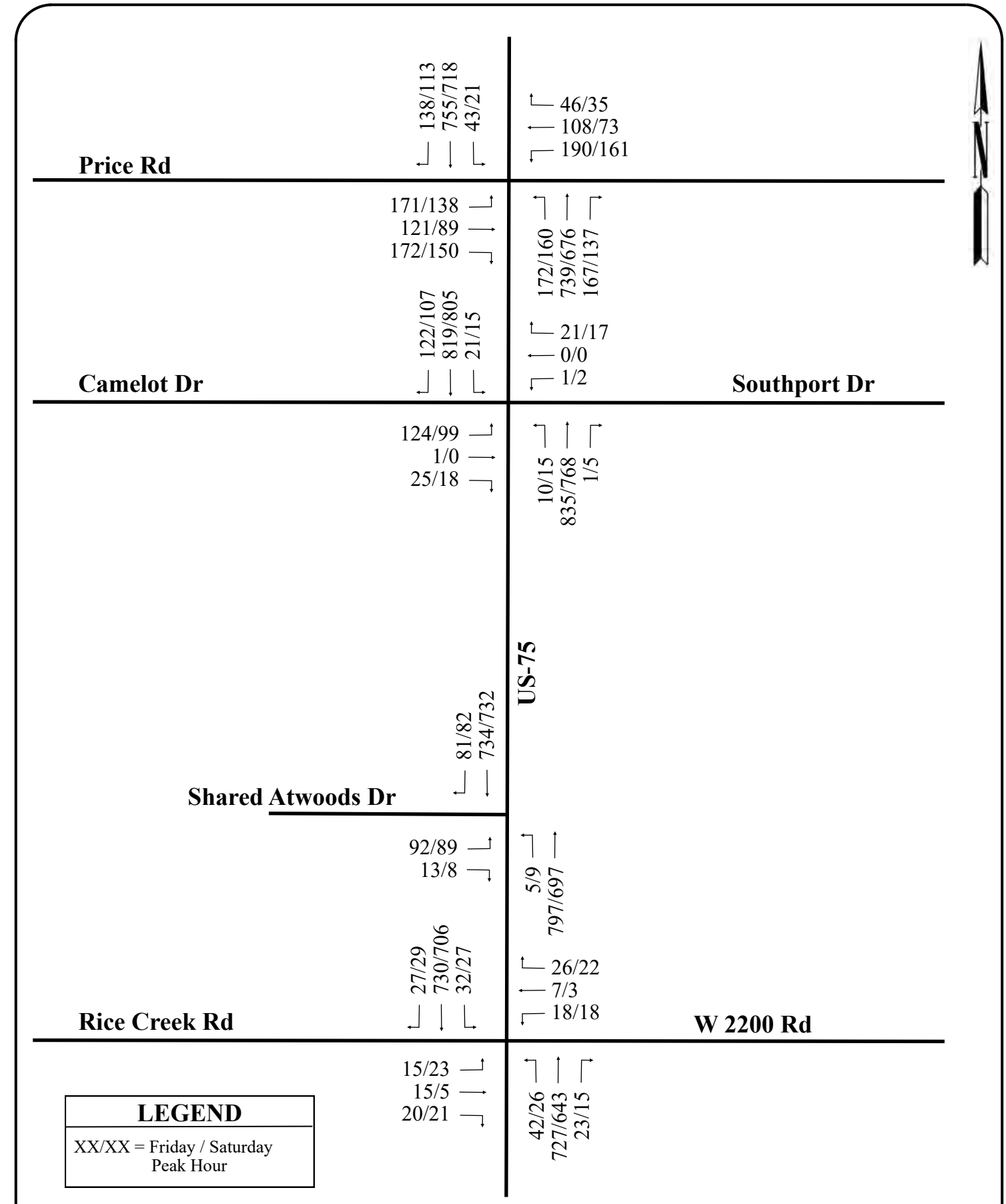



FIGURE 3B. 2023 Existing Traffic
US-75/Washington Boulevard
Bartlesville, OK

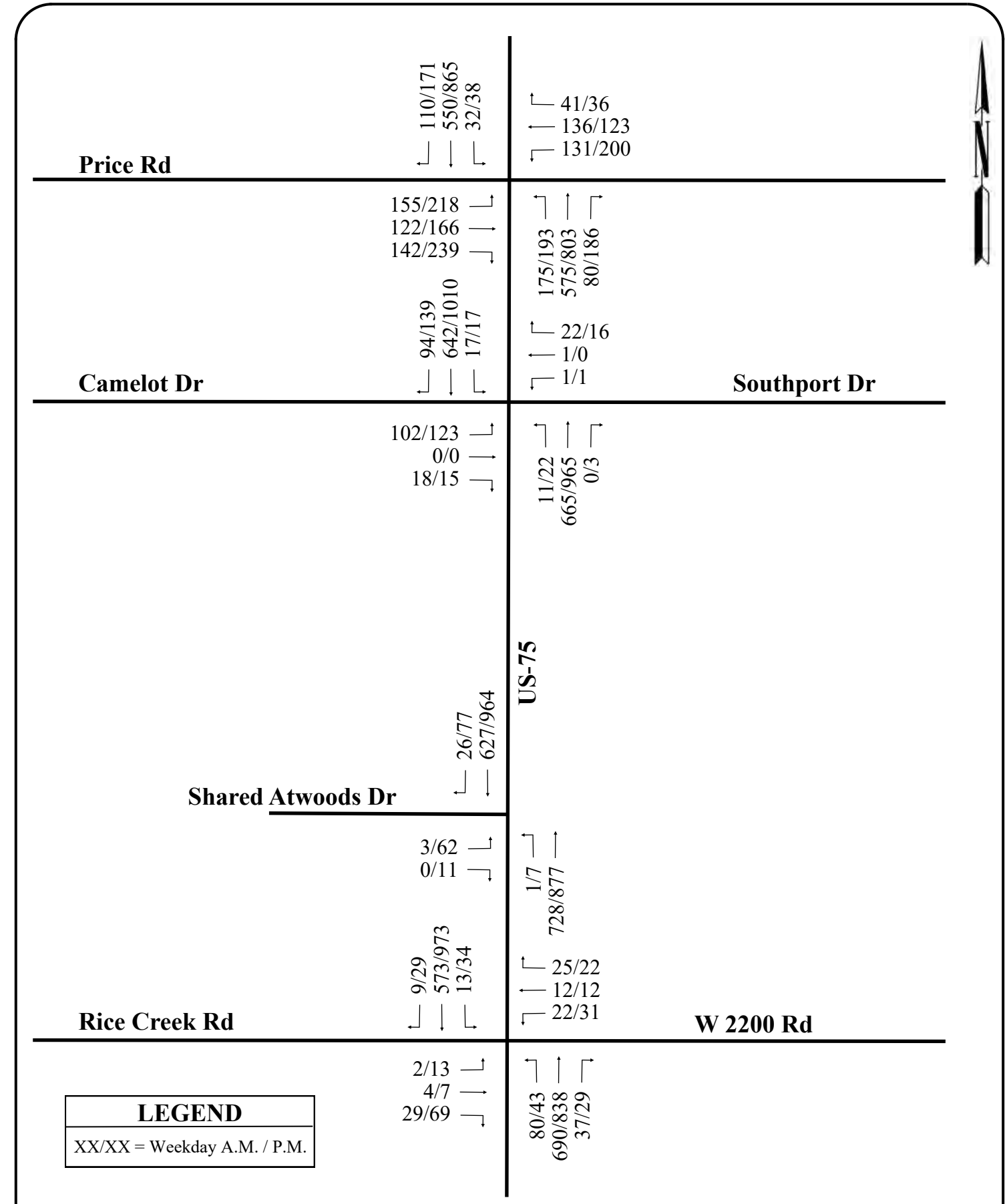



FIGURE 4A. 2026 Future Background Traffic
US-75/Washington Boulevard
Bartlesville, OK

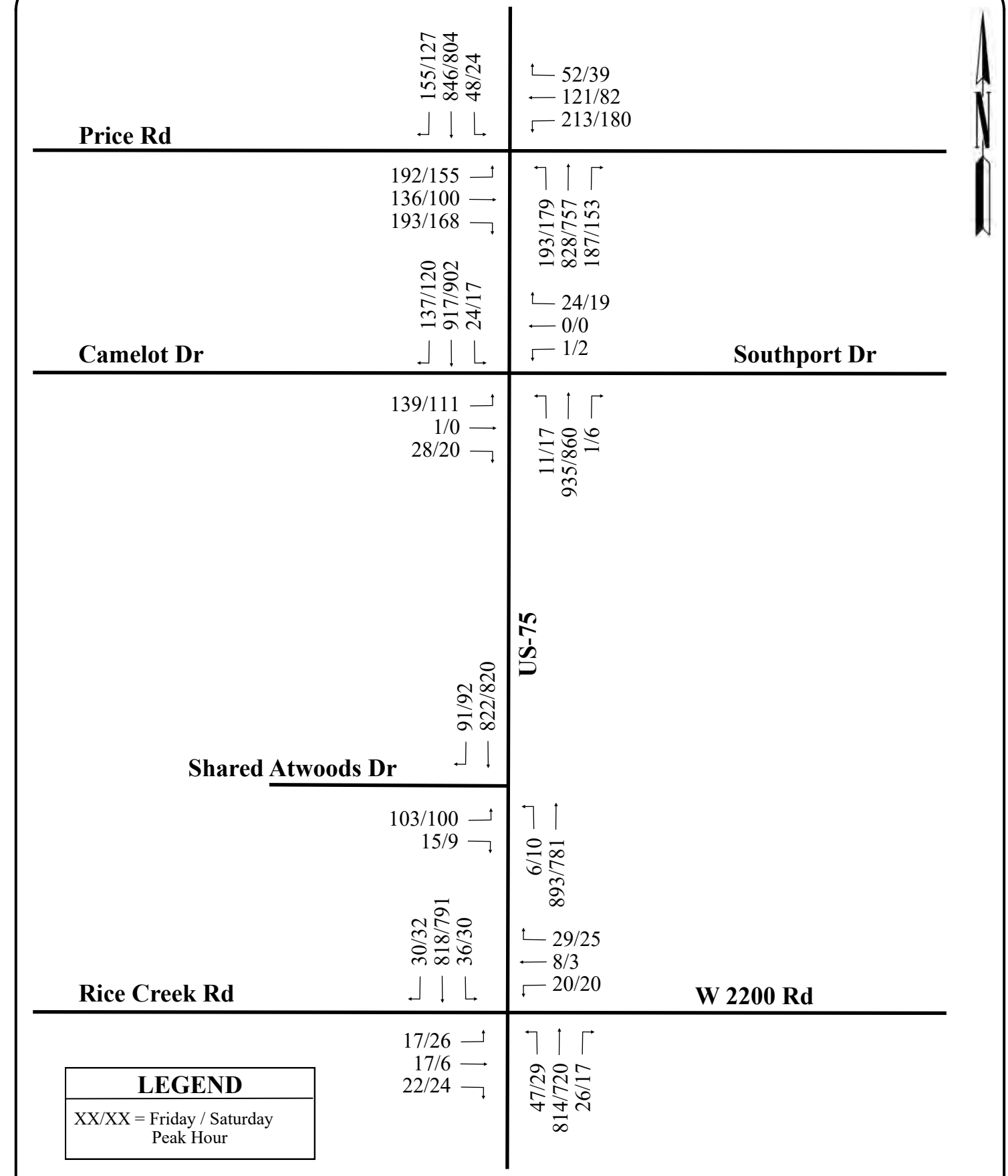



FIGURE 4B. 2026 Future Background Traffic
US-75/Washington Boulevard
Bartlesville, OK

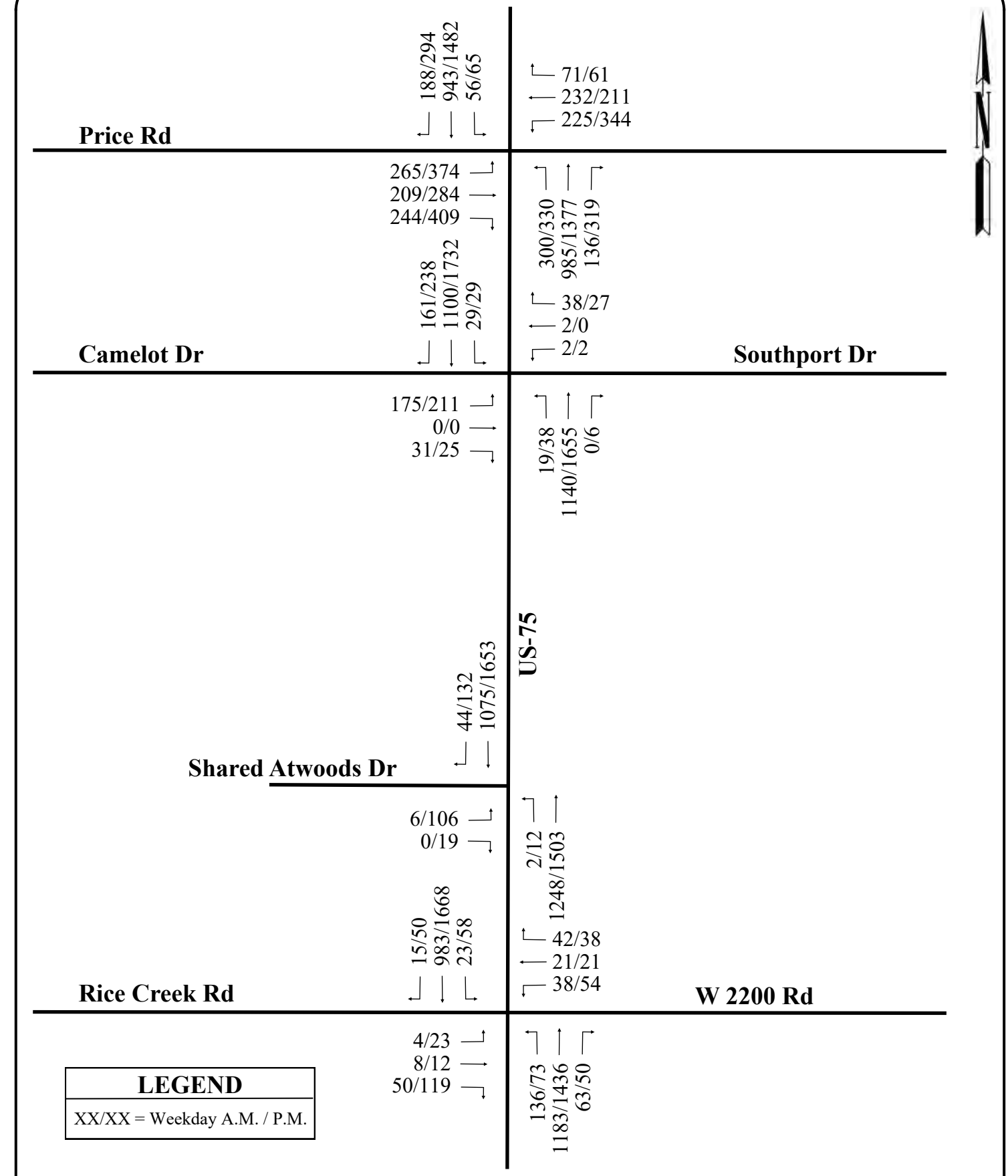



FIGURE 5A. 2046 Future Background Traffic
US-75/Washington Boulevard
Bartlesville, OK

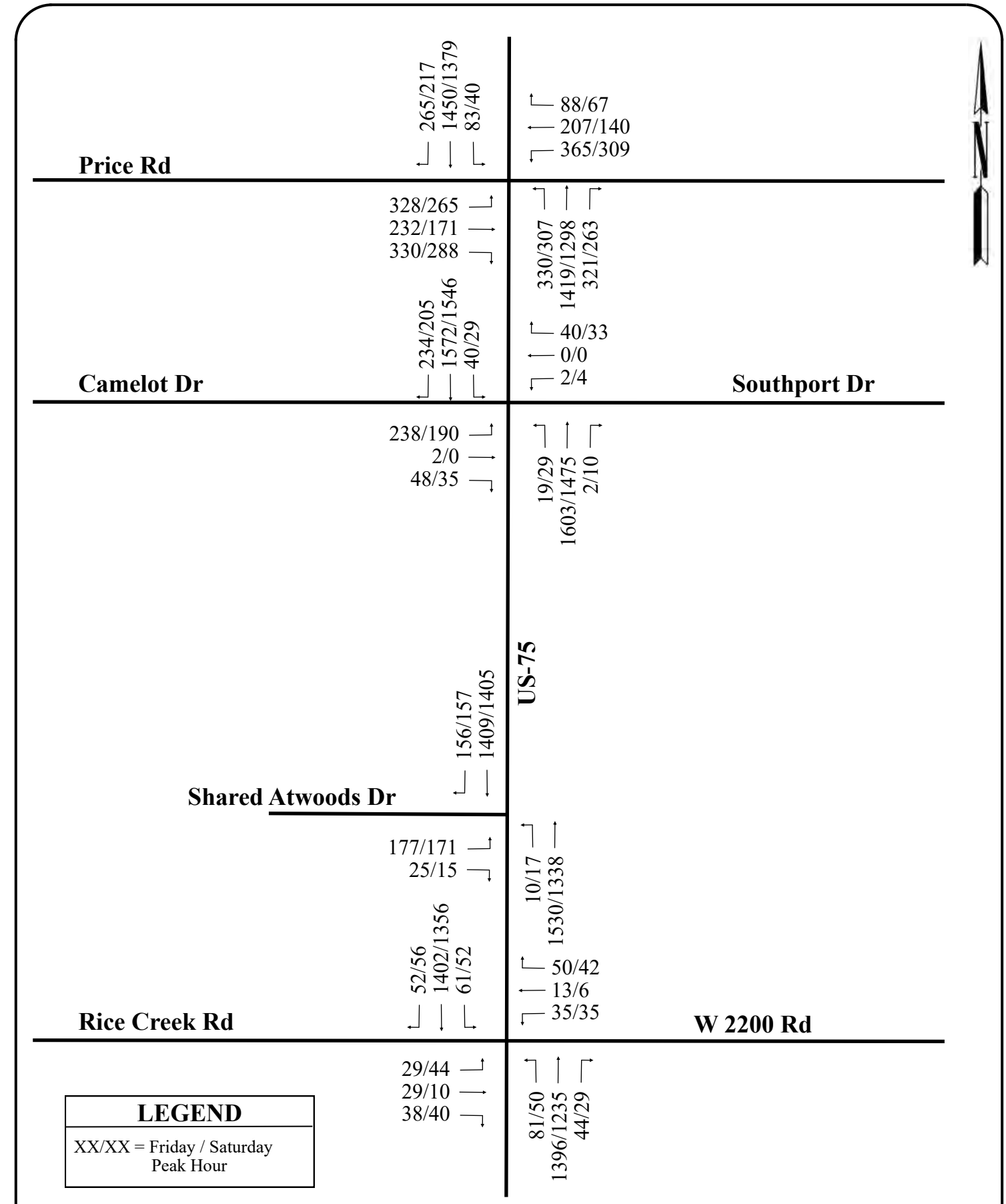



FIGURE 5B. 2046 Future Background Traffic
US-75/Washington Boulevard
Bartlesville, OK

was averaged for weekdays and weekends (depending on the data available) to provide the best representation for the proposed casino. Based on the information, the trip rates selected for the proposed casino was determined to be 105.66 vehicles per weekday, 3.52 vehicles per hour during the a.m. peak hour, and 7.86 vehicles per hour during the p.m. peak hour per 1,000 square feet of casino. The weekend trip rates were determined to be 115.77 vehicles per day per 1,000 sf of casino and 9.02 vehicles per hour per 1,000 sf of casino during the Friday and Saturday peak hours.

The resulting trips projected to be generated by the proposed site once fully constructed and operational are indicated in **Tables 1** and **2** for the weekday and weekend periods, respectively.

## TABLE 1

PROJECTED SITE GENERATED TRAFFIC VOLUMES - WEEKDAY

| Building Type (Land Use) | ITE Land Use Code | Approximate Gross Floor Area or Other | Average Weekday Vehicle Trip Ends | | | Average AM Peak Hour Directional Distribution | | Average AM Peak Hour Directional Volume (vph) | | Average PM Peak Hour Directional Distribution | | Average PM Peak Hour Directional Volume (vph) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Per Day | Per Peak Hour of Adjacent Street Traffic | | | | | | | | | |
| | | | | One Hour Between 7am & 9am | One Hour Between 4pm & 6pm | | | | | | | | |
| | | | (vpd) | (vph) | (vph) | IN | OUT | IN | OUT | IN | OUT | IN | OUT |
| Trip Rate* | | (sf) | 105.66 | 3.52 | 7.86 | | | | | | | | |
| Proposed Casino | --- | 54,391 | 5,747 | 191 | 428 | 0.58 | 0.42 | 111 | 80 | 0.49 | 0.51 | 209 | 219 |
| Trip Rate** | | (rooms) | 7.99 | 0.46 | 0.59 | | | | | | | | |
| Hotel | 310 | 40 | 320 | 18 | 24 | 0.56 | 0.44 | 10 | 8 | 0.51 | 0.49 | 12 | 12 |
| Trip Rate** | | (fueling positions) | 172.01 | 10.28 | 13.91 | | | | | | | | |
| Gasoline/Service Station | 944 | 8 | 1,376 | 82 | 111 | 0.50 | 0.50 | 41 | 41 | 0.50 | 0.50 | 56 | 55 |
| Sub-Totals | | | 7,443 | 291 | 563 | | | 162 | 129 | | | 277 | 286 |

| Reduction Type | Reduction Amount (%) | AM Peak Hour Reduction IN | AM Peak Hour Reduction OUT | AM Peak Hour Total Development Volume IN | AM Peak Hour Total Development Volume OUT | PM Peak Hour Reduction IN | PM Peak Hour Reduction OUT | PM Peak Hour Total Development Volume IN | PM Peak Hour Total Development Volume OUT |
|---|---|---|---|---|---|---|---|---|---|
| Internal Capture | 50 | 5 | 4 | 131 | 99 | 6 | 6 | 239 | 249 |
| Pass-By Reduction*** | 63% am/57% pm | 26 | 26 | | | 32 | 31 | | |
| **Total Site Generated Volumes** | **7,283** | | | | | | | | |

* Trip Rate determined by averaging traffic data previously collected at casinos in Okemah, Ramona, Ponca City, Bartlesville, and Lawton.

** Trip Rates from "TRIP GENERATION MANUAL", 11th Ed., Institute of Transportation Engineers.

*** Pass-By Trips reduction was based on the latest research data provided in the "TRIP GENERAL MANUAL", 11th Ed., Institute of Transportation Engineers. It indicated pass-by percentages of 63% and 57% for Gasoline/Service Station land use during the a.m. and p.m. peak hours, respectively.

The proposed site is expected to generate 7,443 vehicle trips per day during a typical weekday with 162 entering and 129 exiting vehicles during the a.m. peak hour and 277 entering and 286 exiting vehicles during the p.m. peak hour before accounting for any trip reductions.

## TABLE 2

PROJECTED SITE GENERATED TRAFFIC VOLUMES - WEEKEND

| Building Type (Land Use) | ITE Land Use Code | Approximate Gross Floor Area or Other | Average Weekend Vehicle Trip Ends | | | Average Friday Peak Hour Directional Distribution | | Average Friday Peak Hour Directional Volume (vph) | | Average Saturday Peak Hour Directional Distribution | | Average Saturday Peak Hour Directional Volume (vph) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Per Day | Per Peak Hour As Noted | | | | | | | | | |
| | | | | Weekday PM Peak Hour of Adjacent Street Traffic | Saturday Peak Hour Of Generator | | | | | | | | |
| | | | (vpd) | (vph) | (vph) | IN | OUT | IN | OUT | IN | OUT | IN | OUT |
| Trip Rate* | | (sf) | 115.77 | 9.02 | 9.02 | | | | | | | | |
| Proposed Casino | --- | 54,391 | 6,297 | 491 | 491 | 0.52 | 0.48 | 255 | 236 | 0.52 | 0.48 | 255 | 236 |
| Trip Rate** | | (rooms) | 8.07 | 0.59 | 0.72 | | | | | | | | |
| Hotel | 310 | 40 | 323 | 24 | 29 | 0.51 | 0.49 | 12 | 12 | 0.56 | 0.44 | 16 | 13 |
| Trip Rate** | | (fueling positions) | 182.17 | 13.91 | 12.77 | | | | | | | | |
| Gasoline/Service Station | 944 | 8 | 1,457 | 112 | 102 | 0.50 | 0.50 | 56 | 56 | 0.50 | 0.50 | 51 | 51 |
| Sub-Totals | | | 8,077 | 627 | 622 | | | 323 | 304 | | | 322 | 300 |

| Reduction Type | Reduction Amount (%) | AM Peak Hour | | | | PM Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Reduction | | Total Development Volume | | Reduction | | Total Development Volume | |
| | | IN | OUT | IN | OUT | IN | OUT | IN | OUT |
| Internal Capture | 50 | 6 | 6 | | | 8 | 7 | | |
| Pass-By Reduction*** | 57% Friday pm/49% Saturday pm | 32 | 32 | | | 25 | 25 | | |
| **Total Site Generated Volumes** | **7,916** | | | **285** | **266** | | | **289** | **268** |

Note: Peak hour trip generation rates for Hotel and Gasoline/Service Station for Saturday reflect peak hour of generator, since that is all that is currently available in the ITE Trip Generation Manual.

* Trip Rate determined by averaging traffic data previously collected at casinos in Tahlequah, Lawton, and Thackerville.

** Trip Rates from "TRIP GENERATION MANUAL", 11th Ed., Institute of Transportation Engineers.

*** Pass-By Trips reduction was based on the latest research data provided in the "TRIP GENERAL MANUAL", 11th Ed., Institute of Transportation Engineers. It indicated pass-by percentages of 57% and 49% for Gasoline/Service Station land use during the weekday p.m. and Saturday mid-day peak hours, respectively.

The proposed site is expected to generate 8,077 vehicle trips per day during a typical weekend day with 323 entering and 304 exiting vehicles during the Friday p.m. peak hour and 322 entering and 300 exiting vehicles during the Saturday peak hour before accounting for any trip reductions.

### 4.1 INTERNAL CAPTURE TRIP REDUCTION

The top portion of **Tables 1** and **2** indicate the total unadjusted trips for the land uses proposed for the site. However, due to the types of facilities and access they share, a reduction adjustment to the trips is recommended. It is expected that a high percentage of the hotel patrons would frequent the casino (or vice versa) and should, therefore, not be counted as new trips for each land use. These site generated trips are commonly referred to as *internal capture trips*. Internal capture trips would affect both the number of vehicles entering and exiting the site as well as the vehicles added to the surrounding street system.

Utilizing information from other sites located nationally, it was conservatively assumed that an internal capture reduction of 50% was applicable for the hotel trips.

## 4.2 DISTRIBUTION OF PROPOSED SITE TRIPS

The trips expected to be generated by the proposed development were then distributed among the surrounding street system as well as the points of access for the peak hours. The distribution of the site generated trips was determined separately for the individual land uses based on anticipated usage of the site, location of primary access, and traffic patterns in the area which were obtained from the traffic data that was collected for this study and is summarized in **Figures 6** and **7** for casino/hotel and gas station/convenience store, respectively. The directional distribution of the site generated trips for the proposed development is expected to be:

*Casino/Hotel*

- 50% to/from US-75 south of the development
- 45% to/from US-75 north of the development
- 5% to/from Price Road west of the development

*Gas Station/Convenience Store*

- 35% to/from US-75 north of the development
- 30% to/from US-75 south of the development
- 15% to/from Price Road west of the development
- 10% to/from Price Road east of the development
- 5% to/from Camelot Drive west of the development
- 2% to/from Rice Creek Road west of the development
- 2% to/from W 2200 Road east of the development
- 1% to/from Southport Drive east of the development

## 4.3 PASS-BY TRIP REDUCTION

Not all traffic entering and exiting the development drives would be new traffic added to the roadway network. Some land uses have been determined to attract a portion of their trips from traffic that is already on the roadway network passing the site. The number of new trips is dependent upon the purpose of the trip and the route used from its origin to its destination. This phenomenon is generally referred to

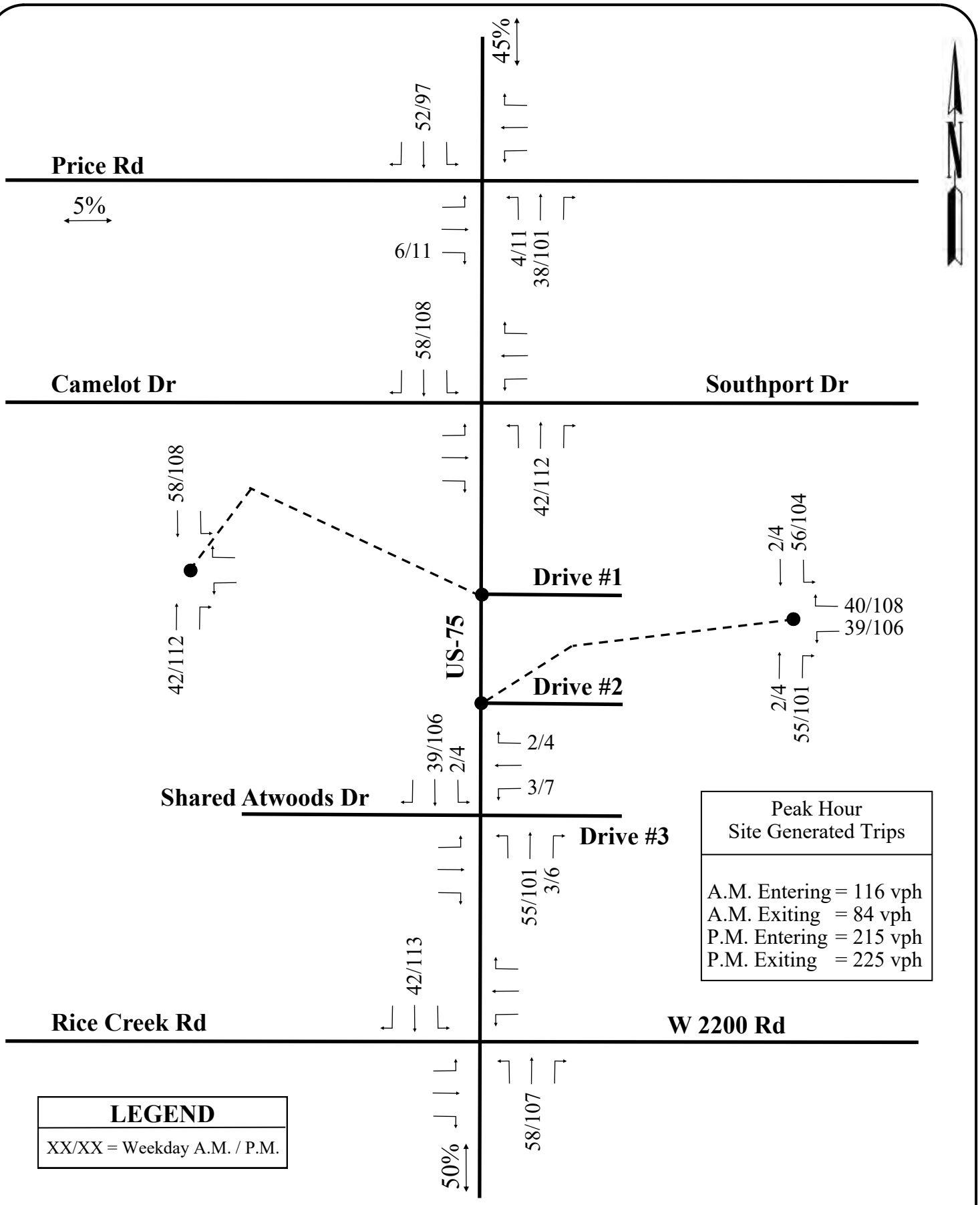



FIGURE 6A. Proposed Site Trips—Casino/Hotel
US-75/Washington Boulevard
Bartlesville, OK

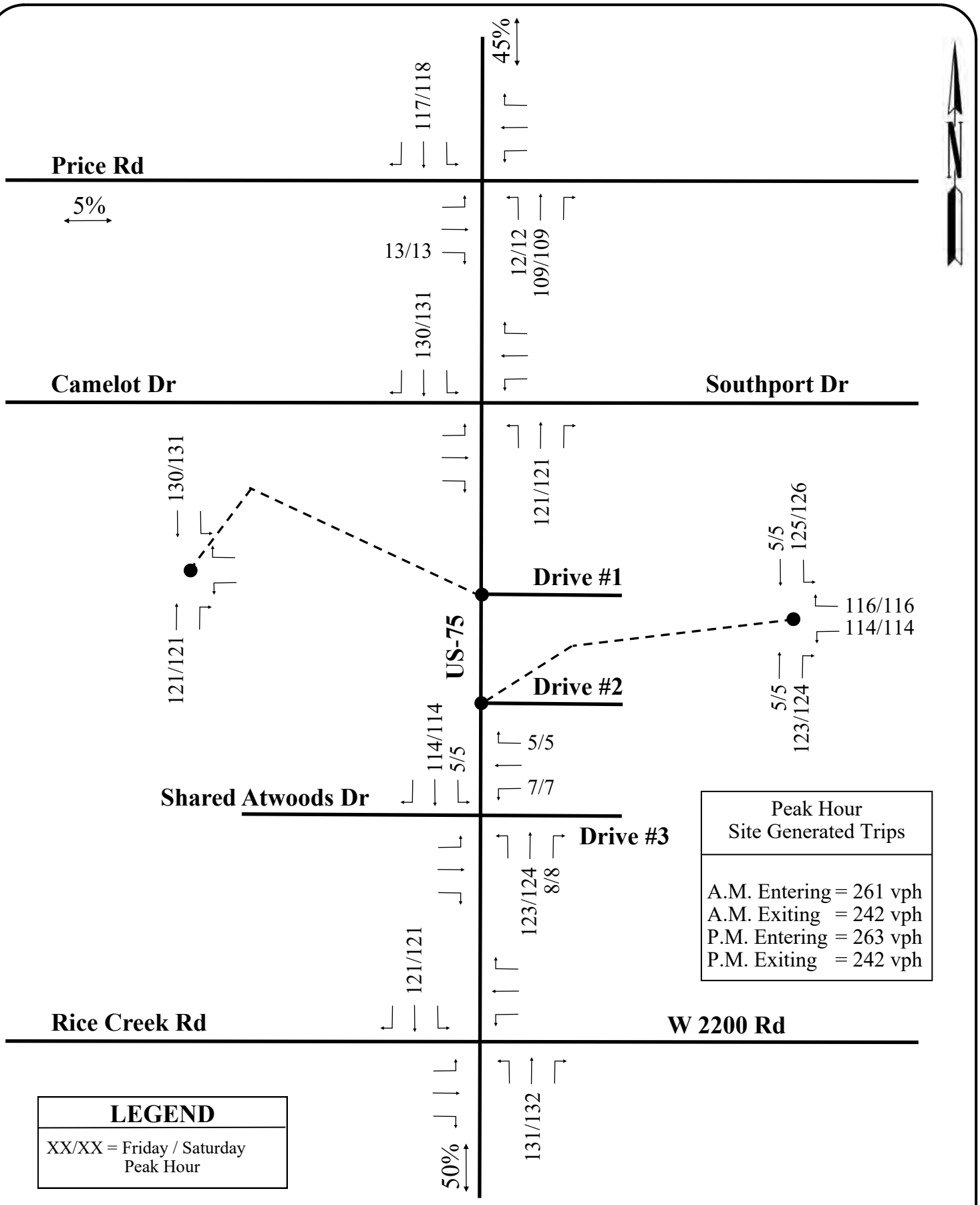



FIGURE 6B. Proposed Site Trips—Casino/Hotel
US-75/Washington Boulevard
Bartlesville, OK

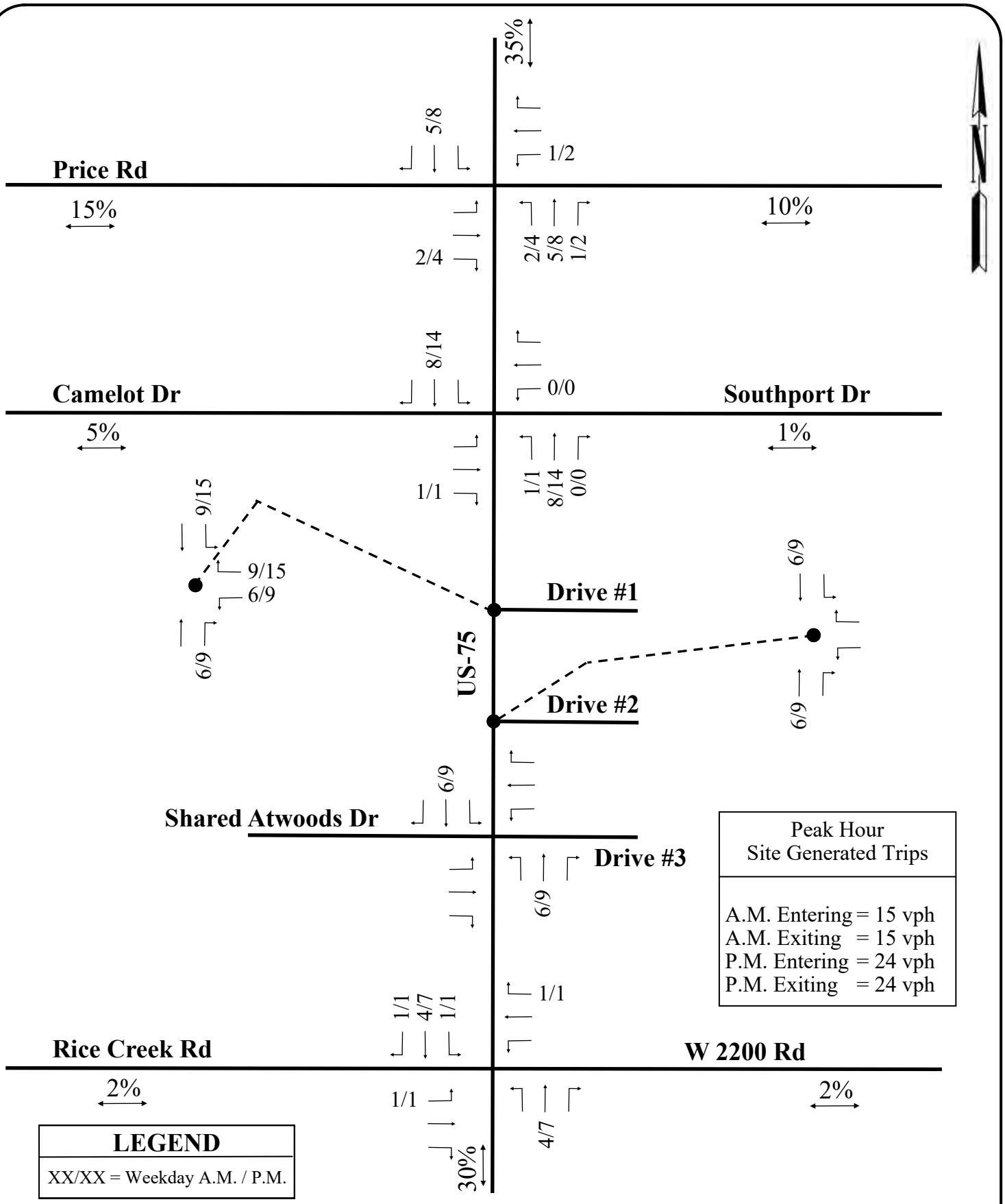



FIGURE 7A. Proposed Site Trips—Gas Station/ Convenience Store (Primary)
US-75/Washington Boulevard
Bartlesville, OK

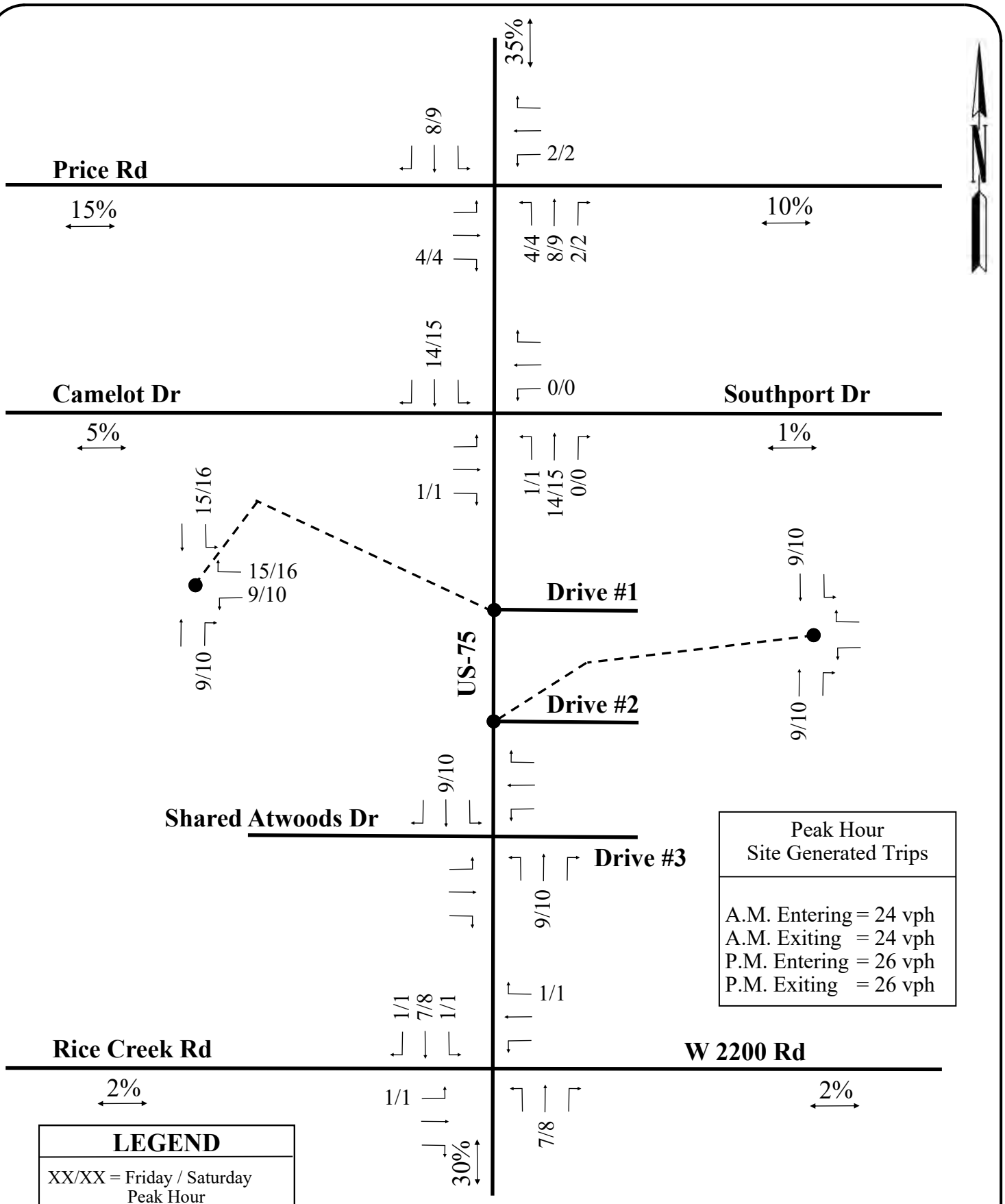



FIGURE 7B. Proposed Site Trips—Gas Station/ Convenience Store (Primary)
US-75/Washington Boulevard
Bartlesville, OK

as *pass-by trips.* Pass-by trips do not add new traffic to the adjacent roadway network but do affect the volumes at the development drives and adjacent intersections as vehicles divert from their route to turn into and out of the site to continue to their destination.

Given the type of development, it can be assumed that the majority of the proposed gasoline/service station traffic could be considered pass-by traffic. The *ITE Trip Generation Handbook* indicates an average of 63% of the a.m. peak hour site generated traffic, 57% of the p.m. peak hour site generated traffic, and 49% of the Saturday mid-day peak hour site generated traffic would come from pass-by trips for a gas station development. The pass-by trip reductions were determined for each movement and are summarized in **Figure 8**.

Once the reductions are made to the site generated trips for the pass-by trips, the site would be expected to add the following vehicle to the roadway network:

- 131 entering and 99 exiting vehicles during the a.m. peak hour
- 239 entering and 249 exiting vehicles during the p.m. peak hour
- 285 entering and 266 exiting vehicles during the Friday peak hour
- 289 entering and 268 exiting vehicles during the Saturday peak hour

The total number of trips expected to be generated from the proposed site is summarized in **Figure 9**.

## 4.4 TOTAL TRAFFIC

The projected site generated trips were then added to the background traffic for the 2026 design year. The 2026 total traffic volumes (2026 projected background traffic + total site generated trips) for each access point to the proposed development, as well as the surrounding street system, are summarized in **Figure 10**.

The projected site generated trips were then added to the background traffic for the 2046 horizon year. The 2046 total traffic volumes (2046 projected background traffic + total site generated trips) for the access points to the proposed development, as well as the surrounding street system, are summarized in **Figure 11**.

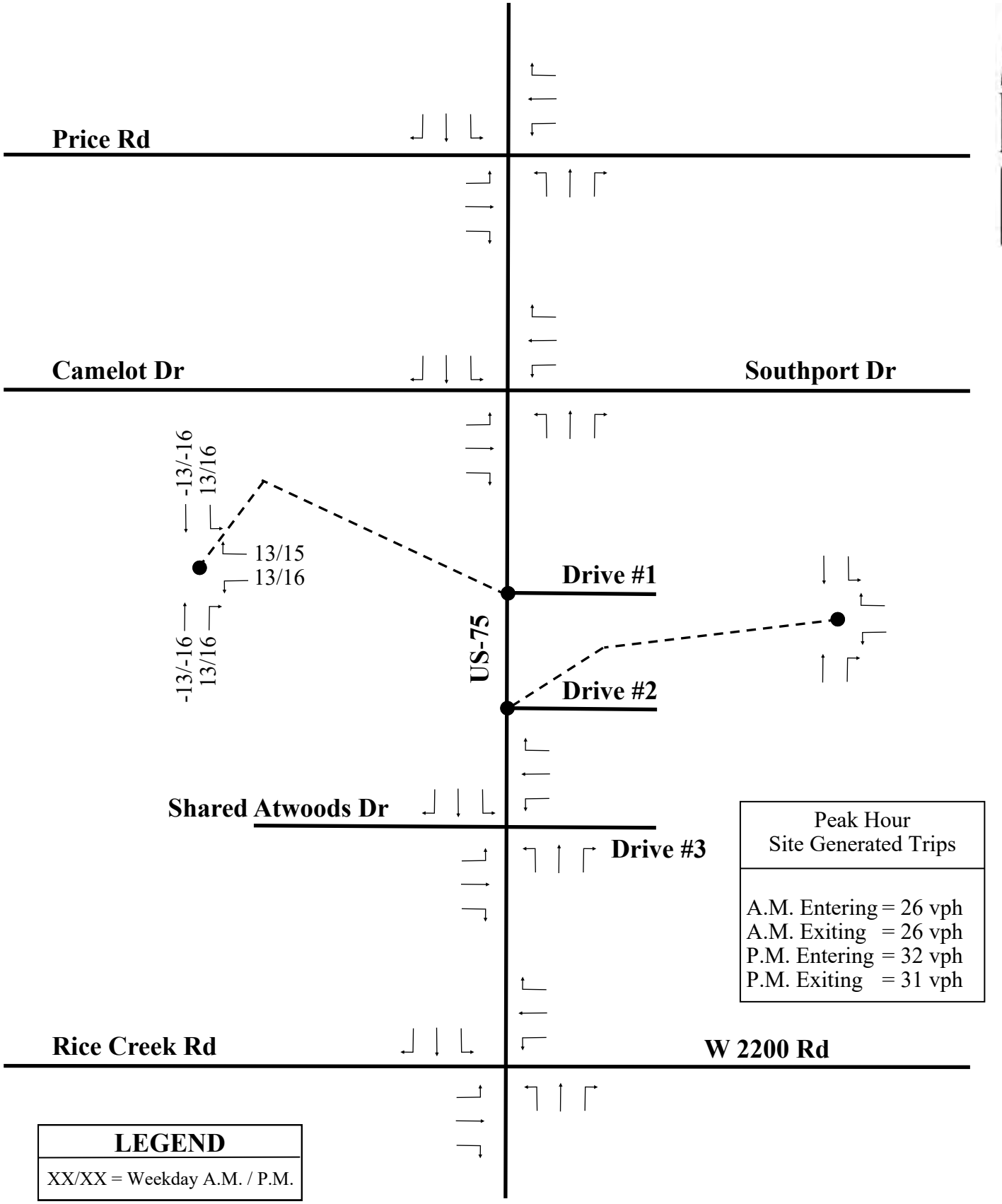



FIGURE 8A. Proposed Site Trips—Gas Station/ Convenience Store (Pass-By)
US-75/Washington Boulevard
Bartlesville, OK

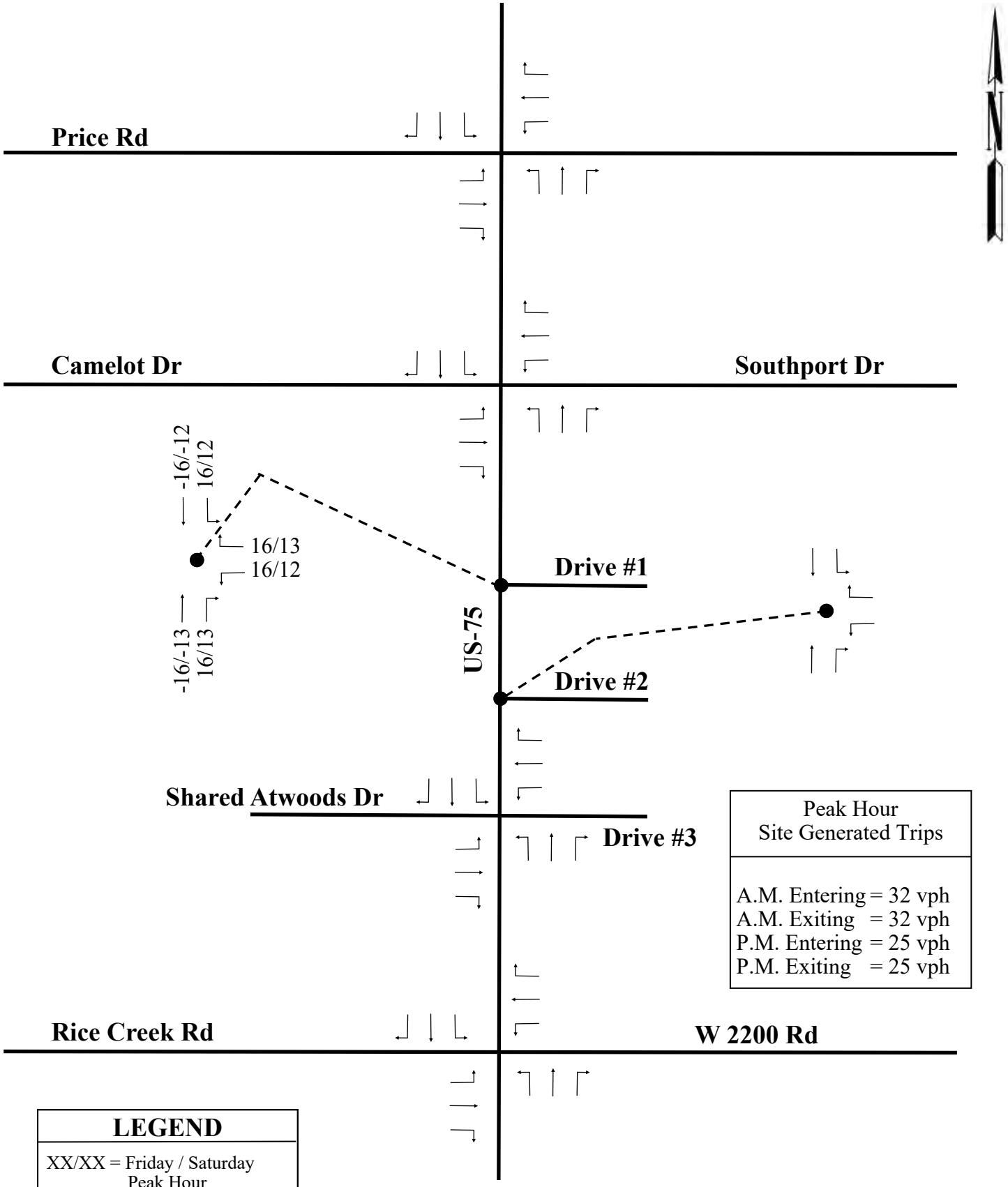



FIGURE 8B. Proposed Site Trips—Gas Station/ Convenience Store (Pass-By)
US-75/Washington Boulevard
Bartlesville, OK

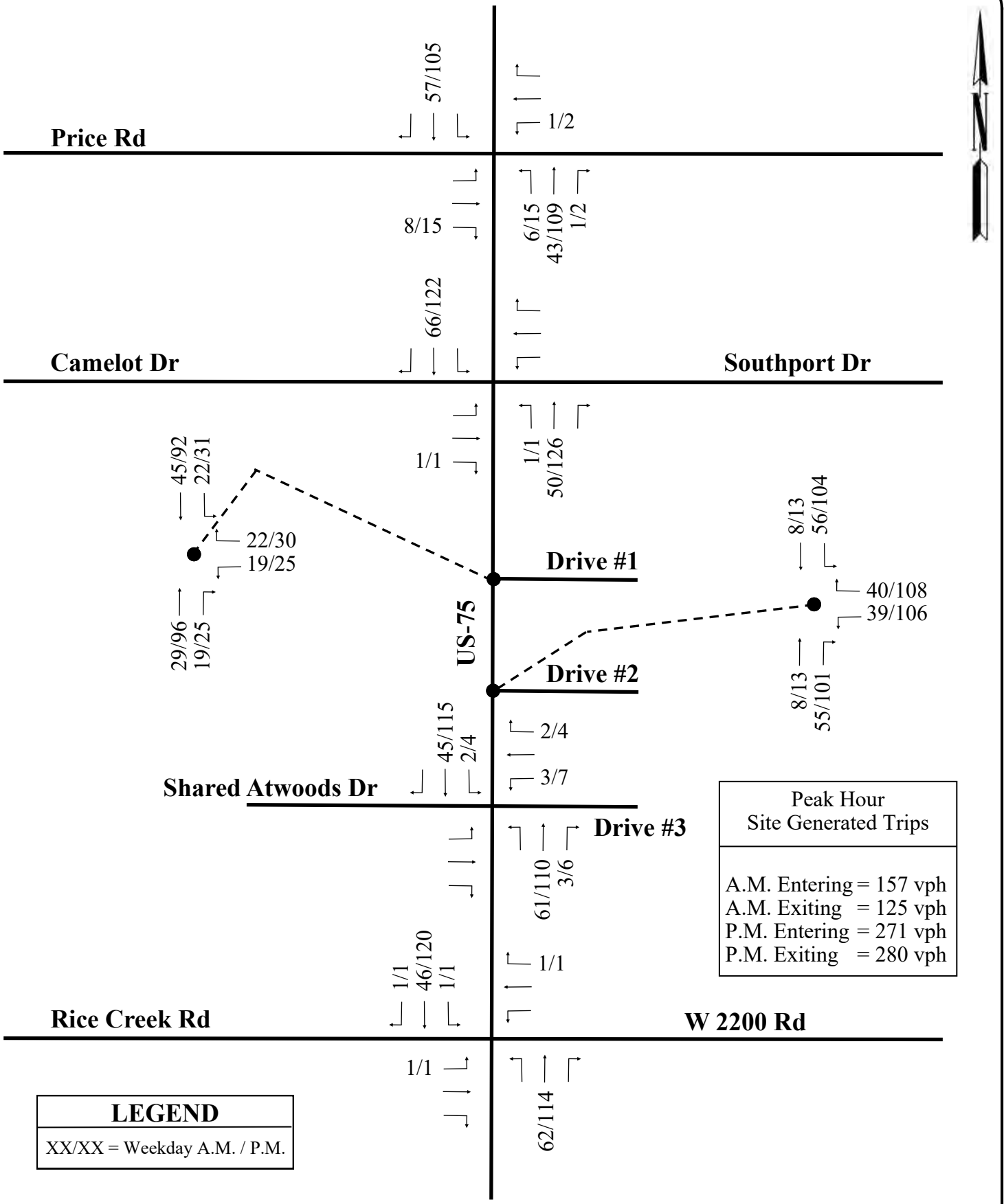



FIGURE 9A. Proposed Site Trips—Total
US-75/Washington Boulevard
Bartlesville, OK

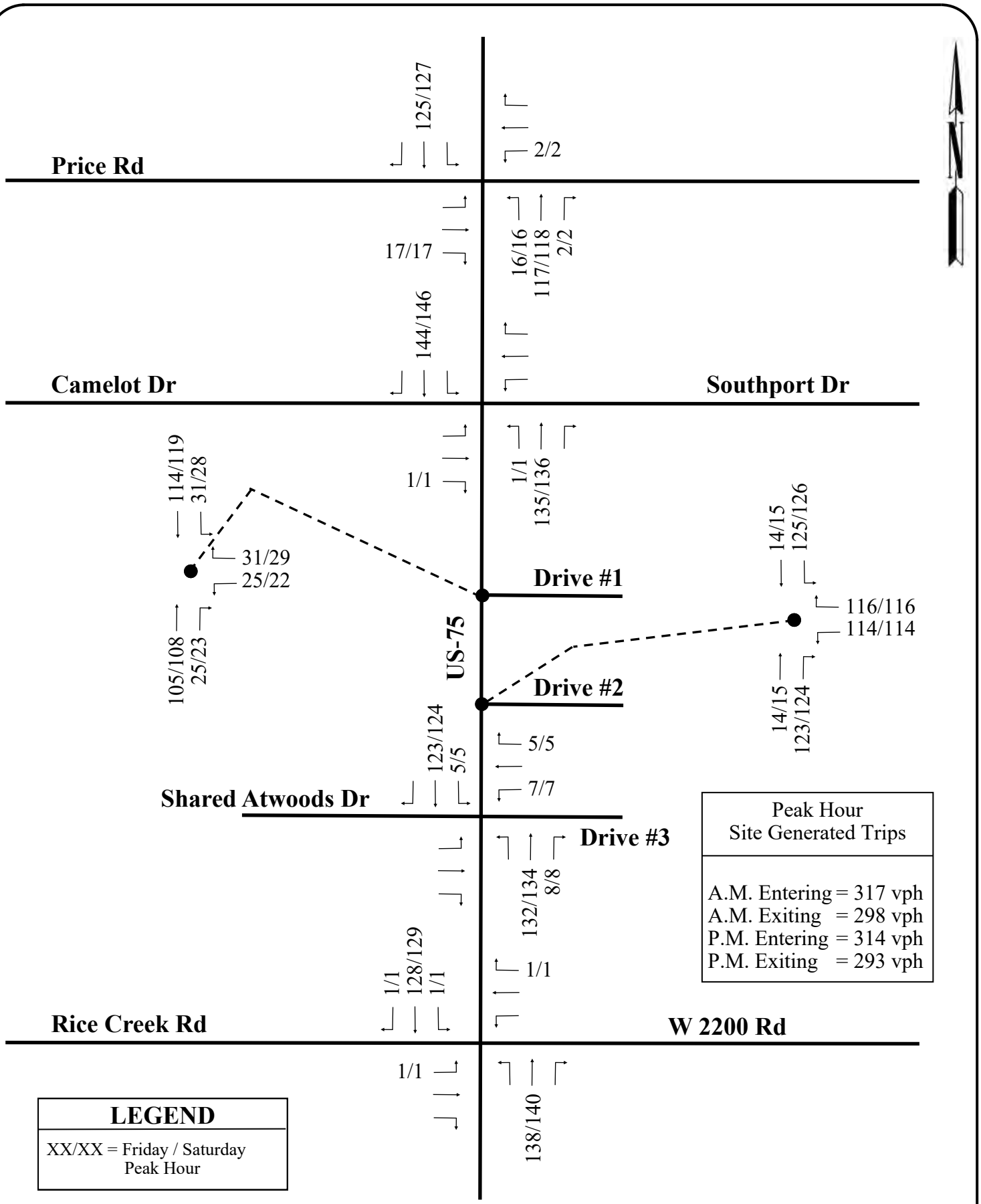



FIGURE 9B. Proposed Site Trips—Total
US-75/Washington Boulevard
Bartlesville, OK

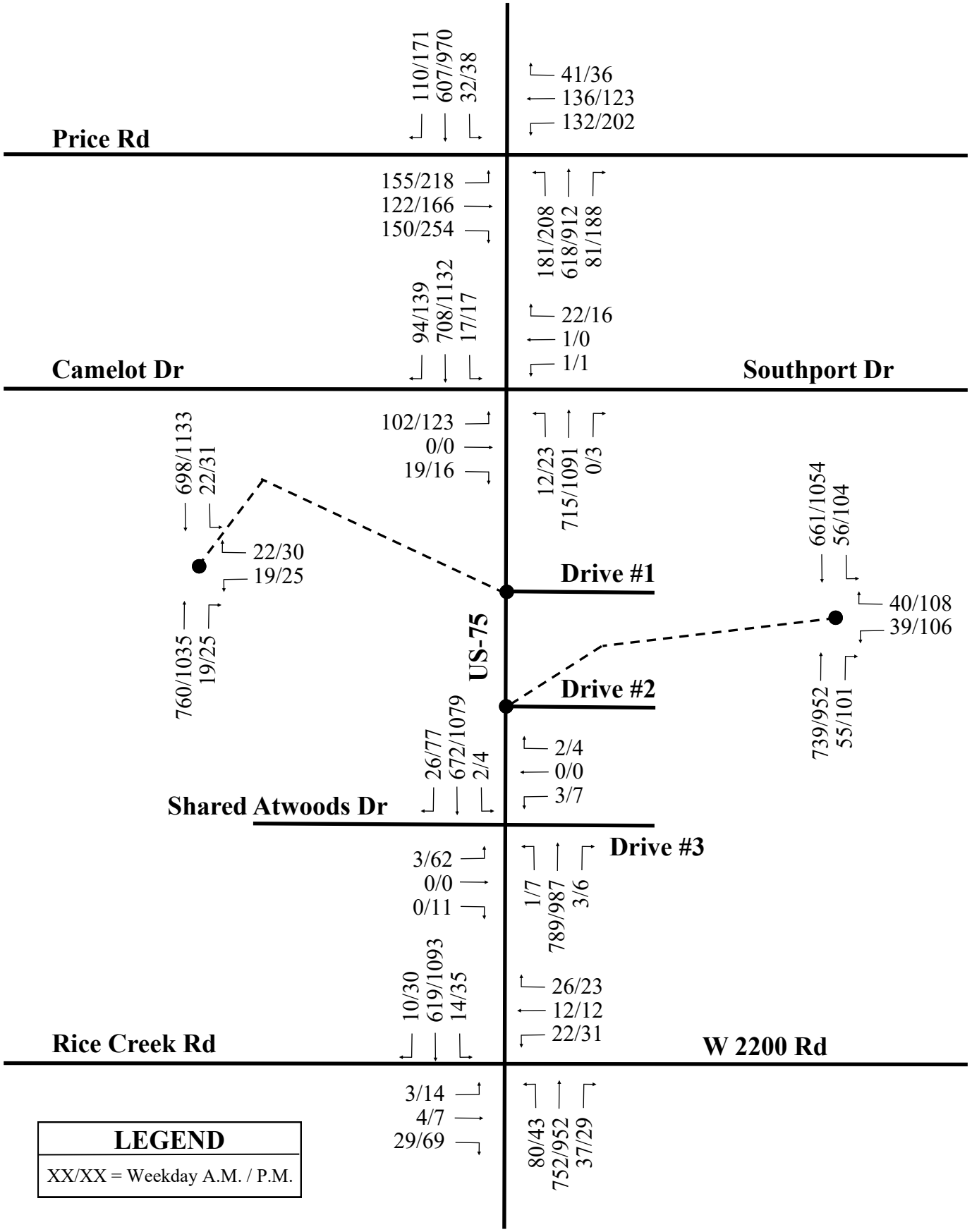



FIGURE 10A. 2026 Total Traffic
US-75/Washington Boulevard
Bartlesville, OK

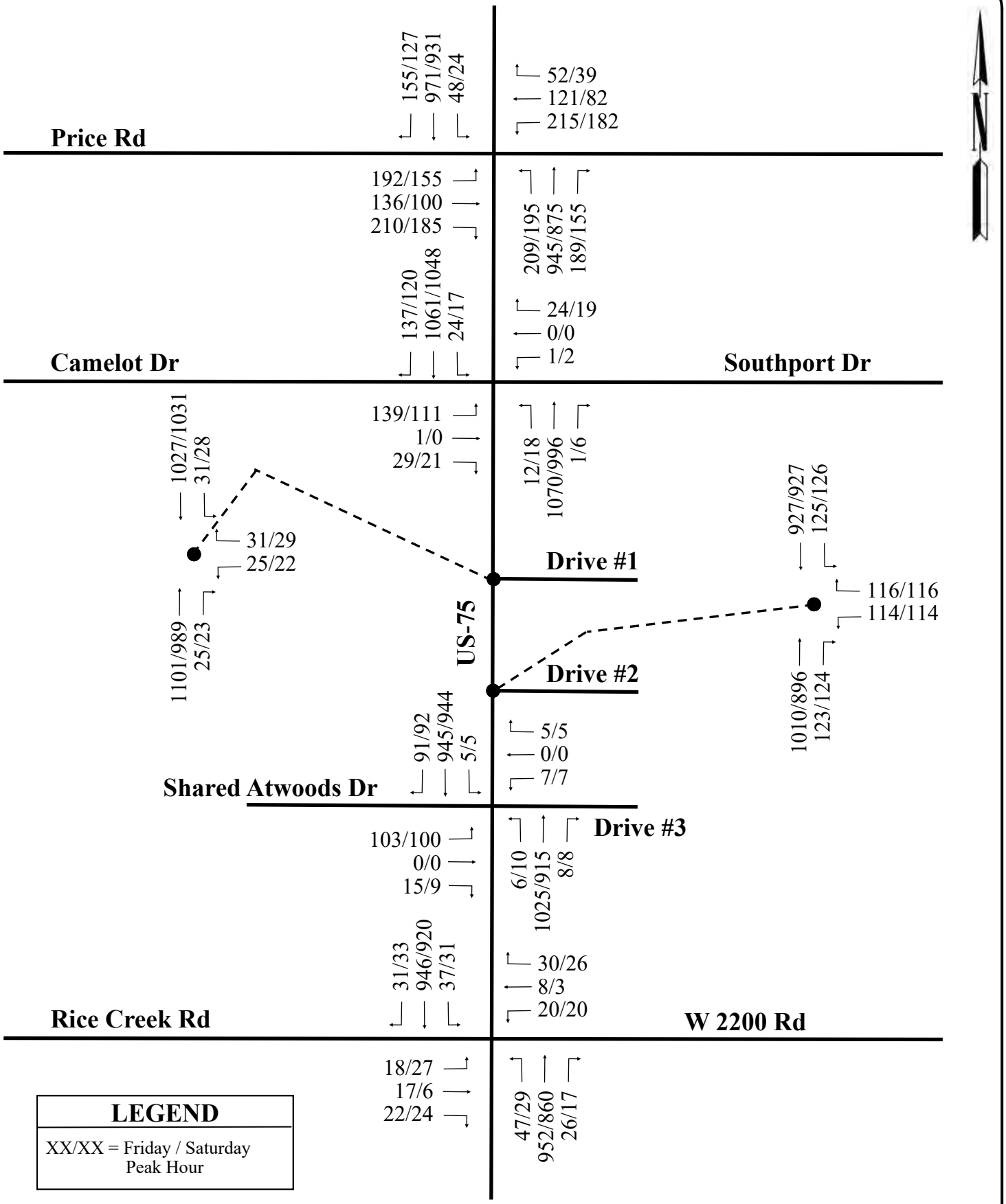



FIGURE 10B. 2026 Total Traffic
US-75/Washington Boulevard
Bartlesville, OK

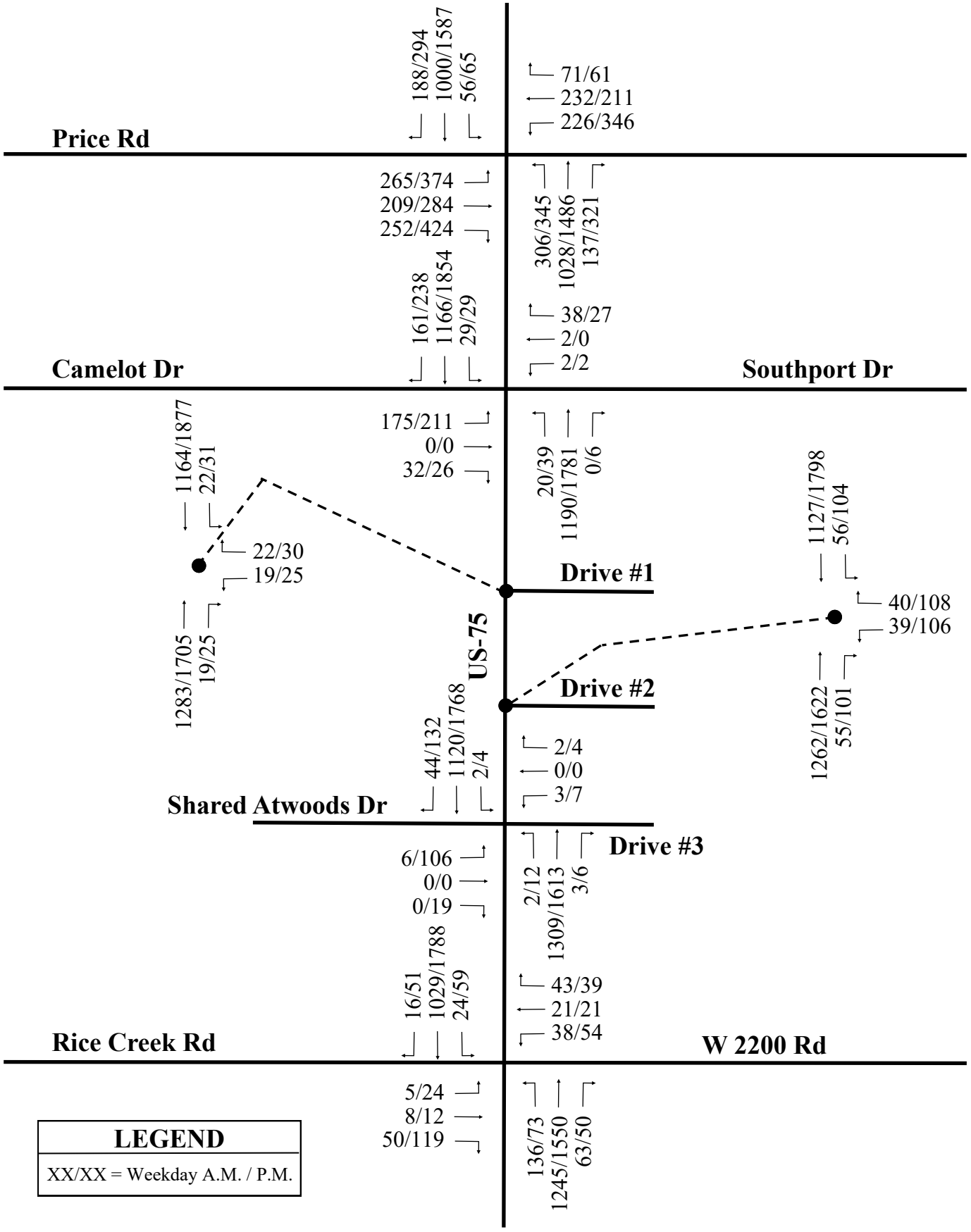



FIGURE 11A. 2046 Total Traffic
US-75/Washington Boulevard
Bartlesville, OK

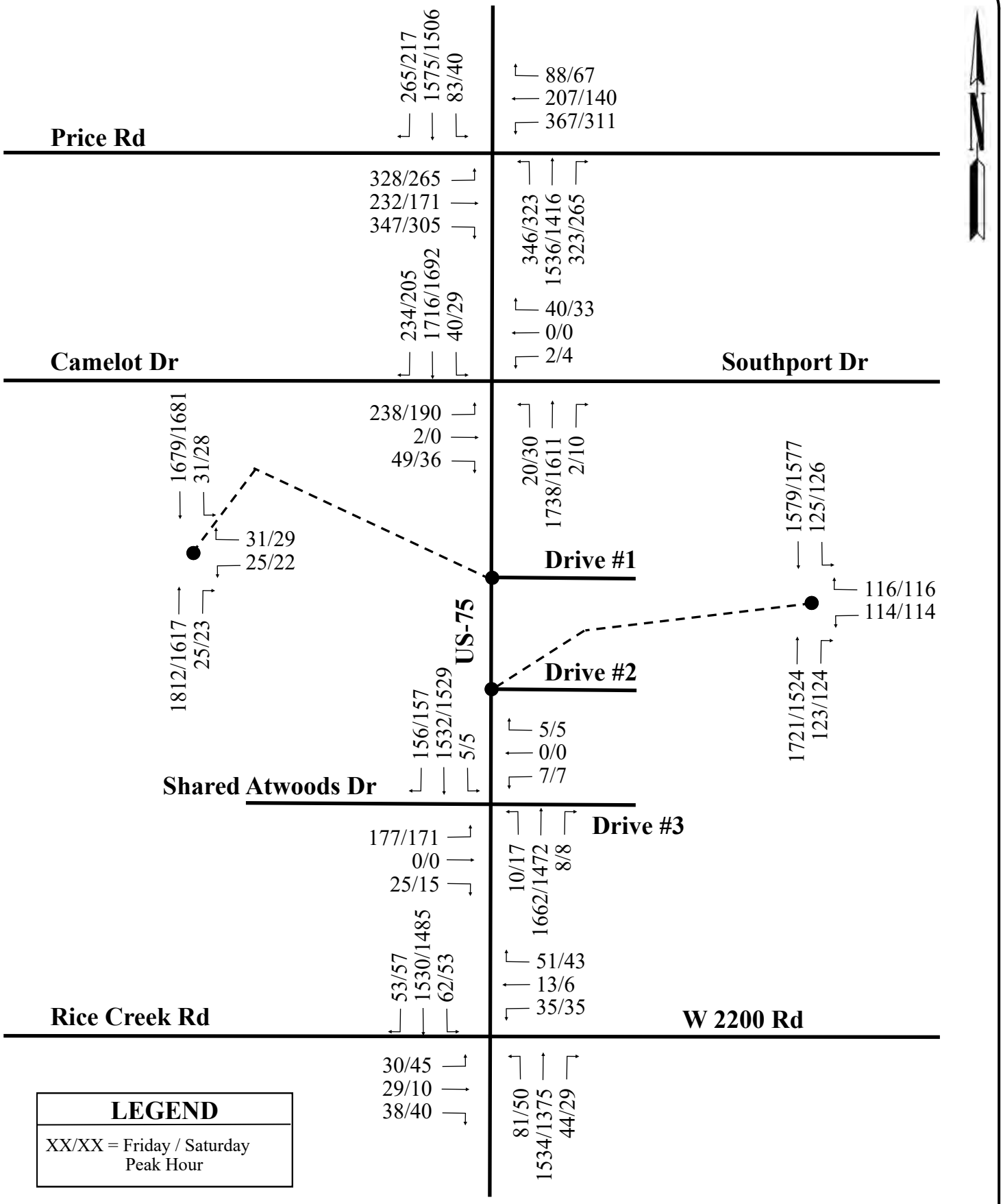



FIGURE 11B. 2046 Total Traffic
US-75/Washington Boulevard
Bartlesville, OK

## 5.0 CAPACITY ANALYSIS

### 5.1 METHODOLOGY

The capacity analyses were conducted using *Synchro 11,* which is a software package for modeling and optimizing traffic signal timings at signalized intersections and analyzing unsignalized intersections in accordance with the methodology of the latest edition of the *Highway Capacity Manual.* The *Highway Capacity Manual* is published by the Transportation Research Board of the National Research Council, Washington, D.C. The information has been widely accepted throughout the U.S. as a guide for defining and solving transportation challenges. The information is approved and distributed by the U.S. Department of Transportation, Federal Highway Administration.

The capacity analysis provides a measure of the amount of traffic that a given facility can accommodate. Traffic facilities generally operate poorly at or near capacity. The analysis is intended to estimate the maximum amount of traffic that can be accommodated by a facility while maintaining prescribed operational qualities. The definition of operational criteria is accomplished using levels-of-service. The concept of levels-of-service is defined as a qualitative measure and describes operational conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Six levels-of-service are defined for each type of facility for which analysis procedures are available. They are given letter designations, from “A” to “F”, with level-of-service “A” representing the best operating conditions and level-of-service “F” the worst.

The average control delay for signalized intersections is estimated for each lane group and aggregated for each approach and for the intersection as a whole. The level-of-service for this type of traffic control is directly related to the control delay value. The criteria for stop-controlled or unsignalized intersections have different threshold values than those for signalized intersections. A higher level of control delay has been determined to be acceptable at a signalized intersection for the same level-of-service. Longer delays for side streets are generally acceptable if gaps in traffic are prevalent. Generally, a gap acceptance threshold for longer delay values (LOS “E” or “F”) is defined when volume to capacity (v/c) ratios are less than 0.80. The level-of-service criteria are summarized in **Table 3**. The Highway Capacity Manual considers an overall intersection level-of-service “D” or better and a critical approach (approach with the lowest level-of-service) level-of-service “E” or better to be acceptable levels-of-service.

# TABLE 3

Level-of-Service Criteria

| Level-of-Service | Average Delay (seconds/vehicle) | | Traffic Condition |
|---|---|---|---|
| | Unsignalized | Signalized | |
| A | ≤10 | ≤10 | Free Flow |
| B | > 10 - 15 | > 10 - 20 | Stable Flow (slight delays) |
| C | > 15 - 25 | > 20 - 35 | Stable Flow (acceptable delays) |
| D | > 25 - 35 | > 35 - 55 | Approaching Unstable Flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding) |
| E | > 35 - 50 | > 55 - 80 | Unstable Flow (intolerable delay) |
| F | > 50 | > 80 | Forced Flow (congested and queues fail to clear) |

## 5.2 SCENARIOS

Capacity analyses were conducted for the weekday a.m. and p.m. peak hours, Friday p.m. peak hour, and Saturday peak hour period at each access point as well as the study intersections of US-75 at Price Road, Camelot Drive/Southport Drive, shared Atwoods Drive, and Rice Creek Road/W 2200 Road. The intersections were analyzed and reviewed under the 2023 existing traffic, 2026 projected background traffic, 2026 total traffic, 2046 projected background traffic, and 2046 total traffic. For purposes of this report, an overall intersection level-of-service “D” or better and a critical approach (approach with the lowest or least acceptable level-of-service) level-of-service “E” or better was considered an acceptable level-of-service. The results of the capacity analyses conducted are summarized in **Tables 4 and 5** for weekday and weekend conditions, respectively, and the worksheets have been included in the appendix.

# TABLE 4

Intersection Capacity Analysis Results - Weekday

| Intersection | Type of Traffic Control | AM Peak Hour | | | | | | PM Peak Hour | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Critical Approach | | | | Intersection | | Critical Approach | | | | Intersection | |
| | | Approach | Delay (sec/veh) | LOS | v/c Ratio* | Delay (sec/veh) | LOS | Approach | Delay (sec/veh) | LOS | v/c Ratio* | Delay (sec/veh) | LOS |
| **2023 Existing Traffic** | | | | | | | | | | | | | |
| Price Road and US-75 | Signalized | WB | 19.8 | B | | 16.4 | B | WB | 24.5 | C | | 18.8 | B |
| Camelot Drive/Southport Drive and US-75 | Signalized | WB | 19.8 | B | | 11.2 | B | WB | 24.6 | C | | 11.1 | B |
| Shared Atwoods Drive and US-75 | Unsig. / E Stop | EB | 21.6 | C | | 0.1 | A | EB | 66.3 | F | 0.56 | 2.5 | A |
| Rice Creek Road/W 2200 Road and US-75 | Unsig. / E/W Stop | WB | 29.7 | D | | 2.1 | A | WB | 79.2 | F | 0.59 | 4.2 | A |
| **2026 Future Background Traffic** | | | | | | | | | | | | | |
| Price Road and US-75 | Signalized | WB | 21.7 | C | | 17.7 | B | WB | 27.7 | C | | 20.9 | C |
| Camelot Drive/Southport Drive and US-75 | Signalized | WB | 20.9 | C | | 11.4 | B | WB | 26.9 | C | | 11.6 | B |
| Shared Atwoods Drive and US-75 | Unsig. / E Stop | EB | 25.1 | D | | 0.1 | A | EB | 128.9 | F | 0.82 | 4.8 | A |
| Rice Creek Road/W 2200 Road and US-75 | Unsig. / E/W Stop | WB | 41.0 | E | 0.39 | 2.6 | A | WB | 187.7 | F | 0.94 | 8.6 | A |
| **2026 Total Traffic** | | | | | | | | | | | | | |
| Price Road and US-75 | Signalized | WB | 22.8 | C | | 18.1 | B | WB | 30.4 | C | | 22.0 | C |
| Camelot Drive/Southport Drive and US-75 | Signalized | WB | 21.4 | C | | 11.5 | B | WB | 29.3 | C | | 11.8 | B |
| Drive #3/Shared Atwoods Drive and US-75 | Unsig. / E/W Stop | EB | 28.4 | D | | 0.1 | A | EB | 249.9 | F | 1.12 | 8.4 | A |
| Rice Creek Road/W 2200 Road and US-75 | Unsig. / E/W Stop | WB | 51.2 | F | 0.46 | 2.9 | A | WB | ** | F | 1.35 | 16.2 | C |
| Drive #1 and US-75 | Unsig. / W Stop | WB | 15.4 | C | | 0.6 | A | WB | 22.2 | C | | 0.7 | A |
| Drive #2 and US-75 | Unsig. / W Stop | WB | 17.8 | C | | 1.2 | A | WB | 93.0 | F | 0.97 | 8.7 | A |
| **2046 Future Background Traffic** | | | | | | | | | | | | | |
| Price Road and US-75 | Signalized | WB | 51.9 | D | | 39.8 | D | WB | 133.3 | F | | 98.1 | F |
| Camelot Drive/Southport Drive and US-75 | Signalized | WB | 31.8 | C | | 14.1 | B | WB | 48.1 | D | | 24.0 | C |
| Shared Atwoods Drive and US-75 | Unsig. / E Stop | EB | 100.6 | F | 0.15 | 0.3 | A | EB | ** | F | 11.32 | 192.0 | F |
| Rice Creek Road/W 2200 Road and US-75 | Unsig. / E/W Stop | WB | ** | F | 6.10 | 107.7 | F | WB | ** | F | N/A | ** | F |
| **2046 Total Traffic** | | | | | | | | | | | | | |
| Price Road and US-75 | Signalized | WB | 57.4 | E | | 44.7 | D | WB | 134.9 | F | | 113.2 | F |
| Camelot Drive/Southport Drive and US-75 | Signalized | WB | 32.8 | C | | 14.3 | B | WB | 48.8 | D | | 30.9 | C |
| Drive #3/Shared Atwoods Drive and US-75 | Unsig. / E/W Stop | EB | 118.4 | F | 0.17 | 0.5 | A | EB | ** | F | 16.98 | 277.8 | F |
| Rice Creek Road/W 2200 Road and US-75 | Unsig. / E/W Stop | WB | ** | F | 10.08 | 181.8 | F | WB | ** | F | N/A | ** | F |
| Drive #1 and US-75 | Unsig. / W Stop | WB | 26.8 | D | | 0.5 | A | WB | 60.8 | F | 0.49 | 1.1 | A |
| Drive #2 and US-75 | Unsig. / W Stop | WB | 37.2 | E | 0.44 | 1.5 | A | WB | ** | F | 2.24 | 37.0 | E |

**v/c ratio only reported for unsignalized approach level-of-service "E" or "F".*

***Delay exceeds 300 seconds per vehicle.*

# TABLE 5

Intersection Capacity Analysis Results - Weekend

| Intersection | Type of Traffic Control | Friday Peak Hour | | | | | | Saturday Peak Hour | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Critical Approach | | | | Intersection | | Critical Approach | | | | Intersection | |
| | | Approach | Delay (sec/veh) | LOS | v/c Ratio* | Delay (sec/veh) | LOS | Approach | Delay (sec/veh) | LOS | v/c Ratio* | Delay (sec/veh) | LOS |
| **2023 Existing Traffic** | | | | | | | | | | | | | |
| Price Road and US-75 | Signalized | WB | 23.5 | C | | 18.3 | B | EB | 21.4 | C | | 15.8 | B |
| Camelot Drive/Southport Drive and US-75 | Signalized | WB | 22.2 | C | | 12.0 | B | WB | 21.8 | C | | 11.3 | B |
| Shared Atwoods Drive and US-75 | Unsig. / E Stop | EB | 90.0 | F | 0.79 | 5.5 | A | EB | 70.0 | F | 0.69 | 4.2 | A |
| Rice Creek Road/W 2200 Road and US-75 | Unsig. / E/W Stop | EB | 64.4 | F | 0.49 | 4.0 | A | EB | 32.0 | D | | 2.1 | A |
| **2026 Future Background Traffic** | | | | | | | | | | | | | |
| Price Road and US-75 | Signalized | WB | 26.5 | C | | 20.3 | C | EB | 23.7 | C | | 17.0 | B |
| Camelot Drive/Southport Drive and US-75 | Signalized | WB | 24.3 | C | | 12.5 | B | WB | 23.4 | C | | 11.5 | B |
| Shared Atwoods Drive and US-75 | Unsig. / E Stop | EB | 211.9 | F | 1.16 | 13.0 | B | EB | 148.0 | F | 0.98 | 8.9 | A |
| Rice Creek Road/W 2200 Road and US-75 | Unsig. / E/W Stop | EB | 135.1 | F | 0.78 | 8.0 | A | EB | 47.3 | E | 0.42 | 2.8 | A |
| **2026 Total Traffic** | | | | | | | | | | | | | |
| Price Road and US-75 | Signalized | WB | 29.6 | C | | 21.5 | C | EB | 26.5 | C | | 17.8 | B |
| Camelot Drive/Southport Drive and US-75 | Signalized | WB | 27.0 | C | | 12.8 | B | WB | 25.7 | C | | 11.6 | B |
| Drive #3/Shared Atwoods Drive and US-75 | Unsig. / E/W Stop | EB | ** | F | 1.70 | 24.8 | C | EB | ** | F | 1.43 | 18.2 | C |
| Rice Creek Road/W 2200 Road and US-75 | Unsig. / E/W Stop | WB | ** | F | 1.32 | 19.6 | C | EB | 91.0 | F | 0.63 | 4.3 | A |
| Drive #1 and US-75 | Unsig. / W Stop | WB | 23.1 | C | | 0.7 | A | WB | 20.1 | C | | 0.6 | A |
| Drive #2 and US-75 | Unsig. / W Stop | WB | 142.7 | F | 1.12 | 14.3 | B | WB | 102.5 | F | 1.01 | 10.9 | B |
| **2046 Future Background Traffic** | | | | | | | | | | | | | |
| Price Road and US-75 | Signalized | WB | 127.8 | F | | 93.2 | F | WB | 110.1 | F | | 57.2 | E |
| Camelot Drive/Southport Drive and US-75 | Signalized | EB | 49.0 | D | | 21.3 | C | EB | 48.5 | D | | 16.2 | B |
| Shared Atwoods Drive and US-75 | Unsig. / E Stop | EB | ** | F | 12.92 | ** | F | EB | ** | F | 11.23 | ** | F |
| Rice Creek Road/W 2200 Road and US-75 | Unsig. / E/W Stop | EB | ** | F | N/A | ** | F | EB | ** | F | 11.35 | 174.4 | F |
| **2046 Total Traffic** | | | | | | | | | | | | | |
| Price Road and US-75 | Signalized | SB | 138.8 | F | | 111.7 | F | WB | 111.7 | F | | 68.9 | E |
| Camelot Drive/Southport Drive and US-75 | Signalized | EB | 55.8 | E | | 25.8 | C | EB | 57.3 | E | | 18.5 | B |
| Drive #3/Shared Atwoods Drive and US-75 | Unsig. / E/W Stop | EB | ** | F | 21.96 | ** | F | EB | ** | F | 16.85 | ** | F |
| Rice Creek Road/W 2200 Road and US-75 | Unsig. / E/W Stop | EB | ** | F | N/A | ** | F | EB | ** | F | N/A | ** | F |
| Drive #1 and US-75 | Unsig. / W Stop | WB | 70.1 | F | 0.54 | 1.3 | A | WB | 46.2 | E | 0.39 | 0.8 | A |
| Drive #2 and US-75 | Unsig. / W Stop | WB | ** | F | 2.78 | 55.9 | F | WB | ** | F | 2.23 | 42.2 | E |

**v/c ratio only reported for unsignalized approach level-of-service "E" or "F".*

***Delay exceeds 300 seconds per vehicle.*

### 5.2.1 2023 EXISTING TRAFFIC

The analyses conducted under the 2023 existing traffic indicate that the study intersections currently operate at overall acceptable levels-of-service “B” or better during all peak hours. The critical approaches at the signalized intersections currently operate at acceptable levels-of-service “C” or better during all peak hours. The critical approaches at the unsignalized intersections currently operate at unacceptable levels-of-service “F” during the typical weekday and Friday p.m. peak hour at the shared Atwoods Drive and Rice Creek Road/W 2200 Road and during the Saturday p.m. peak hour at the shared Atwoods Drive. However, the v/c ratios at each unsignalized intersection is less than 0.80.

### 5.2.2 2026 FUTURE BACKGROUND TRAFFIC

Under the 2026 future background traffic, the study intersections would be expected to operate at acceptable levels-of-service "C" or better during all peak hours. The critical approaches at the signalized intersections are projected to continue operating at acceptable levels-of-service "C" or better during all peak hours. The critical approaches at the unsignalized intersections would be expected to continue to operate at unacceptable levels-of-service "F" during the typical weekday and Friday p.m. peak hour at the shared Atwoods Drive and Rice Creek Road/W 2200 Road and during the Saturday p.m. peak hour at the shared Atwoods Drive. The v/c ratios at the shared Atwoods Drive and Rice Creek Road/W2200 Road unsignalized intersections would be expected to exceed 0.80.

### 5.2.3 2026 TOTAL TRAFFIC

Once the proposed site trips were added to the 2026 future background traffic, the signalized and unsignalized study intersections and critical approaches are projected to continue operating at similar levels-of-service compared to 2026 future background traffic during all peak hours. However, the intersection of Rice Creek Road/W 2200 Road would be expected to operate at unacceptable level-of-service "F" during all analyzed peak hour periods. The proposed site driveways are projected to operate at overall acceptable levels-of-service "B" or better during all peak hours. The critical approach at Drive #1 is projected to operate at acceptable levels-of-service "C" during all peak hours. The critical approaches at Drives #2 and #3 are projected to operate at unacceptable levels-of-service "F" during the typical weekday, Friday, and Saturday p.m. peak hour periods with v/c ratios greater than 0.80.

### 5.2.4 2046 FUTURE BACKGROUND TRAFFIC

Under the 2046 future background traffic, the signalized study intersection of Camelot Drive/Southport Drive and US-75 is projected to continue operating at acceptable levels of service "C" or better with a critical approach of "D" or better during all peak hours. The signalized study intersection of Price Road and US-75 is projected to worsen to unacceptable overall and critical approach levels-of-service "F" during the typical weekday, Friday, and Saturday p.m. peak hour periods. The unsignalized study intersections are projected to operate at unacceptable overall and critical approach levels-of-service "F" during each analyzed a.m. and p.m. peak hour period, except for the overall intersection at shared Atwoods Drive which would operate at level-of-service "A" during the typical weekday a.m. peak hour. The v/c ratios at the unsignalized intersection would be expected to greatly exceed 0.80 during each analyzed a.m. and p.m. peak hour period, except for the typical weekday a.m. peak hour at shared Atwoods Drive.

### 5.2.5 2046 TOTAL TRAFFIC

Once the proposed site trips were added to the 2046 future background traffic, the signalized and unsignalized study intersections and critical approaches are projected to continue operating at similar levels-of-service compared to 2046 future background traffic during all peak hours with additional vehicular delay. Proposed site Drive #1 is projected to operate at overall levels-of-service "A" during all peak hours, though the critical approach is projected to operate at unacceptable levels-of-service "F" during the typical weekday and Friday p.m. peak hour periods with v/c ratios less than 0.80. Proposed site Drives #2 and #3 are projected to operate at overall unacceptable levels-of-service "E" or "F" during the typical weekday, Friday, and Saturday p.m. peak hour periods with v/c ratios greater than 0.80.

### 5.2.6 POTENTIAL IMPROVEMENTS

In order to mitigate unacceptable levels-of-service at the study intersections and driveways, the following improvements are recommended:

*Price Road and US-75*

To achieve acceptable levels-of-service at this intersection under 2046 future background and 2046 total conditions, it is recommended that a second left-turn lane be installed on three approaches (eastbound, westbound, and northbound). Additionally, it is recommended the northbound and southbound approaches be widened to include a third through lane in each direction with a shared right-turn lane and removal of the dedicated right turn lanes.

*Camelot Drive/Southport Drive and US-75*

This intersection is predicted to operate at acceptable levels-of-service under all scenarios and no improvements are recommended.

*Drive #1 and US-75*

This intersection does not currently exist and is proposed as part of this development. Although the critical approach at this intersection is predicted to operate at unacceptable levels-of-service during the typical weekday and Friday p.m. peak hour periods under the 2046 total traffic scenario, the v/c ratio would be expected to much less than 0.80 indicating adequate gaps in traffic and capacity at the intersection. As a

result, the intersection was not evaluated for signal warrants. To improve the delay at this intersection under the 2026 and 2046 total traffic scenarios, it is recommended that separate left and right turn lanes be provided on the westbound approach.

*Drive #2 and US-75*

This intersection does not currently exist and is proposed as part of this development. To achieve acceptable levels-of-service at this intersection under the 2026 and 2046 total traffic scenarios, it is recommended that a traffic signal be installed. As discussed in the next section, this intersection is predicted to satisfy traffic signal warrants 1, 2, and 3 under both scenarios.

*Drive #3/Shared Atwoods Drive and US-75*

To achieve acceptable levels-of-service at this intersection under all scenarios, it is recommended that a traffic signal be installed. As discussed in the next section, this intersection currently satisfies the four-hour vehicular volume warrant and is predicted to satisfy the eight-hour, four-hour, and peak hour vehicular volume warrants under all future scenarios.

*Rice Creek Road/W 2200 Road and US-75*

To achieve acceptable levels-of-service at this intersection under all scenarios, it is recommended that a traffic signal be installed. As discussed in the next section, this intersection currently satisfies the peak hour vehicular volume warrant and is predicted to satisfy the four-hour and peak hour vehicular volume warrants under all 2046 future scenarios.

The results of the mitigated capacity analyses mentioned above are summarized in **Tables 7 and 8** for weekday and weekend conditions, respectively, and the worksheets have been included in the appendix.

# TABLE 7

Intersection Capacity Analysis Results - Weekday (Improved)

| Intersection | Type of Traffic Control | AM Peak Hour | | | | | | PM Peak Hour | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Critical Approach | | | | Intersection | | Critical Approach | | | | Intersection | |
| | | Approach | Delay (sec/veh) | LOS | v/c Ratio* | Delay (sec/veh) | LOS | Approach | Delay (sec/veh) | LOS | v/c Ratio* | Delay (sec/veh) | LOS |
| **2023 Existing Traffic** | | | | | | | | | | | | | |
| Shared Atwoods Drive and US-75 | Signalized | EB | 11.9 | B | | 4.4 | A | EB | 15.3 | B | | 5.6 | A |
| Rice Creek Road/W 2200 Road and US-75 | Signalized | WB | 12.5 | B | | 8.4 | A | EB | 15.6 | B | | 8.7 | A |
| **2026 Future Background Traffic** | | | | | | | | | | | | | |
| Shared Atwoods Drive and US-75 | Signalized | EB | 12.4 | B | | 4.4 | A | EB | 16.8 | B | | 5.7 | A |
| Rice Creek Road/W 2200 Road and US-75 | Signalized | WB | 13.2 | B | | 8.5 | A | EB | 17.2 | B | | 8.9 | A |
| **2026 Total Traffic** | | | | | | | | | | | | | |
| Drive #3/Shared Atwoods Drive and US-75 | Signalized | EB | 13.4 | B | | 6.0 | A | EB | 18.2 | B | | 7.3 | A |
| Rice Creek Road/W 2200 Road and US-75 | Signalized | WB | 13.8 | B | | 8.5 | A | EB | 19.0 | B | | 9.0 | A |
| Drive #1 and US-75 | Unsig. / W Stop | WB | 14.8 | B | | 0.5 | A | WB | 20.4 | C | | 0.6 | A |
| Drive #2 and US-75 | Signalized | WB | 19.8 | B | | 6.7 | A | WB | 25.2 | C | | 10.4 | B |
| **2046 Future Background Traffic** | | | | | | | | | | | | | |
| Price Road and US-75 | Signalized | WB | 36.1 | D | | 28.4 | C | WB | 64.4 | E | | 41.8 | D |
| Shared Atwoods Drive and US-75 | Signalized | EB | 17.4 | B | | 4.2 | A | EB | 38.2 | D | | 9.1 | A |
| Rice Creek Road/W 2200 Road and US-75 | Signalized | WB | 21.4 | C | | 9.6 | A | EB | 38.6 | D | | 13.8 | B |
| **2046 Total Traffic** | | | | | | | | | | | | | |
| Price Road and US-75 | Signalized | WB | 37.9 | D | | 29.2 | C | WB | 70.2 | E | | 45.3 | D |
| Drive #3/Shared Atwoods Drive and US-75 | Signalized | EB | 20.1 | C | | 5.5 | A | EB | 42.1 | D | | 11.7 | B |
| Rice Creek Road/W 2200 Road and US-75 | Signalized | WB | 22.8 | C | | 9.7 | A | EB | 43.0 | D | | 15.3 | B |
| Drive #1 and US-75 | Unsig. / W Stop | WB | 24.7 | C | | 0.5 | A | WB | 48.0 | E | 0.24 | 0.9 | A |
| Drive #2 and US-75 | Signalized | WB | 32.3 | C | | 6.7 | A | WB | 49.8 | D | | 14.9 | B |

**v/c ratio only reported for unsignalized approach level-of-service "E" or "F".*

# TABLE 8

Intersection Capacity Analysis Results - Weekend (Improved)

| Intersection | Type of Traffic Control | Friday Peak Hour | | | | | | Saturday Peak Hour | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Critical Approach | | | | Intersection | | Critical Approach | | | | Intersection | |
| | | Approach | Delay (sec/veh) | LOS | v/c Ratio* | Delay (sec/veh) | LOS | Approach | Delay (sec/veh) | LOS | v/c Ratio* | Delay (sec/veh) | LOS |
| **2023 Existing Traffic** | | | | | | | | | | | | | |
| Shared Atwoods Drive and US-75 | Signalized | EB | 14.7 | B | | 6.3 | A | EB | 14.6 | B | | 6.2 | A |
| Rice Creek Road/W 2200 Road and US-75 | Signalized | EB | 14.4 | B | | 8.7 | A | EB | 13.3 | B | | 8.2 | A |
| **2026 Future Background Traffic** | | | | | | | | | | | | | |
| Shared Atwoods Drive and US-75 | Signalized | EB | 15.9 | B | | 6.6 | A | EB | 15.9 | B | | 6.5 | A |
| Rice Creek Road/W 2200 Road and US-75 | Signalized | EB | 15.6 | B | | 8.9 | A | EB | 14.3 | B | | 8.3 | A |
| **2026 Total Traffic** | | | | | | | | | | | | | |
| Drive #3/Shared Atwoods Drive and US-75 | Signalized | EB | 17.4 | B | | 8.6 | A | EB | 17.3 | B | | 8.2 | A |
| Rice Creek Road/W 2200 Road and US-75 | Signalized | EB | 17.3 | B | | 9.0 | A | EB | 15.7 | B | | 8.4 | A |
| Drive #1 and US-75 | Unsig. / W Stop | WB | 21.0 | C | | 0.7 | A | WB | 18.6 | C | | 0.6 | A |
| Drive #2 and US-75 | Signalized | WB | 27.6 | C | | 11.5 | B | WB | 25.0 | C | | 11.0 | B |
| **2046 Future Background Traffic** | | | | | | | | | | | | | |
| Price Road and US-75 | Signalized | WB | 60.8 | E | | 41.7 | D | WB | 45.3 | D | | 29.0 | C |
| Shared Atwoods Drive and US-75 | Signalized | EB | 33.6 | C | | 11.6 | B | EB | 33.5 | C | | 11.0 | B |
| Rice Creek Road/W 2200 Road and US-75 | Signalized | EB | 28.1 | C | | 10.7 | B | EB | 26.0 | C | | 9.8 | A |
| **2046 Total Traffic** | | | | | | | | | | | | | |
| Price Road and US-75 | Signalized | WB | 74.4 | E | | 46.5 | D | WB | 51.0 | D | | 30.9 | C |
| Drive #3/Shared Atwoods Drive and US-75 | Signalized | EB | 38.4 | D | | 15.0 | B | EB | 38.2 | D | | 13.6 | B |
| Rice Creek Road/W 2200 Road and US-75 | Signalized | WB | 31.8 | C | | 11.1 | B | EB | 29.5 | C | | 10.1 | B |
| Drive #1 and US-75 | Unsig. / W Stop | WB | 53.1 | F | 0.26 | 1.0 | A | WB | 38.2 | E | 0.18 | 0.7 | A |
| Drive #2 and US-75 | Signalized | WB | 54.7 | D | | 18.6 | B | WB | 47.3 | D | | 15.0 | B |

**v/c ratio only reported for unsignalized approach level-of-service "E" or "F".*

## 6.0 TRAFFIC SIGNAL WARRANT ANALYSIS

To determine the need for traffic control modifications at the intersections along US-75 at Drive #2, shared Atwoods Drive/Drive #3, and Rice Creek Road/W 2200 Road, traffic signal warrant analyses were conducted. The analyses were conducted using *PC-Warrants 2*, which is a software package for evaluating intersections to support the installation of a multiway stop or traffic signal in accordance with the *Manual on Uniform Traffic Control Devices (MUTCD).* This publication is a federally approved publication which governs traffic engineering practices across the country. The MUTCD has nine sets of thresholds or "warrants" that may be evaluated at an intersection to determine whether a traffic signal should be considered to reduce accidents or vehicular delay. If one of the warrants is met the installation of a traffic signal should be considered.

Twenty-four hour traffic volumes are available for the intersections at Drives #2 and #3, but only peak hour traffic volumes were collected at Rice Creek Road/W 2200 Road; therefore, only the four hour and peak hour volume warrants were evaluated at that location to determine if the intersection would satisfy traffic signal warrants. The results are provided in **Table 9**.

**TABLE 9**

Signal Warrant Results

| Study Location | Warrant 1 (Eight Hour) | | | Warrant 2 (Four Hour) | Warrant 3 (Peak Hour) |
|---|---|---|---|---|---|
| | 1A | 1B | 1C | | |
| **Drive #2 and US-75** | | | | | |
| 2023 Existing Traffic | -- | -- | -- | -- | -- |
| 2026 Future Background Traffic | -- | -- | -- | -- | -- |
| 2026 Total Traffic | X | X | X | X | X |
| 2046 Future Background Traffic | -- | -- | -- | -- | -- |
| 2046 Total Traffic | X | X | X | X | X |
| **Drive #3/Shared Atwoods Drive and US-75** | | | | | |
| 2023 Existing Traffic | | | | X | |
| 2026 Future Background Traffic | | X | | X | X |
| 2026 Total Traffic | | X | | X | X |
| 2046 Future Background Traffic | | X | X | X | X |
| 2046 Total Traffic | | X | X | X | X |
| **Rice Creek Road/W 2200 Road and US-75** | | | | | |
| 2023 Existing Traffic | -- | -- | -- | | X |
| 2026 Future Background Traffic | -- | -- | -- | | X |
| 2026 Total Traffic | -- | -- | -- | | X |
| 2046 Future Background Traffic | -- | -- | -- | X | X |
| 2046 Total Traffic | -- | -- | -- | X | X |

--Intersection does not exist during this scenario and/or traffic data is not available to evaluate this warrant.

The results indicate that all of the evaluated unsignalized intersections currently satisfy or are predicted to satisfy at least one signal warrant. Drive #2 is predicted to satisfy warrants 1, 2, and 3 during 2026 and

2046 total conditions. Drive #3/shared Atwoods Drive currently satisfies warrant #2 and is predicted to satisfy warrants 1, 2, and 3, under all other scenarios. Rice Creek Road/W 2200 Road currently satisfies and is predicted to satisfy warrant #3 only under 2023 existing, 2026 future background, and 2026 total conditions. Under 2046 future background and 2046 total conditions, Rice Creek Road/W 2200 Road is predicted to satisfy warrants 2 and 3. The computer printouts of the warrant analyses have been included in the appendix.

## 7.0 CONCLUSIONS

### 7.1 SUMMARY

TEC was requested to conduct a traffic impact analysis on a proposed casino development in Bartlesville, Oklahoma. Existing traffic volume data was collected adjacent to the proposed development location. The 2023 existing traffic volumes were utilized to determine the background traffic for 2026 and 2046 by applying an average annual growth rate of 4% to the 2023 traffic volumes. The 2026 design period was selected as the estimated completion year of the development and the 2046 design period was selected as the horizon year, 20 years after build-out. The trips expected to be generated by the proposed development were determined and distributed among the points of access to the development, as well as the adjacent street intersections. The proposed development traffic was added to the 2026 and 2046 projected background traffic for conducting the reviews and analyses.

The analyses conducted under the 2023 existing traffic and 2026 future background traffic indicate that the study intersections currently operate and would be expected to continue operating at overall acceptable levels-of-service during all peak hours. The critical approaches at the unsignalized intersections currently operate and would be expected to continue operating at unacceptable levels-of-service during the typical weekday and Friday p.m. peak hour at the shared Atwoods Drive and Rice Creek Road/W 2200 Road and during the Saturday p.m. peak hour at the shared Atwoods Drive. Once the proposed site trips were added, the study intersections would be expected to operate at similar levels-of-service. The proposed site drives would be expected to operate at overall acceptable levels-of-service during all peak hours. The critical approaches at Drives #2 and #3 are projected to operate at unacceptable levels-of-service during the typical weekday, Friday, and Saturday p.m. peak hour periods.

Under the 2046 future background traffic, the signalized study intersection of Price Road and US-75 is projected to worsen to unacceptable overall and critical approach levels-of-service during at least one peak hour. The unsignalized study intersections are projected to operate at unacceptable overall and critical approach levels-of-service during at least one peak hour. Once the proposed site trips were added, the signalized and unsignalized study intersections and critical approaches are projected to continue operating at similar levels-of-service with additional vehicular delay. Critical approaches at proposed site Drives #1, #2, and #3 are projected to operate at unacceptable levels-of-service during at least one peak hour.

Traffic signal warrant analyses were conducted on the US-75 intersections at Drive #2, Drive #3/shared Atwoods Drive, and Rice Creek Road/W 2200 Road. The results indicate that the intersection of US-75 and Drive #2 would be expected to satisfy the eight-hour, four-hour, and peak hour traffic signal warrants under the 2026 and 2046 total traffic scenarios. The results indicate that the intersection of US-75 and shared Atwoods Drive/Drive #3 currently satisfies the four-hour vehicular volume warrant and would be expected to satisfy the eight-hour, four-hour, and peak hour vehicular volume traffic signal warrants under all 2026 and 2046 future traffic scenarios. The results indicate that the intersection of US-75 and Rice Creek Road/W 2200 Road currently satisfies the peak hour vehicular volume warrant, would be expected to satisfy the peak hour vehicular volume warrant under the 2026 future traffic scenarios, and would be expected to satisfy the four-hour and peak hour vehicular volume warrants under the 2046 future traffic scenarios.

## 7.2 RECOMMENDATIONS

Based on the results of the analyses conducted, the following traffic control or geometric roadway improvements are recommended to achieve acceptable levels-of-service:

- Install a traffic signal at US-75 and shared Atwoods Drive which currently experiences excess delay during the peak hours and is warranted under the existing traffic volumes and not as a result of the proposed development. The intersection is spaced approximately ¼ mile south of the signalized Camelot Drive/Southport Drive intersection which is recommended as the minimum spacing between signalized intersections. Ideally, the proposed casino site could be reconfigured to have the main access point to the site be located opposite the shared Atwoods Drive and utilize the recommended traffic signal for ingress and egress.

- Despite the intersection of US-75 and Rice Creek Road/ W 2200 Road currently operating at poor levels-of-service and being expected to continue to incur additional side street delay, the v/c ratio is well below 0.8 and the intersection only satisfies the peak hour traffic signal warrant. The intersection would only be expected to satisfy the four-hour and peak hour warrants under the 2046 total traffic scenario. It is recommended that a traffic signal not immediately be installed and the City of Bartlesville and ODOT monitor the intersection of US-75 and Rice Creek Road/W 2200 Road for future signalization.
- Construct the westbound approach of Drives #1, 2, and 3 with separate left and right turn lanes to reduce vehicular delay for right turning vehicles exiting the site.
- If the site cannot be reconfigured to align the main access drive with the shared Atwoods Drive, the intersection of US-75 and Drive #2 should be considered for signalization. Unfortunately, this signalized intersection would be slightly closer to the signalized intersection of US-75 and Camelot Drive/Southport Drive and would be a "T" intersection which would not serve any other businesses on the west side of US-75. If Drive #2 is signalized, the intersection of US-75 and the shared Atwoods Drive should not be signalized due to the close spacing to Drive #2 and would be expected to continue operating at poor levels-of-service. Site trips exiting Drive #3 would have access to the potential signal at Drive #2, thus reducing the delay for the westbound approach.
- Under the 2046 Total Traffic scenarios, the intersection of Price Road and US-75 intersection would be expected to operate at unacceptable levels-of-service prior to any potential improvements. The excessive delay would not be expected to occur for decades and would be as a result of background traffic growth and not as a result of the proposed development. The potential improvements at the intersection would require significant modifications to the existing geometry. It is recommended that the City of Bartlesville and ODOT monitor this intersection in the future as background traffic volumes increase due to continued growth in the vicinity.

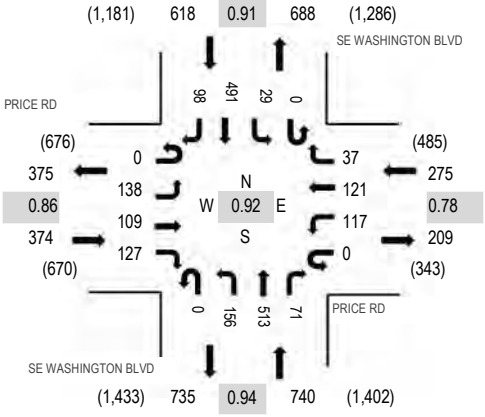
# APPENDIX

# TRAFFIC DATA

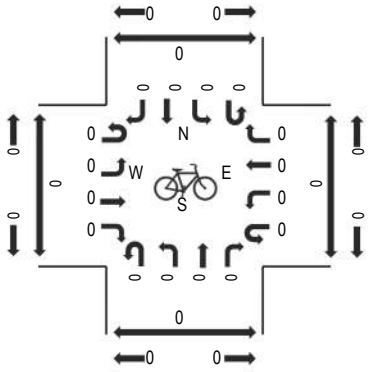
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 1 SE WASHINGTON BLVD & PRICE RD AM
**Date:** Thursday, December 14, 2023
**Peak Hour:** 07:45 AM - 08:45 AM
**Peak 15-Minutes:** 07:45 AM - 08:00 AM

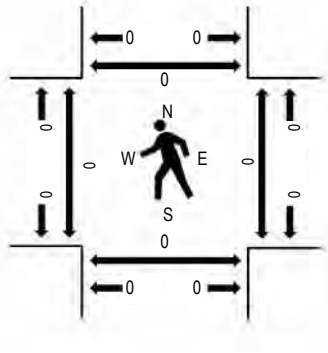
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

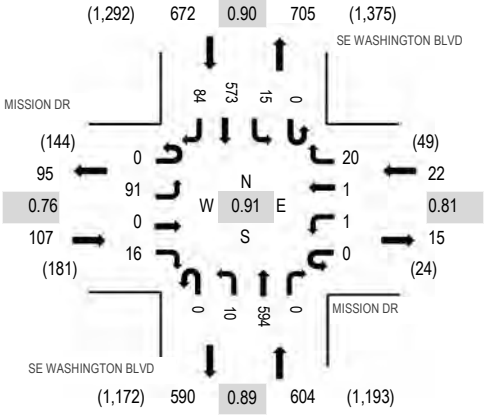
## Traffic Counts - Motorized Vehicles

| Interval Start Time | PRICE RD Eastbound | | | | PRICE RD Westbound | | | | SE WASHINGTON BLVD Northbound | | | | SE WASHINGTON BLVD Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 7:00 AM | 0 | 22 | 6 | 28 | 0 | 29 | 16 | 1 | 0 | 29 | 77 | 7 | 0 | 0 | 106 | 12 | 333 | 1,751 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 13 | 13 | 28 | 0 | 25 | 28 | 3 | 0 | 38 | 108 | 13 | 0 | 3 | 121 | 14 | 407 | 1,913 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 29 | 19 | 27 | 0 | 19 | 32 | 4 | 0 | 32 | 144 | 26 | 0 | 4 | 102 | 28 | 466 | 1,991 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 39 | 32 | 31 | 0 | 33 | 50 | 5 | 0 | 48 | 128 | 18 | 0 | 11 | 120 | 30 | 545 | 2,007 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 30 | 39 | 38 | 0 | 35 | 30 | 10 | 0 | 37 | 122 | 15 | 0 | 8 | 113 | 18 | 495 | 1,987 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 37 | 17 | 31 | 0 | 21 | 20 | 9 | 0 | 39 | 130 | 24 | 0 | 8 | 124 | 25 | 485 | | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 32 | 21 | 27 | 0 | 28 | 21 | 13 | 0 | 32 | 133 | 14 | 0 | 2 | 134 | 25 | 482 | | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 46 | 21 | 44 | 0 | 28 | 17 | 8 | 0 | 35 | 143 | 10 | 0 | 12 | 141 | 20 | 525 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 248 | 168 | 254 | 0 | 218 | 214 | 53 | 0 | 290 | 985 | 127 | 0 | 48 | 961 | 172 | 3,738 | | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 138 | 109 | 127 | 0 | 117 | 121 | 37 | 0 | 156 | 513 | 71 | 0 | 29 | 491 | 98 | 2,007 | | 0 | 0 | 0 | 0 |

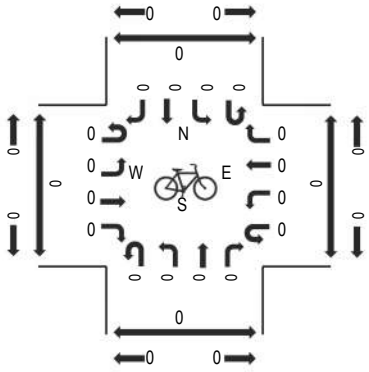
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 2 SE WASHINGTON BLVD & MISSION DR AM
**Date:** Thursday, December 14, 2023
**Peak Hour:** 08:00 AM - 09:00 AM
**Peak 15-Minutes:** 08:45 AM - 09:00 AM

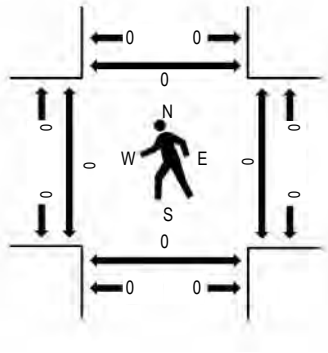
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

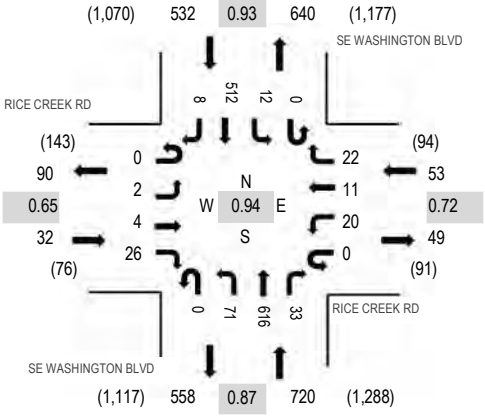
## Traffic Counts - Motorized Vehicles

| Interval Start Time | MISSION DR Eastbound | | | | MISSION DR Westbound | | | | SE WASHINGTON BLVD Northbound | | | | SE WASHINGTON BLVD Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 7:00 AM | 0 | 13 | 0 | 4 | 0 | 1 | 0 | 4 | 0 | 1 | 100 | 0 | 0 | 4 | 133 | 13 | 273 | 1,310 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 12 | 1 | 2 | 0 | 0 | 0 | 5 | 0 | 1 | 137 | 0 | 0 | 1 | 154 | 9 | 322 | 1,381 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 19 | 0 | 3 | 0 | 1 | 0 | 8 | 0 | 3 | 180 | 1 | 0 | 1 | 126 | 6 | 348 | 1,393 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 2 | 164 | 0 | 0 | 1 | 158 | 14 | 367 | 1,384 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 15 | 0 | 3 | 0 | 0 | 0 | 6 | 0 | 3 | 153 | 0 | 0 | 5 | 139 | 20 | 344 | 1,405 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 21 | 0 | 1 | 0 | 0 | 0 | 6 | 0 | 1 | 148 | 0 | 0 | 4 | 143 | 10 | 334 | | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 31 | 0 | 4 | 0 | 1 | 1 | 2 | 0 | 1 | 134 | 0 | 0 | 3 | 136 | 26 | 339 | | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 24 | 0 | 8 | 0 | 0 | 0 | 6 | 0 | 5 | 159 | 0 | 0 | 3 | 155 | 28 | 388 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 155 | 1 | 25 | 0 | 3 | 1 | 45 | 0 | 17 | 1,175 | 1 | 0 | 22 | 1,144 | 126 | 2,715 | | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 91 | 0 | 16 | 0 | 1 | 1 | 20 | 0 | 10 | 594 | 0 | 0 | 15 | 573 | 84 | 1,405 | | 0 | 0 | 0 | 0 |

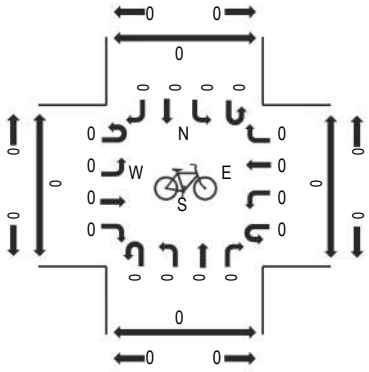
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 4 SE WASHINGTON BLVD & RICE CREEK RD AM
**Date:** Thursday, December 14, 2023
**Peak Hour:** 07:15 AM - 08:15 AM
**Peak 15-Minutes:** 07:45 AM - 08:00 AM

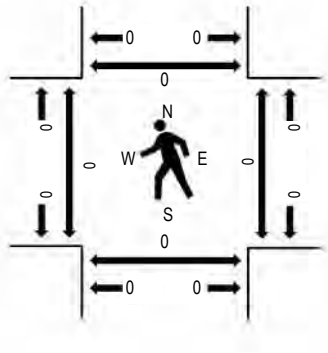
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

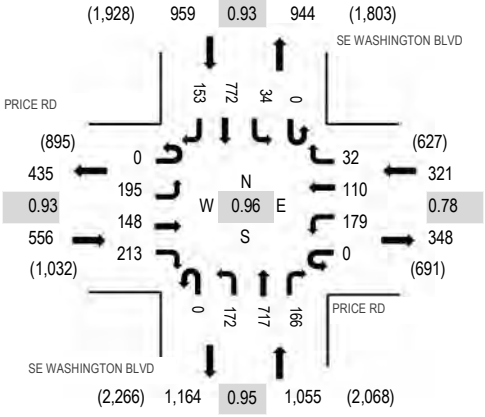
## Traffic Counts - Motorized Vehicles

| Interval Start Time | RICE CREEK RD Eastbound | | | | RICE CREEK RD Westbound | | | | SE WASHINGTON BLVD Northbound | | | | SE WASHINGTON BLVD Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 7:00 AM | 0 | 0 | 0 | 8 | 0 | 7 | 3 | 2 | 0 | 13 | 102 | 4 | 0 | 2 | 133 | 0 | 274 | 1,300 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 1 | 0 | 5 | 0 | 5 | 1 | 2 | 0 | 16 | 137 | 7 | 0 | 1 | 142 | 5 | 322 | 1,337 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 1 | 7 | 0 | 4 | 1 | 8 | 0 | 26 | 174 | 6 | 0 | 2 | 120 | 0 | 349 | 1,328 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 1 | 2 | 4 | 0 | 4 | 6 | 3 | 0 | 21 | 160 | 10 | 0 | 5 | 137 | 2 | 355 | 1,260 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 0 | 1 | 10 | 0 | 7 | 3 | 9 | 0 | 8 | 145 | 10 | 0 | 4 | 113 | 1 | 311 | 1,228 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 1 | 2 | 10 | 0 | 4 | 0 | 6 | 0 | 13 | 139 | 5 | 0 | 5 | 126 | 2 | 313 | | 0 | 0 | 0 | 0 |
| 8:30 AM | 0 | 0 | 2 | 3 | 0 | 3 | 4 | 4 | 0 | 4 | 128 | 4 | 0 | 6 | 122 | 1 | 281 | | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 5 | 2 | 11 | 0 | 1 | 2 | 5 | 0 | 9 | 145 | 2 | 0 | 8 | 131 | 2 | 323 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 8 | 10 | 58 | 0 | 35 | 20 | 39 | 0 | 110 | 1,130 | 48 | 0 | 33 | 1,024 | 13 | 2,528 | | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 2 | 4 | 26 | 0 | 20 | 11 | 22 | 0 | 71 | 616 | 33 | 0 | 12 | 512 | 8 | 1,337 | | 0 | 0 | 0 | 0 |

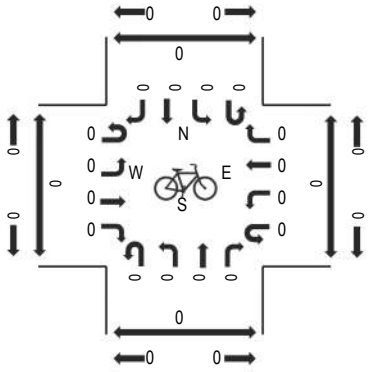
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 1 SE WASHINGTON BLVD & PRICE RD PM
**Date:** Thursday, December 14, 2023
**Peak Hour:** 04:15 PM - 05:15 PM
**Peak 15-Minutes:** 05:00 PM - 05:15 PM

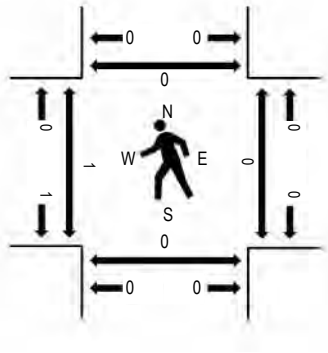
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

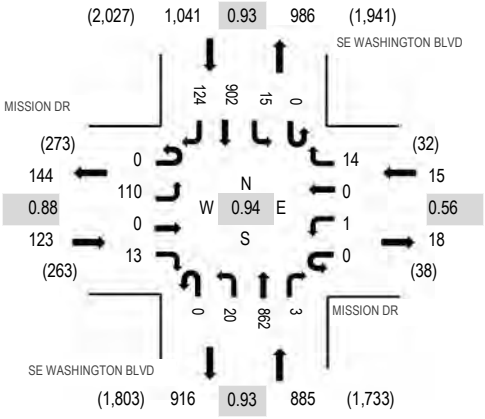
## Traffic Counts - Motorized Vehicles

| Interval Start Time | PRICE RD Eastbound | | | | PRICE RD Westbound | | | | SE WASHINGTON BLVD Northbound | | | | SE WASHINGTON BLVD Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 41 | 35 | 57 | 0 | 45 | 19 | 13 | 0 | 47 | 178 | 37 | 0 | 12 | 209 | 43 | 736 | 2,877 | 0 | 0 | 0 | 2 |
| 4:15 PM | 0 | 48 | 45 | 57 | 0 | 42 | 24 | 9 | 0 | 33 | 185 | 49 | 0 | 8 | 207 | 40 | 747 | 2,891 | 1 | 0 | 0 | 0 |
| 4:30 PM | 0 | 52 | 33 | 55 | 0 | 51 | 30 | 8 | 0 | 43 | 169 | 31 | 0 | 7 | 180 | 31 | 690 | 2,853 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 46 | 38 | 43 | 0 | 35 | 21 | 7 | 0 | 47 | 181 | 39 | 0 | 11 | 195 | 41 | 704 | 2,864 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 49 | 32 | 58 | 0 | 51 | 35 | 8 | 0 | 49 | 182 | 47 | 0 | 8 | 190 | 41 | 750 | 2,778 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 41 | 40 | 42 | 0 | 77 | 28 | 10 | 0 | 42 | 150 | 29 | 0 | 14 | 195 | 41 | 709 | | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 34 | 31 | 57 | 0 | 23 | 25 | 9 | 0 | 57 | 174 | 50 | 0 | 14 | 181 | 46 | 701 | | 2 | 0 | 0 | 0 |
| 5:45 PM | 0 | 40 | 20 | 38 | 0 | 25 | 24 | 8 | 0 | 45 | 161 | 43 | 0 | 18 | 153 | 43 | 618 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 351 | 274 | 407 | 0 | 349 | 206 | 72 | 0 | 363 | 1,380 | 325 | 0 | 92 | 1,510 | 326 | 5,655 | | 3 | 0 | 0 | 2 |
| Peak Hour | 0 | 195 | 148 | 213 | 0 | 179 | 110 | 32 | 0 | 172 | 717 | 166 | 0 | 34 | 772 | 153 | 2,891 | | 1 | 0 | 0 | 0 |

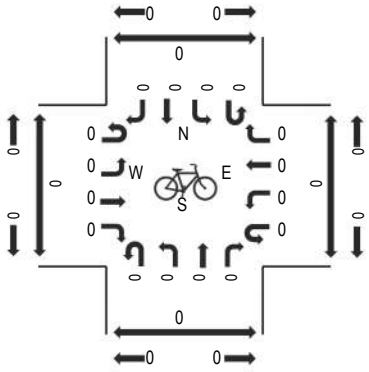
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 2 SE WASHINGTON BLVD & MISSION DR PM
**Date:** Thursday, December 14, 2023
**Peak Hour:** 04:45 PM - 05:45 PM
**Peak 15-Minutes:** 05:00 PM - 05:15 PM

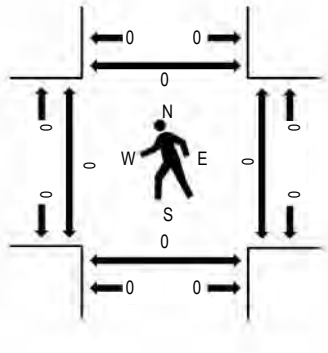
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

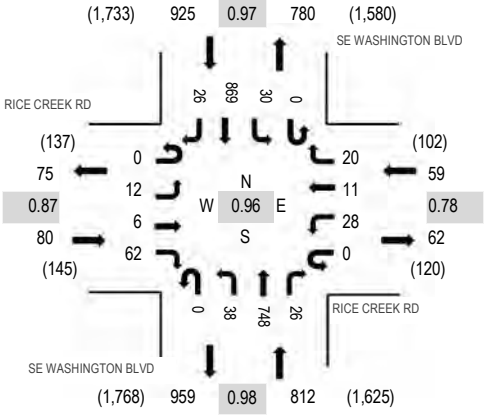
## Traffic Counts - Motorized Vehicles

| Interval Start Time | MISSION DR Eastbound | | | | MISSION DR Westbound | | | | SE WASHINGTON BLVD Northbound | | | | SE WASHINGTON BLVD Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 28 | 0 | 7 | 0 | 0 | 0 | 5 | 0 | 4 | 213 | 0 | 0 | 8 | 222 | 31 | 518 | 2,032 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 24 | 1 | 5 | 0 | 0 | 0 | 3 | 0 | 6 | 209 | 1 | 0 | 5 | 238 | 30 | 522 | 2,063 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 29 | 0 | 10 | 0 | 1 | 0 | 7 | 0 | 2 | 192 | 0 | 0 | 2 | 230 | 25 | 498 | 2,045 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 32 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 5 | 200 | 0 | 0 | 2 | 222 | 29 | 494 | 2,064 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 30 | 0 | 4 | 0 | 0 | 0 | 3 | 0 | 5 | 220 | 1 | 0 | 7 | 242 | 37 | 549 | 2,023 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 25 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 4 | 208 | 1 | 0 | 4 | 232 | 22 | 504 | | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 23 | 0 | 3 | 0 | 1 | 0 | 5 | 0 | 6 | 234 | 1 | 0 | 2 | 206 | 36 | 517 | | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 28 | 0 | 8 | 0 | 0 | 0 | 1 | 0 | 4 | 216 | 1 | 0 | 2 | 166 | 27 | 453 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 219 | 1 | 43 | 0 | 2 | 0 | 30 | 0 | 36 | 1,692 | 5 | 0 | 32 | 1,758 | 237 | 4,055 | | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 110 | 0 | 13 | 0 | 1 | 0 | 14 | 0 | 20 | 862 | 3 | 0 | 15 | 902 | 124 | 2,064 | | 0 | 0 | 0 | 0 |

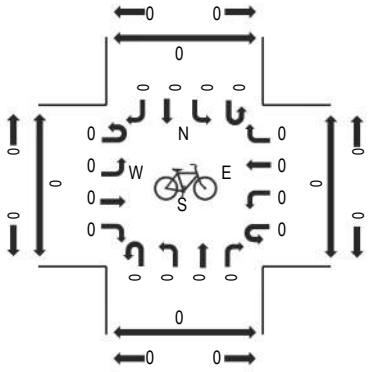
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 4 SE WASHINGTON BLVD & RICE CREEK RD PM
**Date:** Thursday, December 14, 2023
**Peak Hour:** 04:15 PM - 05:15 PM
**Peak 15-Minutes:** 05:00 PM - 05:15 PM

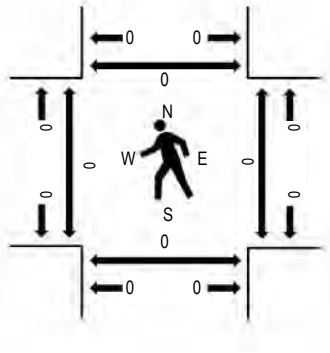
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

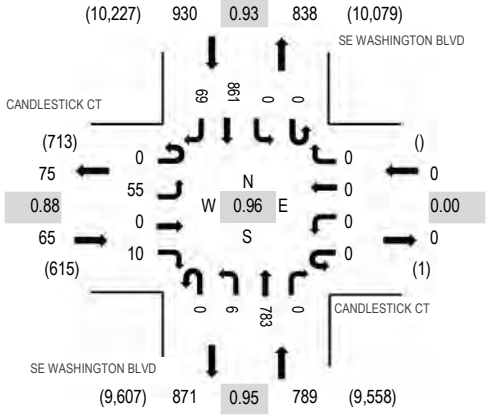
## Traffic Counts - Motorized Vehicles

| Interval Start Time | RICE CREEK RD Eastbound | | | | RICE CREEK RD Westbound | | | | SE WASHINGTON BLVD Northbound | | | | SE WASHINGTON BLVD Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 4 | 3 | 15 | 0 | 7 | 1 | 3 | 0 | 5 | 182 | 4 | 0 | 11 | 187 | 6 | 428 | 1,817 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 3 | 2 | 16 | 0 | 3 | 0 | 8 | 0 | 7 | 195 | 7 | 0 | 8 | 227 | 4 | 480 | 1,876 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 3 | 0 | 13 | 0 | 7 | 1 | 2 | 0 | 13 | 182 | 4 | 0 | 4 | 227 | 7 | 463 | 1,859 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 2 | 3 | 15 | 0 | 13 | 6 | 0 | 0 | 10 | 170 | 10 | 0 | 11 | 197 | 9 | 446 | 1,824 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 4 | 1 | 18 | 0 | 5 | 4 | 10 | 0 | 8 | 201 | 5 | 0 | 7 | 218 | 6 | 487 | 1,788 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 4 | 1 | 7 | 0 | 2 | 3 | 5 | 0 | 12 | 190 | 4 | 0 | 7 | 220 | 8 | 463 | | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 8 | 1 | 11 | 0 | 4 | 2 | 3 | 0 | 5 | 198 | 7 | 0 | 4 | 177 | 8 | 428 | | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 3 | 0 | 8 | 0 | 4 | 2 | 7 | 0 | 5 | 193 | 8 | 0 | 8 | 167 | 5 | 410 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 31 | 11 | 103 | 0 | 45 | 19 | 38 | 0 | 65 | 1,511 | 49 | 0 | 60 | 1,620 | 53 | 3,605 | | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 12 | 6 | 62 | 0 | 28 | 11 | 20 | 0 | 38 | 748 | 26 | 0 | 30 | 869 | 26 | 1,876 | | 0 | 0 | 0 | 0 |

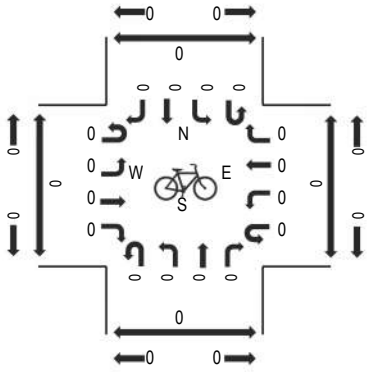
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 3 SE WASHINGTON BLVD & CANDLESTICK CT AM
**Date:** Thursday, December 14, 2023
**Peak Hour:** 04:15 PM - 05:15 PM
**Peak 15-Minutes:** 04:15 PM - 04:30 PM

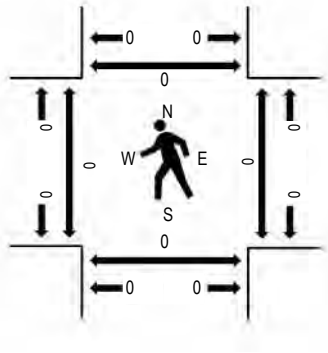
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

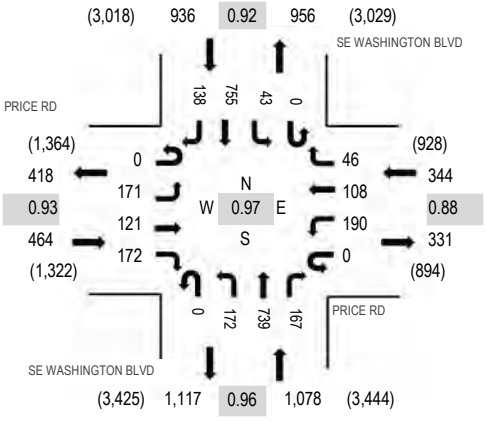
## Traffic Counts - Motorized Vehicles

| Interval Start Time | CANDLESTICK CT Eastbound | | | | CANDLESTICK CT Westbound | | | | SE WASHINGTON BLVD Northbound | | | | SE WASHINGTON BLVD Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 12:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 0 | 10 | 0 | 38 | 122 | 0 | 0 | 0 | 0 |
| 12:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 0 | 12 | 0 | 40 | 107 | 0 | 0 | 0 | 0 |
| 12:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 7 | 0 | 25 | 100 | 0 | 0 | 0 | 0 |
| 12:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 5 | 0 | 19 | 97 | 0 | 0 | 0 | 0 |
| 1:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 6 | 0 | 23 | 94 | 0 | 0 | 0 | 0 |
| 1:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 0 | 0 | 10 | 0 | 33 | 93 | 0 | 0 | 0 | 0 |
| 1:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 6 | 1 | 22 | 81 | 0 | 0 | 0 | 0 |
| 1:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 4 | 0 | 16 | 78 | 0 | 0 | 0 | 0 |
| 2:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 3 | 0 | 22 | 82 | 0 | 0 | 0 | 0 |
| 2:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 16 | 0 | 21 | 90 | 0 | 0 | 0 | 0 |
| 2:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 11 | 0 | 19 | 94 | 0 | 0 | 0 | 0 |
| 2:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 12 | 0 | 20 | 127 | 0 | 0 | 0 | 0 |
| 3:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 19 | 0 | 30 | 145 | 0 | 0 | 0 | 0 |
| 3:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 20 | 1 | 25 | 167 | 0 | 0 | 0 | 0 |
| 3:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 | 35 | 0 | 52 | 208 | 0 | 0 | 0 | 0 |
| 3:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 28 | 0 | 38 | 205 | 0 | 0 | 0 | 0 |
| 4:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 43 | 0 | 52 | 227 | 0 | 0 | 0 | 0 |
| 4:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 50 | 0 | 66 | 254 | 0 | 0 | 0 | 0 |
| 4:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 37 | 0 | 49 | 266 | 0 | 0 | 0 | 0 |
| 4:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 0 | 0 | 39 | 1 | 60 | 310 | 0 | 0 | 0 | 0 |
| 5:00 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 0 | 0 | 54 | 1 | 79 | 362 | 0 | 0 | 0 | 0 |
| 5:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 54 | 0 | 78 | 458 | 0 | 0 | 0 | 0 |
| 5:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 0 | 64 | 1 | 93 | 540 | 0 | 0 | 0 | 0 |
| 5:45 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 62 | 0 | 112 | 661 | 0 | 0 | 0 | 0 |
| 6:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | 0 | 0 | 0 | 120 | 0 | 175 | 810 | 0 | 0 | 0 | 0 |
| 6:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 | 0 | 0 | 0 | 99 | 2 | 160 | 878 | 0 | 0 | 0 | 0 |
| 6:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 98 | 0 | 0 | 0 | 115 | 1 | 214 | 1,015 | 0 | 0 | 0 | 0 |
| 6:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 124 | 0 | 0 | 0 | 135 | 2 | 261 | 1,116 | 0 | 0 | 0 | 0 |
| 7:00 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 103 | 0 | 0 | 0 | 139 | 0 | 243 | 1,177 | 0 | 0 | 0 | 0 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 139 | 0 | 0 | 0 | 157 | 1 | 297 | 1,236 | 0 | 0 | 0 | 0 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 183 | 0 | 0 | 0 | 130 | 2 | 315 | 1,237 | 0 | 0 | 0 | 0 |
| 7:45 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 159 | 0 | 0 | 0 | 154 | 7 | 322 | 1,203 | 0 | 0 | 0 | 0 |
| 8:00 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 162 | 0 | 0 | 0 | 133 | 6 | 302 | 1,202 | 0 | 0 | 0 | 0 |
| 8:15 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 146 | 0 | 0 | 0 | 143 | 8 | 298 | 1,179 | 0 | 0 | 0 | 0 |

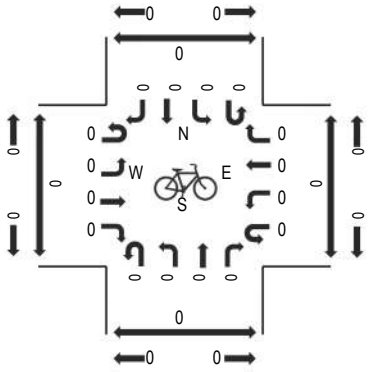
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 1 SE WASHINGTON BLVD & PRICE RD PM
**Date:** Friday, December 15, 2023
**Peak Hour:** 04:00 PM - 05:00 PM
**Peak 15-Minutes:** 04:00 PM - 04:15 PM

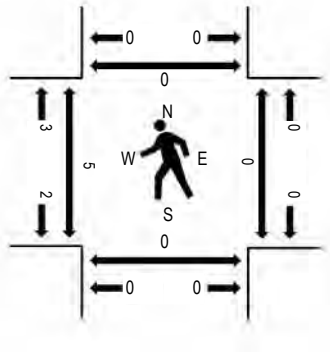
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

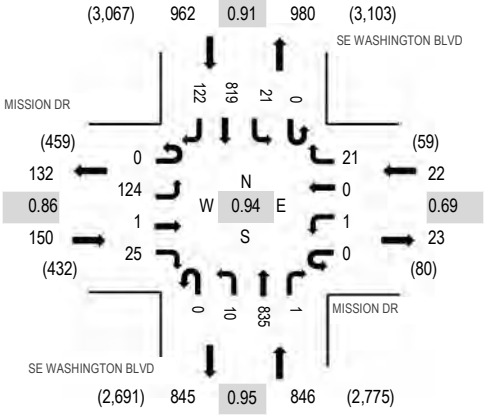
## Traffic Counts - Motorized Vehicles

| Interval Start Time | PRICE RD Eastbound | | | | PRICE RD Westbound | | | | SE WASHINGTON BLVD Northbound | | | | SE WASHINGTON BLVD Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 39 | 32 | 51 | 0 | 49 | 36 | 8 | 0 | 42 | 180 | 36 | 0 | 13 | 206 | 35 | 727 | 2,822 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 43 | 37 | 42 | 0 | 48 | 19 | 13 | 0 | 43 | 186 | 38 | 0 | 9 | 205 | 36 | 719 | 2,818 | 1 | 0 | 0 | 0 |
| 4:30 PM | 0 | 48 | 27 | 45 | 0 | 51 | 27 | 11 | 0 | 47 | 190 | 46 | 0 | 10 | 186 | 36 | 724 | 2,781 | 2 | 0 | 0 | 0 |
| 4:45 PM | 0 | 41 | 25 | 34 | 0 | 42 | 26 | 14 | 0 | 40 | 183 | 47 | 0 | 11 | 158 | 31 | 652 | 2,669 | 2 | 0 | 0 | 0 |
| 5:00 PM | 0 | 47 | 26 | 53 | 0 | 57 | 35 | 7 | 0 | 44 | 165 | 43 | 0 | 11 | 191 | 44 | 723 | 2,630 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 33 | 27 | 34 | 0 | 42 | 25 | 8 | 0 | 59 | 190 | 34 | 0 | 9 | 191 | 30 | 682 | 2,464 | 1 | 0 | 0 | 0 |
| 5:30 PM | 0 | 44 | 29 | 36 | 0 | 24 | 19 | 14 | 0 | 43 | 171 | 38 | 0 | 9 | 151 | 34 | 612 | 2,351 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 31 | 17 | 49 | 0 | 28 | 10 | 6 | 0 | 39 | 176 | 32 | 0 | 9 | 173 | 43 | 613 | 2,206 | 0 | 0 | 0 | 0 |
| 6:00 PM | 0 | 32 | 7 | 23 | 0 | 24 | 8 | 13 | 0 | 52 | 178 | 15 | 0 | 7 | 174 | 24 | 557 | 1,990 | 0 | 0 | 0 | 0 |
| 6:15 PM | 0 | 34 | 12 | 21 | 0 | 24 | 12 | 7 | 0 | 41 | 159 | 26 | 0 | 5 | 187 | 41 | 569 | 1,803 | 0 | 0 | 0 | 0 |
| 6:30 PM | 0 | 25 | 16 | 30 | 0 | 24 | 26 | 6 | 0 | 34 | 126 | 26 | 0 | 7 | 114 | 33 | 467 | 1,551 | 0 | 0 | 0 | 0 |
| 6:45 PM | 0 | 21 | 21 | 25 | 0 | 13 | 16 | 6 | 0 | 36 | 115 | 23 | 0 | 1 | 106 | 14 | 397 | 1,367 | 0 | 0 | 0 | 0 |
| 7:00 PM | 0 | 23 | 7 | 17 | 0 | 23 | 11 | 5 | 0 | 20 | 102 | 19 | 0 | 6 | 113 | 24 | 370 | 1,270 | 3 | 0 | 0 | 0 |
| 7:15 PM | 0 | 13 | 3 | 10 | 0 | 19 | 14 | 3 | 0 | 19 | 94 | 18 | 0 | 2 | 108 | 14 | 317 | | 0 | 0 | 0 | 0 |
| 7:30 PM | 0 | 18 | 9 | 16 | 0 | 12 | 6 | 5 | 0 | 14 | 94 | 11 | 0 | 5 | 82 | 11 | 283 | | 1 | 0 | 0 | 0 |
| 7:45 PM | 0 | 25 | 13 | 11 | 0 | 16 | 11 | 5 | 0 | 21 | 72 | 17 | 0 | 3 | 87 | 19 | 300 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 517 | 308 | 497 | 0 | 496 | 301 | 131 | 0 | 594 | 2,381 | 469 | 0 | 117 | 2,432 | 469 | 8,712 | | 10 | 0 | 0 | 0 |
| Peak Hour | 0 | 171 | 121 | 172 | 0 | 190 | 108 | 46 | 0 | 172 | 739 | 167 | 0 | 43 | 755 | 138 | 2,822 | | 5 | 0 | 0 | 0 |

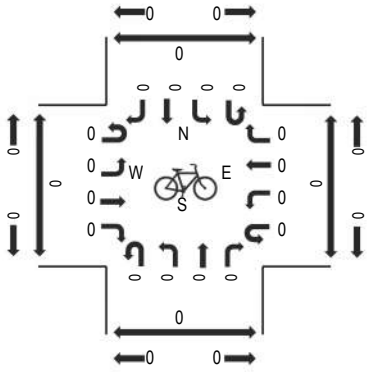
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 2 SE WASHINGTON BLVD & MISSION DR PM
**Date:** Friday, December 15, 2023
**Peak Hour:** 04:30 PM - 05:30 PM
**Peak 15-Minutes:** 05:15 PM - 05:30 PM

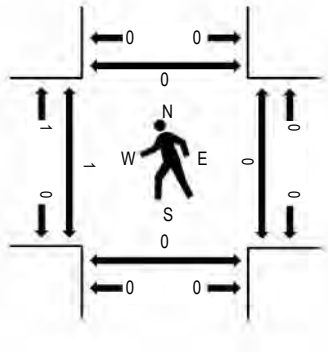
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

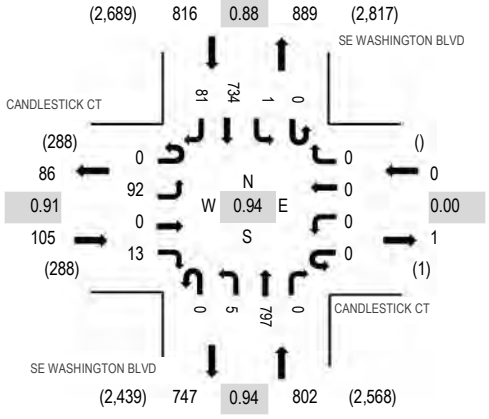
## Traffic Counts - Motorized Vehicles

| Interval Start Time | MISSION DR Eastbound | | | | MISSION DR Westbound | | | | SE WASHINGTON BLVD Northbound | | | | SE WASHINGTON BLVD Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 31 | 0 | 11 | 0 | 0 | 1 | 3 | 0 | 6 | 209 | 0 | 0 | 4 | 227 | 28 | 520 | 1,978 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 23 | 0 | 9 | 0 | 0 | 0 | 3 | 0 | 1 | 217 | 1 | 0 | 10 | 220 | 32 | 516 | 1,971 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 27 | 0 | 8 | 0 | 0 | 0 | 8 | 0 | 0 | 198 | 0 | 0 | 6 | 203 | 27 | 477 | 1,980 | 1 | 0 | 0 | 0 |
| 4:45 PM | 0 | 41 | 0 | 4 | 0 | 0 | 0 | 4 | 0 | 2 | 210 | 1 | 0 | 4 | 168 | 31 | 465 | 1,961 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 30 | 0 | 5 | 0 | 1 | 0 | 5 | 0 | 4 | 210 | 0 | 0 | 5 | 225 | 28 | 513 | 1,956 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 26 | 1 | 8 | 0 | 0 | 0 | 4 | 0 | 4 | 217 | 0 | 0 | 6 | 223 | 36 | 525 | 1,875 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 23 | 0 | 3 | 0 | 2 | 0 | 2 | 0 | 7 | 224 | 1 | 0 | 5 | 159 | 32 | 458 | 1,785 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 23 | 0 | 8 | 0 | 1 | 0 | 4 | 0 | 4 | 190 | 1 | 0 | 3 | 189 | 37 | 460 | 1,653 | 0 | 0 | 0 | 0 |
| 6:00 PM | 0 | 21 | 0 | 5 | 0 | 1 | 0 | 2 | 0 | 4 | 196 | 2 | 0 | 2 | 176 | 23 | 432 | 1,479 | 0 | 0 | 0 | 0 |
| 6:15 PM | 0 | 24 | 0 | 8 | 0 | 1 | 0 | 2 | 0 | 5 | 181 | 1 | 0 | 3 | 183 | 27 | 435 | 1,307 | 0 | 0 | 0 | 0 |
| 6:30 PM | 0 | 20 | 0 | 2 | 0 | 3 | 0 | 2 | 0 | 5 | 139 | 0 | 0 | 6 | 127 | 22 | 326 | 1,129 | 0 | 0 | 0 | 0 |
| 6:45 PM | 0 | 19 | 0 | 4 | 0 | 1 | 0 | 3 | 0 | 2 | 128 | 3 | 0 | 1 | 105 | 20 | 286 | 997 | 0 | 0 | 0 | 0 |
| 7:00 PM | 0 | 16 | 0 | 2 | 0 | 1 | 0 | 2 | 0 | 4 | 99 | 1 | 1 | 3 | 110 | 21 | 260 | 920 | 0 | 0 | 0 | 0 |
| 7:15 PM | 0 | 8 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 3 | 109 | 2 | 0 | 2 | 109 | 21 | 257 | | 0 | 0 | 0 | 0 |
| 7:30 PM | 0 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 86 | 0 | 0 | 4 | 83 | 8 | 194 | | 0 | 0 | 0 | 0 |
| 7:45 PM | 0 | 7 | 0 | 3 | 0 | 0 | 0 | 1 | 0 | 3 | 93 | 0 | 0 | 2 | 91 | 9 | 209 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 349 | 1 | 82 | 0 | 11 | 1 | 47 | 0 | 56 | 2,706 | 13 | 1 | 66 | 2,598 | 402 | 6,333 | | 1 | 0 | 0 | 0 |
| Peak Hour | 0 | 124 | 1 | 25 | 0 | 1 | 0 | 21 | 0 | 10 | 835 | 1 | 0 | 21 | 819 | 122 | 1,980 | | 1 | 0 | 0 | 0 |

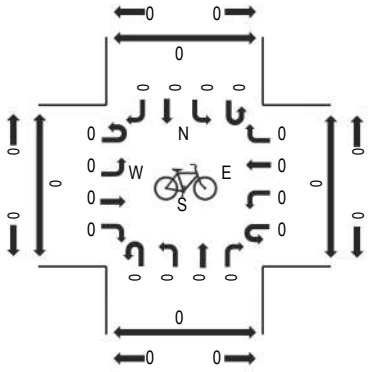
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 3 SE WASHINGTON BLVD & CANDLESTICK CT PM
**Date:** Friday, December 15, 2023
**Peak Hour:** 05:00 PM - 06:00 PM
**Peak 15-Minutes:** 05:15 PM - 05:30 PM

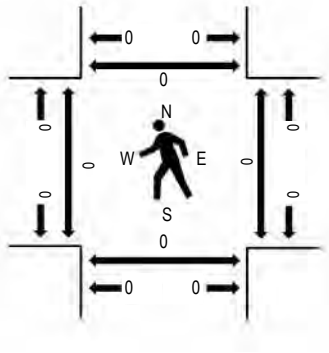
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

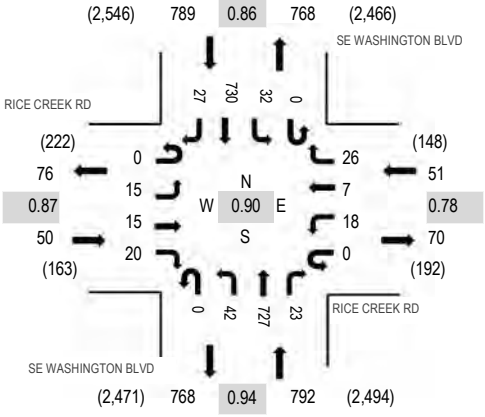
## Traffic Counts - Motorized Vehicles

| Interval Start Time | CANDLESTICK CT Eastbound | | | | CANDLESTICK CT Westbound | | | | SE WASHINGTON BLVD Northbound | | | | SE WASHINGTON BLVD Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 17 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 196 | 0 | 0 | 0 | 199 | 26 | 440 | 1,710 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 209 | 0 | 0 | 0 | 225 | 18 | 466 | 1,713 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 16 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 187 | 0 | 0 | 0 | 193 | 18 | 415 | 1,707 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 17 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 195 | 0 | 0 | 0 | 145 | 28 | 389 | 1,697 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 26 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 192 | 0 | 0 | 0 | 208 | 14 | 443 | 1,723 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 23 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 2 | 193 | 0 | 0 | 1 | 208 | 28 | 460 | 1,671 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 21 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 211 | 0 | 0 | 0 | 142 | 25 | 405 | 1,597 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 22 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 201 | 0 | 0 | 0 | 176 | 14 | 415 | 1,468 | 0 | 0 | 0 | 0 |
| 6:00 PM | 0 | 22 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 181 | 0 | 0 | 0 | 163 | 24 | 391 | 1,319 | 0 | 0 | 0 | 0 |
| 6:15 PM | 0 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 174 | 0 | 0 | 0 | 175 | 19 | 386 | 1,130 | 0 | 0 | 0 | 0 |
| 6:30 PM | 0 | 14 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 131 | 0 | 0 | 0 | 112 | 17 | 276 | 967 | 0 | 0 | 0 | 0 |
| 6:45 PM | 0 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 141 | 0 | 0 | 0 | 101 | 11 | 266 | 869 | 0 | 0 | 0 | 0 |
| 7:00 PM | 0 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 74 | 0 | 0 | 0 | 100 | 11 | 202 | 793 | 0 | 0 | 0 | 0 |
| 7:15 PM | 0 | 12 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 97 | 12 | 223 | | 0 | 0 | 0 | 0 |
| 7:30 PM | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 82 | 0 | 0 | 0 | 79 | 7 | 178 | | 0 | 0 | 0 | 0 |
| 7:45 PM | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 91 | 0 | 0 | 0 | 87 | 6 | 190 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 259 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 10 | 2,558 | 0 | 0 | 1 | 2,410 | 278 | 5,545 | | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 92 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 5 | 797 | 0 | 0 | 1 | 734 | 81 | 1,723 | | 0 | 0 | 0 | 0 |

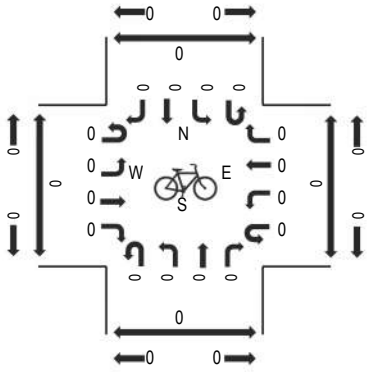
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 4 SE WASHINGTON BLVD & RICE CREEK RD PM
**Date:** Friday, December 15, 2023
**Peak Hour:** 04:15 PM - 05:15 PM
**Peak 15-Minutes:** 04:15 PM - 04:30 PM

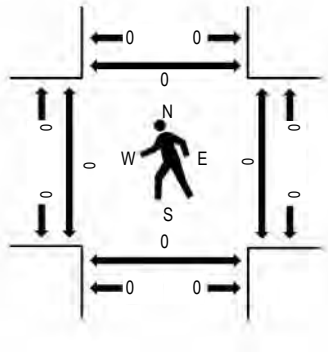
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | RICE CREEK RD Eastbound | | | | RICE CREEK RD Westbound | | | | SE WASHINGTON BLVD Northbound | | | | SE WASHINGTON BLVD Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 4 | 3 | 9 | 0 | 6 | 0 | 10 | 0 | 6 | 187 | 11 | 0 | 10 | 183 | 6 | 435 | 1,664 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 4 | 6 | 5 | 0 | 4 | 2 | 8 | 0 | 10 | 192 | 6 | 0 | 15 | 205 | 9 | 466 | 1,682 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 6 | 4 | 4 | 0 | 7 | 3 | 4 | 0 | 8 | 174 | 3 | 0 | 8 | 178 | 9 | 408 | 1,654 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 3 | 0 | 4 | 0 | 3 | 0 | 8 | 0 | 7 | 177 | 3 | 0 | 1 | 143 | 6 | 355 | 1,636 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 2 | 5 | 7 | 0 | 4 | 2 | 6 | 0 | 17 | 184 | 11 | 0 | 8 | 204 | 3 | 453 | 1,673 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 5 | 4 | 6 | 0 | 4 | 4 | 10 | 0 | 7 | 178 | 10 | 0 | 6 | 195 | 9 | 438 | 1,573 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 7 | 9 | 3 | 0 | 2 | 1 | 7 | 0 | 8 | 192 | 4 | 0 | 5 | 144 | 8 | 390 | 1,505 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 6 | 3 | 9 | 0 | 4 | 1 | 9 | 0 | 6 | 157 | 1 | 0 | 3 | 187 | 6 | 392 | 1,381 | 0 | 0 | 0 | 0 |
| 6:00 PM | 0 | 2 | 0 | 1 | 0 | 1 | 4 | 9 | 0 | 4 | 148 | 4 | 0 | 9 | 163 | 8 | 353 | 1,243 | 0 | 0 | 0 | 0 |
| 6:15 PM | 0 | 4 | 2 | 3 | 0 | 3 | 2 | 5 | 0 | 5 | 167 | 2 | 0 | 5 | 166 | 6 | 370 | 1,079 | 0 | 0 | 0 | 0 |
| 6:30 PM | 0 | 2 | 1 | 1 | 0 | 2 | 0 | 3 | 0 | 9 | 124 | 4 | 0 | 2 | 115 | 3 | 266 | 892 | 0 | 0 | 0 | 0 |
| 6:45 PM | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 4 | 129 | 2 | 0 | 3 | 104 | 3 | 254 | 822 | 0 | 0 | 0 | 0 |
| 7:00 PM | 0 | 0 | 1 | 2 | 0 | 2 | 0 | 3 | 0 | 3 | 70 | 2 | 0 | 2 | 100 | 4 | 189 | 771 | 0 | 0 | 0 | 0 |
| 7:15 PM | 0 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 84 | 0 | 0 | 4 | 82 | 7 | 183 | | 0 | 0 | 0 | 0 |
| 7:30 PM | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 74 | 2 | 0 | 2 | 103 | 5 | 196 | | 0 | 0 | 0 | 0 |
| 7:45 PM | 0 | 3 | 2 | 4 | 0 | 1 | 0 | 2 | 0 | 4 | 87 | 1 | 0 | 3 | 89 | 7 | 203 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 57 | 40 | 66 | 0 | 44 | 19 | 85 | 0 | 104 | 2,324 | 66 | 0 | 86 | 2,361 | 99 | 5,351 | | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 15 | 15 | 20 | 0 | 18 | 7 | 26 | 0 | 42 | 727 | 23 | 0 | 32 | 730 | 27 | 1,682 | | 0 | 0 | 0 | 0 |

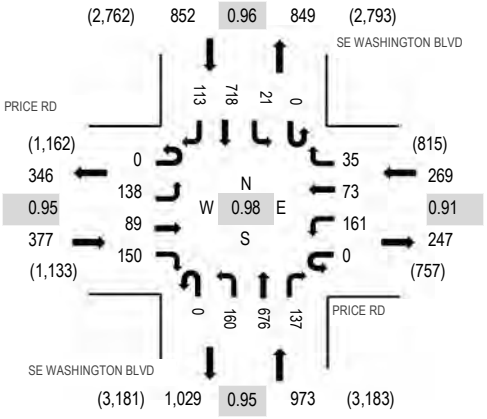
| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8:30 AM | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 133 | 0 | 0 | 0 | 142 | 3 | 281 | 1,153 | 0 | 0 | 0 | 0 |
| 8:45 AM | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 163 | 0 | 0 | 0 | 142 | 12 | 321 | 1,154 | 0 | 0 | 0 | 0 |
| 9:00 AM | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 116 | 0 | 0 | 0 | 146 | 8 | 279 | 1,105 | 0 | 0 | 0 | 0 |
| 9:15 AM | 0 | 7 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 135 | 0 | 0 | 0 | 118 | 8 | 272 | 1,126 | 0 | 0 | 0 | 0 |
| 9:30 AM | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 108 | 0 | 0 | 0 | 153 | 12 | 282 | 1,168 | 0 | 0 | 0 | 0 |
| 9:45 AM | 0 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 117 | 0 | 0 | 0 | 133 | 12 | 272 | 1,163 | 0 | 0 | 0 | 0 |
| 10:00 AM | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 142 | 0 | 0 | 0 | 133 | 17 | 300 | 1,208 | 0 | 0 | 0 | 0 |
| 10:15 AM | 0 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 138 | 0 | 0 | 0 | 149 | 13 | 314 | 1,191 | 0 | 0 | 0 | 0 |
| 10:30 AM | 0 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 112 | 0 | 0 | 0 | 138 | 15 | 277 | 1,151 | 0 | 0 | 0 | 0 |
| 10:45 AM | 0 | 8 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 142 | 0 | 0 | 0 | 149 | 15 | 317 | 1,160 | 0 | 0 | 0 | 0 |
| 11:00 AM | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 123 | 0 | 0 | 0 | 128 | 23 | 283 | 1,180 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 15 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 123 | 0 | 0 | 0 | 126 | 8 | 274 | 1,204 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 140 | 0 | 0 | 0 | 132 | 2 | 286 | 1,253 | 0 | 0 | 0 | 0 |
| 11:45 AM | 0 | 10 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 161 | 0 | 0 | 0 | 145 | 17 | 337 | 1,255 | 0 | 0 | 0 | 0 |
| 12:00 PM | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 149 | 0 | 0 | 0 | 129 | 17 | 307 | 1,241 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 140 | 1 | 0 | 0 | 149 | 22 | 323 | 1,228 | 0 | 0 | 0 | 0 |
| 12:30 PM | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 147 | 0 | 0 | 0 | 115 | 13 | 288 | 1,244 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 144 | 0 | 0 | 0 | 151 | 13 | 323 | 1,291 | 0 | 0 | 0 | 0 |
| 1:00 PM | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 122 | 0 | 0 | 0 | 134 | 15 | 294 | 1,328 | 0 | 0 | 0 | 0 |
| 1:15 PM | 0 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 143 | 0 | 0 | 0 | 159 | 27 | 339 | 1,375 | 0 | 0 | 0 | 0 |
| 1:30 PM | 0 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 146 | 0 | 0 | 0 | 154 | 21 | 335 | 1,361 | 0 | 0 | 0 | 0 |
| 1:45 PM | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 137 | 0 | 0 | 0 | 194 | 15 | 360 | 1,370 | 0 | 0 | 0 | 0 |
| 2:00 PM | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 138 | 0 | 0 | 0 | 160 | 21 | 341 | 1,385 | 0 | 0 | 0 | 0 |
| 2:15 PM | 0 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 136 | 0 | 0 | 0 | 161 | 12 | 325 | 1,451 | 0 | 0 | 0 | 0 |
| 2:30 PM | 0 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 155 | 0 | 0 | 0 | 161 | 13 | 344 | 1,495 | 0 | 0 | 0 | 0 |
| 2:45 PM | 0 | 12 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 147 | 0 | 0 | 0 | 193 | 21 | 375 | 1,609 | 0 | 0 | 0 | 0 |
| 3:00 PM | 0 | 17 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 187 | 0 | 0 | 0 | 185 | 15 | 407 | 1,628 | 0 | 0 | 0 | 0 |
| 3:15 PM | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 170 | 0 | 0 | 0 | 169 | 16 | 369 | 1,656 | 0 | 0 | 0 | 0 |
| 3:30 PM | 0 | 15 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 202 | 0 | 0 | 0 | 221 | 17 | 458 | 1,752 | 0 | 0 | 0 | 0 |
| 3:45 PM | 0 | 9 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 174 | 0 | 0 | 0 | 191 | 16 | 394 | 1,729 | 0 | 0 | 0 | 0 |
| 4:00 PM | 0 | 13 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 202 | 0 | 0 | 0 | 203 | 15 | 435 | 1,760 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 201 | 0 | 0 | 0 | 229 | 21 | 465 | 1,784 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 12 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 183 | 0 | 0 | 0 | 220 | 16 | 435 | 1,764 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 16 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 186 | 0 | 0 | 0 | 206 | 13 | 425 | 1,768 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 13 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 | 213 | 0 | 0 | 0 | 206 | 19 | 459 | 1,754 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 9 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 203 | 0 | 0 | 0 | 211 | 17 | 445 | 1,657 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 17 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 224 | 0 | 0 | 0 | 181 | 14 | 439 | 1,540 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 208 | 0 | 0 | 0 | 182 | 6 | 411 | 1,364 | 0 | 0 | 0 | 0 |
| 6:00 PM | 0 | 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 188 | 0 | 0 | 0 | 154 | 10 | 362 | 1,159 | 0 | 0 | 0 | 0 |
| 6:15 PM | 0 | 9 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 164 | 0 | 0 | 0 | 142 | 8 | 328 | 1,063 | 0 | 0 | 0 | 0 |
| 6:30 PM | 0 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 132 | 0 | 0 | 0 | 112 | 10 | 263 | 951 | 0 | 0 | 0 | 0 |
| 6:45 PM | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 105 | 0 | 0 | 0 | 81 | 10 | 206 | 861 | 0 | 0 | 0 | 0 |
| 7:00 PM | 0 | 12 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 135 | 0 | 0 | 0 | 101 | 15 | 266 | 857 | 0 | 0 | 0 | 0 |
| 7:15 PM | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 112 | 0 | 0 | 0 | 88 | 5 | 216 | 764 | 0 | 0 | 0 | 0 |
| 7:30 PM | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 59 | 7 | 173 | 707 | 0 | 0 | 0 | 0 |
| 7:45 PM | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 117 | 0 | 0 | 0 | 75 | 5 | 202 | 749 | 0 | 0 | 0 | 0 |
| 8:00 PM | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 95 | 0 | 0 | 0 | 65 | 4 | 173 | 670 | 0 | 0 | 0 | 0 |
| 8:15 PM | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 83 | 0 | 0 | 0 | 68 | 5 | 159 | 630 | 0 | 0 | 0 | 0 |
| 8:30 PM | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 132 | 0 | 0 | 0 | 77 | 1 | 215 | 591 | 0 | 0 | 0 | 0 |
| 8:45 PM | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 72 | 0 | 0 | 0 | 48 | 0 | 123 | 477 | 0 | 0 | 0 | 0 |
| 9:00 PM | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 58 | 0 | 0 | 0 | 64 | 3 | 133 | 436 | 0 | 0 | 0 | 0 |
| 9:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 68 | 0 | 0 | 0 | 52 | 0 | 120 | 365 | 0 | 0 | 0 | 0 |
| 9:30 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 58 | 0 | 0 | 0 | 41 | 1 | 101 | 323 | 0 | 0 | 0 | 0 |
| 9:45 PM | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 0 | 0 | 0 | 30 | 2 | 82 | 289 | 0 | 0 | 0 | 0 |
| 10:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 0 | 22 | 0 | 62 | 273 | 0 | 0 | 0 | 0 |
| 10:15 PM | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 24 | 2 | 78 | 265 | 0 | 0 | 0 | 0 |
| 10:30 PM | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 | 15 | 0 | 67 | 246 | 0 | 0 | 0 | 0 |
| 10:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 0 | 0 | 0 | 23 | 0 | 66 | 222 | 0 | 0 | 0 | 0 |
| 11:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 0 | 0 | 20 | 0 | 54 | 195 | 0 | 0 | 0 | 0 |
| 11:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 0 | 24 | 0 | 59 | | 0 | 0 | 0 | 0 |
| 11:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 17 | 0 | 43 | | 0 | 0 | 0 | 0 |

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 0 | 13 | 0 | 39 | 0 | 0 | 0 | 0 |
| Count Total | 0 | 553 | 0 | 62 | 0 | 0 | 0 | 0 | 0 | 31 | 9,526 | 1 | 0 | 0 | 9,545 | 682 | 20,400 | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 55 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 6 | 783 | 0 | 0 | 0 | 861 | 69 | 1,784 | 0 | 0 | 0 | 0 |

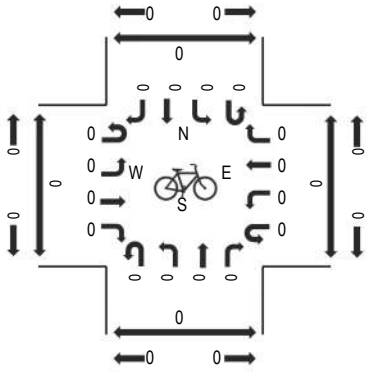
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 1 SE WASHINGTON BLVD & PRICE RD PM
**Date:** Saturday, December 16, 2023
**Peak Hour:** 04:15 PM - 05:15 PM
**Peak 15-Minutes:** 04:45 PM - 05:00 PM

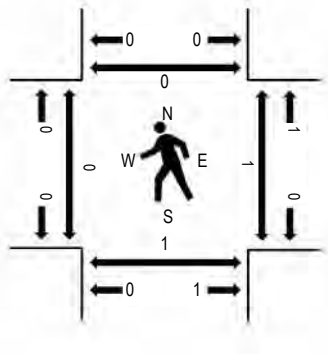
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

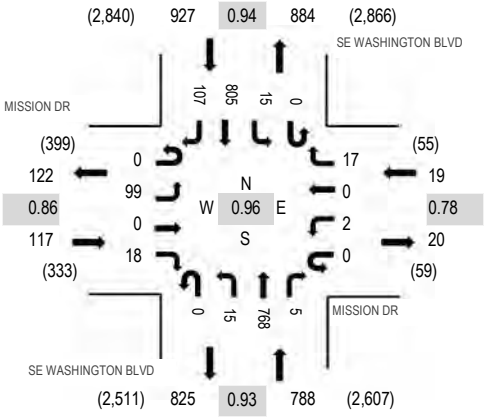
## Traffic Counts - Motorized Vehicles

| Interval Start Time | PRICE RD Eastbound | | | | PRICE RD Westbound | | | | SE WASHINGTON BLVD Northbound | | | | SE WASHINGTON BLVD Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 45 | 23 | 32 | 0 | 53 | 16 | 8 | 0 | 33 | 155 | 32 | 0 | 3 | 174 | 32 | 606 | 2,447 | 2 | 1 | 0 | 0 |
| 4:15 PM | 0 | 31 | 13 | 40 | 0 | 37 | 22 | 7 | 0 | 31 | 179 | 36 | 0 | 4 | 179 | 30 | 609 | 2,471 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 29 | 25 | 43 | 0 | 27 | 19 | 10 | 0 | 42 | 162 | 33 | 0 | 4 | 185 | 23 | 602 | 2,444 | 0 | 1 | 1 | 0 |
| 4:45 PM | 0 | 36 | 28 | 36 | 0 | 44 | 18 | 8 | 0 | 44 | 177 | 34 | 0 | 6 | 171 | 28 | 630 | 2,402 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 42 | 23 | 31 | 0 | 53 | 14 | 10 | 0 | 43 | 158 | 34 | 0 | 7 | 183 | 32 | 630 | 2,309 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 27 | 18 | 42 | 0 | 39 | 20 | 9 | 0 | 35 | 155 | 38 | 0 | 7 | 153 | 39 | 582 | 2,211 | 1 | 0 | 0 | 0 |
| 5:30 PM | 0 | 44 | 17 | 20 | 0 | 32 | 25 | 7 | 0 | 38 | 146 | 31 | 0 | 8 | 165 | 27 | 560 | 2,089 | 1 | 0 | 0 | 0 |
| 5:45 PM | 0 | 34 | 16 | 35 | 0 | 35 | 14 | 7 | 0 | 28 | 146 | 20 | 0 | 8 | 161 | 33 | 537 | 1,972 | 0 | 0 | 0 | 0 |
| 6:00 PM | 0 | 32 | 9 | 37 | 0 | 32 | 10 | 7 | 0 | 44 | 148 | 27 | 0 | 7 | 154 | 25 | 532 | 1,822 | 0 | 0 | 0 | 0 |
| 6:15 PM | 0 | 18 | 9 | 22 | 0 | 21 | 17 | 6 | 0 | 27 | 148 | 25 | 0 | 9 | 137 | 21 | 460 | 1,655 | 0 | 0 | 0 | 0 |
| 6:30 PM | 0 | 19 | 6 | 19 | 0 | 30 | 10 | 6 | 0 | 31 | 135 | 24 | 0 | 8 | 134 | 21 | 443 | 1,504 | 0 | 0 | 0 | 0 |
| 6:45 PM | 0 | 24 | 13 | 15 | 0 | 18 | 11 | 4 | 0 | 32 | 96 | 28 | 0 | 10 | 117 | 19 | 387 | 1,387 | 0 | 0 | 0 | 0 |
| 7:00 PM | 0 | 21 | 7 | 24 | 0 | 19 | 12 | 7 | 0 | 24 | 111 | 28 | 0 | 5 | 91 | 16 | 365 | 1,315 | 0 | 0 | 0 | 0 |
| 7:15 PM | 0 | 22 | 11 | 16 | 0 | 13 | 6 | 3 | 0 | 30 | 87 | 15 | 0 | 3 | 80 | 23 | 309 | | 0 | 0 | 0 | 0 |
| 7:30 PM | 0 | 20 | 9 | 17 | 0 | 5 | 15 | 4 | 0 | 26 | 105 | 16 | 0 | 2 | 98 | 9 | 326 | | 0 | 0 | 0 | 0 |
| 7:45 PM | 0 | 16 | 1 | 16 | 0 | 10 | 11 | 4 | 0 | 16 | 118 | 12 | 0 | 5 | 86 | 20 | 315 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 460 | 228 | 445 | 0 | 468 | 240 | 107 | 0 | 524 | 2,226 | 433 | 0 | 96 | 2,268 | 398 | 7,893 | | 4 | 2 | 1 | 0 |
| Peak Hour | 0 | 138 | 89 | 150 | 0 | 161 | 73 | 35 | 0 | 160 | 676 | 137 | 0 | 21 | 718 | 113 | 2,471 | | 0 | 1 | 1 | 0 |

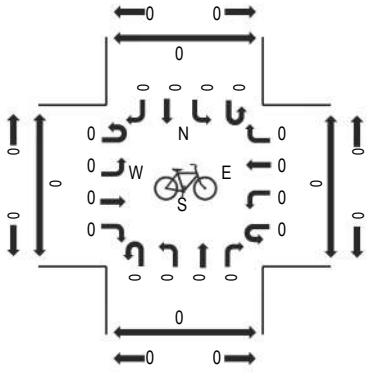
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 2 SE WASHINGTON BLVD & MISSION DR PM
**Date:** Saturday, December 16, 2023
**Peak Hour:** 04:30 PM - 05:30 PM
**Peak 15-Minutes:** 04:45 PM - 05:00 PM

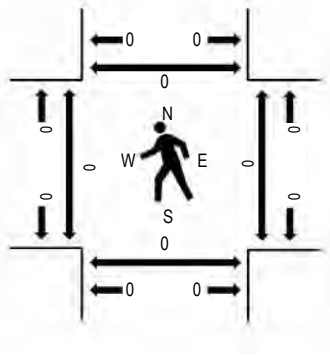
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

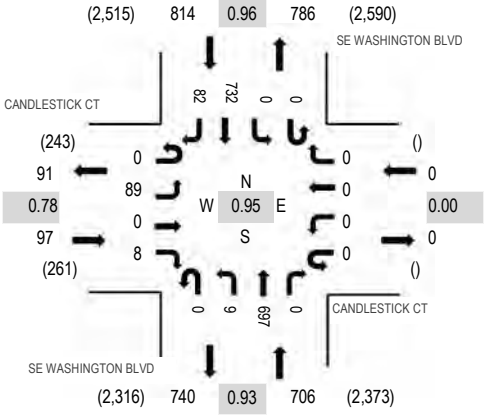
## Traffic Counts - Motorized Vehicles

| Interval Start Time | MISSION DR Eastbound | | | | MISSION DR Westbound | | | | SE WASHINGTON BLVD Northbound | | | | SE WASHINGTON BLVD Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 16 | 0 | 4 | 0 | 0 | 0 | 3 | 0 | 6 | 183 | 1 | 0 | 0 | 211 | 24 | 448 | 1,807 | 0 | 1 | 1 | 0 |
| 4:15 PM | 0 | 17 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 5 | 182 | 2 | 0 | 4 | 182 | 24 | 421 | 1,825 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 24 | 0 | 6 | 0 | 0 | 0 | 2 | 0 | 6 | 188 | 1 | 0 | 2 | 199 | 26 | 454 | 1,851 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 24 | 0 | 4 | 0 | 1 | 0 | 7 | 0 | 1 | 210 | 1 | 0 | 6 | 204 | 26 | 484 | 1,799 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 25 | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 4 | 182 | 3 | 0 | 1 | 223 | 23 | 466 | 1,687 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 26 | 0 | 6 | 0 | 1 | 0 | 5 | 0 | 4 | 188 | 0 | 0 | 6 | 179 | 32 | 447 | 1,642 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 19 | 1 | 4 | 0 | 1 | 0 | 7 | 0 | 2 | 169 | 1 | 0 | 2 | 177 | 19 | 402 | 1,559 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 26 | 0 | 8 | 0 | 1 | 0 | 4 | 0 | 3 | 143 | 2 | 0 | 5 | 162 | 18 | 372 | 1,483 | 0 | 0 | 0 | 0 |
| 6:00 PM | 0 | 19 | 0 | 4 | 0 | 0 | 0 | 2 | 0 | 6 | 179 | 0 | 0 | 1 | 180 | 30 | 421 | 1,373 | 0 | 0 | 0 | 0 |
| 6:15 PM | 0 | 11 | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 2 | 171 | 0 | 0 | 5 | 146 | 24 | 364 | 1,227 | 0 | 0 | 0 | 0 |
| 6:30 PM | 0 | 21 | 1 | 1 | 0 | 2 | 0 | 3 | 0 | 3 | 139 | 0 | 0 | 4 | 126 | 26 | 326 | 1,100 | 0 | 0 | 0 | 0 |
| 6:45 PM | 0 | 13 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 1 | 121 | 1 | 0 | 2 | 104 | 16 | 262 | 1,002 | 0 | 0 | 0 | 0 |
| 7:00 PM | 0 | 17 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 5 | 130 | 0 | 0 | 2 | 101 | 15 | 275 | 968 | 0 | 0 | 0 | 0 |
| 7:15 PM | 0 | 9 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 114 | 0 | 0 | 2 | 93 | 15 | 237 | | 0 | 0 | 0 | 0 |
| 7:30 PM | 0 | 6 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 113 | 0 | 0 | 0 | 88 | 15 | 228 | | 0 | 0 | 0 | 0 |
| 7:45 PM | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 130 | 0 | 0 | 2 | 77 | 11 | 228 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 278 | 3 | 52 | 0 | 7 | 2 | 46 | 0 | 53 | 2,542 | 12 | 0 | 44 | 2,452 | 344 | 5,835 | | 0 | 1 | 1 | 0 |
| Peak Hour | 0 | 99 | 0 | 18 | 0 | 2 | 0 | 17 | 0 | 15 | 768 | 5 | 0 | 15 | 805 | 107 | 1,851 | | 0 | 0 | 0 | 0 |

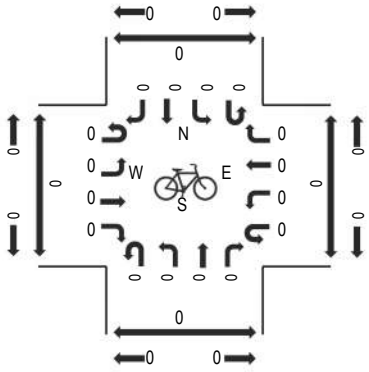
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 3 SE WASHINGTON BLVD & CANDLESTICK CT PM
**Date:** Saturday, December 16, 2023
**Peak Hour:** 04:00 PM - 05:00 PM
**Peak 15-Minutes:** 04:45 PM - 05:00 PM

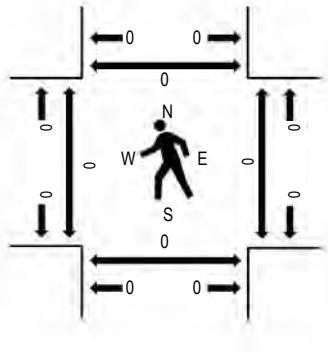
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians




Note: Total study counts contained in parentheses.

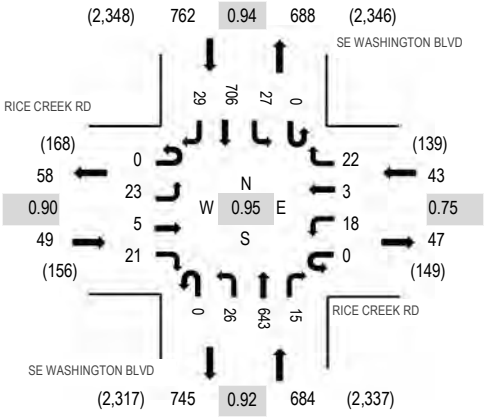
## Traffic Counts - Motorized Vehicles

| Interval Start Time | CANDLESTICK CT Eastbound | | | | CANDLESTICK CT Westbound | | | | SE WASHINGTON BLVD Northbound | | | | SE WASHINGTON BLVD Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 166 | 0 | 0 | 0 | 186 | 29 | 406 | 1,617 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 15 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 5 | 173 | 0 | 0 | 0 | 165 | 19 | 381 | 1,617 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 28 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 169 | 0 | 0 | 0 | 187 | 16 | 404 | 1,612 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 21 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 189 | 0 | 0 | 0 | 194 | 18 | 426 | 1,573 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 15 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 176 | 0 | 0 | 0 | 193 | 20 | 406 | 1,467 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 170 | 0 | 0 | 0 | 171 | 16 | 376 | 1,440 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 16 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 158 | 0 | 0 | 0 | 174 | 15 | 365 | 1,378 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 141 | 0 | 0 | 0 | 158 | 9 | 320 | 1,293 | 0 | 0 | 0 | 0 |
| 6:00 PM | 0 | 15 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 3 | 167 | 0 | 0 | 0 | 172 | 18 | 379 | 1,205 | 0 | 0 | 0 | 0 |
| 6:15 PM | 0 | 17 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 4 | 148 | 0 | 0 | 0 | 132 | 10 | 314 | 1,060 | 0 | 0 | 0 | 0 |
| 6:30 PM | 0 | 8 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 134 | 0 | 0 | 0 | 126 | 9 | 280 | 954 | 0 | 0 | 0 | 0 |
| 6:45 PM | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 112 | 0 | 0 | 0 | 94 | 15 | 232 | 882 | 0 | 0 | 0 | 0 |
| 7:00 PM | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 116 | 0 | 0 | 0 | 98 | 6 | 234 | 860 | 0 | 0 | 0 | 0 |
| 7:15 PM | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 104 | 0 | 0 | 0 | 86 | 8 | 208 | | 0 | 0 | 0 | 0 |
| 7:30 PM | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 108 | 0 | 0 | 0 | 86 | 6 | 208 | | 0 | 0 | 0 | 0 |
| 7:45 PM | 0 | 10 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 120 | 0 | 0 | 0 | 72 | 7 | 210 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 239 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 22 | 2,351 | 0 | 0 | 0 | 2,294 | 221 | 5,149 | | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 89 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 9 | 697 | 0 | 0 | 0 | 732 | 82 | 1,617 | | 0 | 0 | 0 | 0 |

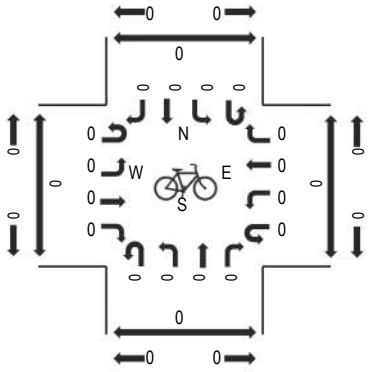
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

**Location:** 4 SE WASHINGTON BLVD & RICE CREEK RD PM
**Date:** Saturday, December 16, 2023
**Peak Hour:** 04:15 PM - 05:15 PM
**Peak 15-Minutes:** 04:45 PM - 05:00 PM

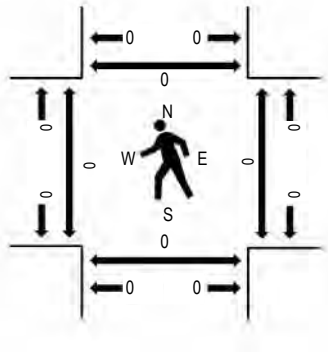
## Peak Hour - Motorized Vehicles




## Peak Hour - Bicycles




## Peak Hour - Pedestrians

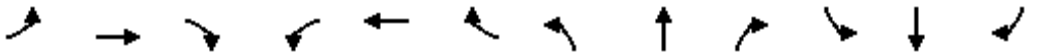



Note: Total study counts contained in parentheses.

## Traffic Counts - Motorized Vehicles

| Interval Start Time | RICE CREEK RD Eastbound | | | | RICE CREEK RD Westbound | | | | SE WASHINGTON BLVD Northbound | | | | SE WASHINGTON BLVD Southbound | | | | | Rolling Hour | Pedestrian Crossings | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | Total | | West | East | South | North |
| 4:00 PM | 0 | 6 | 2 | 5 | 0 | 6 | 0 | 9 | 0 | 5 | 149 | 5 | 0 | 6 | 174 | 4 | 371 | 1,530 | 0 | 0 | 0 | 0 |
| 4:15 PM | 0 | 6 | 2 | 7 | 0 | 6 | 1 | 4 | 0 | 10 | 164 | 3 | 0 | 5 | 155 | 12 | 375 | 1,538 | 0 | 0 | 0 | 0 |
| 4:30 PM | 0 | 7 | 1 | 3 | 0 | 4 | 0 | 5 | 0 | 5 | 155 | 4 | 0 | 7 | 182 | 6 | 379 | 1,509 | 0 | 0 | 0 | 0 |
| 4:45 PM | 0 | 7 | 2 | 6 | 0 | 4 | 2 | 4 | 0 | 7 | 174 | 6 | 0 | 9 | 181 | 3 | 405 | 1,493 | 0 | 0 | 0 | 0 |
| 5:00 PM | 0 | 3 | 0 | 5 | 0 | 4 | 0 | 9 | 0 | 4 | 150 | 2 | 0 | 6 | 188 | 8 | 379 | 1,422 | 0 | 0 | 0 | 0 |
| 5:15 PM | 0 | 5 | 1 | 6 | 0 | 5 | 1 | 5 | 0 | 5 | 155 | 2 | 0 | 7 | 150 | 4 | 346 | 1,389 | 0 | 0 | 0 | 0 |
| 5:30 PM | 0 | 5 | 0 | 4 | 0 | 3 | 0 | 5 | 0 | 5 | 157 | 3 | 0 | 10 | 167 | 4 | 363 | 1,363 | 0 | 0 | 0 | 0 |
| 5:45 PM | 0 | 7 | 1 | 6 | 0 | 5 | 4 | 3 | 0 | 5 | 130 | 3 | 0 | 7 | 154 | 9 | 334 | 1,287 | 0 | 0 | 0 | 0 |
| 6:00 PM | 0 | 6 | 0 | 2 | 0 | 1 | 0 | 2 | 0 | 4 | 155 | 10 | 0 | 7 | 152 | 7 | 346 | 1,174 | 0 | 0 | 0 | 0 |
| 6:15 PM | 0 | 5 | 0 | 5 | 0 | 2 | 1 | 5 | 0 | 4 | 148 | 2 | 0 | 3 | 139 | 6 | 320 | 1,062 | 0 | 0 | 0 | 0 |
| 6:30 PM | 0 | 5 | 2 | 1 | 0 | 5 | 2 | 1 | 0 | 7 | 126 | 1 | 0 | 2 | 130 | 5 | 287 | 952 | 0 | 0 | 0 | 0 |
| 6:45 PM | 0 | 4 | 1 | 5 | 0 | 2 | 1 | 2 | 0 | 2 | 108 | 0 | 0 | 2 | 92 | 2 | 221 | 863 | 0 | 0 | 0 | 0 |
| 7:00 PM | 0 | 4 | 0 | 3 | 0 | 3 | 0 | 3 | 0 | 6 | 111 | 4 | 0 | 2 | 97 | 1 | 234 | 854 | 0 | 0 | 0 | 0 |
| 7:15 PM | 0 | 2 | 1 | 4 | 0 | 0 | 1 | 5 | 0 | 6 | 97 | 6 | 0 | 2 | 86 | 0 | 210 | | 0 | 0 | 0 | 0 |
| 7:30 PM | 0 | 2 | 0 | 2 | 0 | 2 | 0 | 5 | 0 | 3 | 97 | 3 | 0 | 2 | 82 | 0 | 198 | | 0 | 0 | 0 | 0 |
| 7:45 PM | 0 | 2 | 1 | 2 | 0 | 0 | 2 | 5 | 0 | 4 | 122 | 3 | 0 | 1 | 70 | 0 | 212 | | 0 | 0 | 0 | 0 |
| Count Total | 0 | 76 | 14 | 66 | 0 | 52 | 15 | 72 | 0 | 82 | 2,198 | 57 | 0 | 78 | 2,199 | 71 | 4,980 | | 0 | 0 | 0 | 0 |
| Peak Hour | 0 | 23 | 5 | 21 | 0 | 18 | 3 | 22 | 0 | 26 | 643 | 15 | 0 | 27 | 706 | 29 | 1,538 | | 0 | 0 | 0 | 0 |

# SYNCHRO ANALYSIS



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 138 | 109 | 127 | 117 | 121 | 37 | 156 | 513 | 71 | 29 | 491 | 98 |
| Future Volume (veh/h) | 138 | 109 | 127 | 117 | 121 | 37 | 156 | 513 | 71 | 29 | 491 | 98 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 150 | 118 | 0 | 127 | 132 | 40 | 170 | 558 | 0 | 32 | 534 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 393 | 307 | | 432 | 205 | 62 | 425 | 1098 | | 365 | 861 | |
| Arrive On Green | 0.10 | 0.16 | 0.00 | 0.08 | 0.15 | 0.15 | 0.10 | 0.31 | 0.00 | 0.04 | 0.25 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1378 | 417 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 150 | 118 | 0 | 127 | 0 | 172 | 170 | 558 | 0 | 32 | 534 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1795 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 3.4 | 2.8 | 0.0 | 2.9 | 0.0 | 4.5 | 3.4 | 6.5 | 0.0 | 0.7 | 6.8 | 0.0 |
| Cycle Q Clear(g_c), s | 3.4 | 2.8 | 0.0 | 2.9 | 0.0 | 4.5 | 3.4 | 6.5 | 0.0 | 0.7 | 6.8 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.23 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 393 | 307 | | 432 | 0 | 267 | 425 | 1098 | | 365 | 861 | |
| V/C Ratio(X) | 0.38 | 0.38 | | 0.29 | 0.00 | 0.64 | 0.40 | 0.51 | | 0.09 | 0.62 | |
| Avail Cap(c_a), veh/h | 717 | 1427 | | 675 | 0 | 1262 | 885 | 3792 | | 551 | 3020 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 15.6 | 18.6 | 0.0 | 15.8 | 0.0 | 19.9 | 12.0 | 13.9 | 0.0 | 13.2 | 16.7 | 0.0 |
| Incr Delay (d2), s/veh | 0.6 | 0.8 | 0.0 | 0.4 | 0.0 | 2.6 | 0.6 | 0.4 | 0.0 | 0.1 | 0.7 | 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(50%),veh/ln | 1.3 | 1.1 | 0.0 | 1.1 | 0.0 | 1.8 | 1.1 | 2.0 | 0.0 | 0.2 | 2.3 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 16.2 | 19.4 | 0.0 | 16.2 | 0.0 | 22.5 | 12.6 | 14.3 | 0.0 | 13.3 | 17.4 | 0.0 |
| LnGrp LOS | B | B | | B | A | C | B | B | | B | B | |
| Approach Vol, veh/h | | 268 | | | 299 | | | 728 | | | 566 | |
| Approach Delay, s/veh | | 17.6 | | | 19.8 | | | 13.9 | | | 17.2 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.8 | 20.6 | 9.2 | 13.2 | 10.2 | 17.3 | 10.0 | 12.4 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 7.0 | 54.0 | 11.0 | 38.0 | 18.0 | 43.0 | 14.0 | 35.0 |
| Max Q Clear Time (g_c+I1), s | 2.7 | 8.5 | 4.9 | 4.8 | 5.4 | 8.8 | 5.4 | 6.5 |
| Green Ext Time (p_c), s | 0.0 | 3.8 | 0.1 | 0.6 | 0.3 | 3.5 | 0.2 | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 16.4 |
| HCM 6th LOS | B |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 91 | 0 | 16 | 1 | 1 | 20 | 10 | 594 | 0 | 15 | 573 | 84 |
| Future Volume (veh/h) | 91 | 0 | 16 | 1 | 1 | 20 | 10 | 594 | 0 | 15 | 573 | 84 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 100 | 0 | 18 | 1 | 1 | 22 | 11 | 653 | 0 | 16 | 630 | 92 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 386 | 0 | 208 | 258 | 3 | 72 | 348 | 1136 | 0 | 357 | 1157 | 660 |
| Arrive On Green | 0.09 | 0.00 | 0.13 | 0.00 | 0.05 | 0.05 | 0.01 | 0.32 | 0.00 | 0.02 | 0.33 | 0.33 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | 1781 | 69 | 1526 | 1781 | 3589 | 0 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 100 | 0 | 18 | 1 | 0 | 23 | 11 | 653 | 0 | 16 | 630 | 92 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | 1781 | 0 | 1596 | 1781 | 1749 | 0 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 2.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.5 | 0.2 | 5.9 | 0.0 | 0.2 | 5.6 | 1.4 |
| Cycle Q Clear(g_c), s | 2.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.5 | 0.2 | 5.9 | 0.0 | 0.2 | 5.6 | 1.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.96 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 386 | 0 | 208 | 258 | 0 | 75 | 348 | 1136 | 0 | 357 | 1157 | 660 |
| V/C Ratio(X) | 0.26 | 0.00 | 0.09 | 0.00 | 0.00 | 0.31 | 0.03 | 0.57 | 0.00 | 0.04 | 0.54 | 0.14 |
| Avail Cap(c_a), veh/h | 699 | 0 | 1449 | 579 | 0 | 1333 | 648 | 4201 | 0 | 646 | 4201 | 2040 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.1 | 0.0 | 14.6 | 17.3 | 0.0 | 17.6 | 8.8 | 10.7 | 0.0 | 8.8 | 10.5 | 6.9 |
| Incr Delay (d2), s/veh | 0.4 | 0.0 | 0.2 | 0.0 | 0.0 | 2.3 | 0.0 | 0.5 | 0.0 | 0.1 | 0.4 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.7 | 0.0 | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 1.5 | 0.0 | 0.1 | 1.4 | 0.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 15.4 | 0.0 | 14.8 | 17.3 | 0.0 | 19.9 | 8.8 | 11.2 | 0.0 | 8.8 | 10.9 | 7.0 |
| LnGrp LOS | B | A | B | B | A | B | A | B | A | A | B | A |
| Approach Vol, veh/h | | 118 | | | 24 | | | 664 | | | 738 | |
| Approach Delay, s/veh | | 15.3 | | | 19.8 | | | 11.2 | | | 10.3 | |
| Approach LOS | | B | | | B | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.8 | 17.4 | 5.1 | 10.0 | 5.6 | 17.7 | 8.3 | 6.8 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 7.0 | 46.0 | 7.0 | 35.0 | 7.0 | 46.0 | 10.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.2 | 7.9 | 2.0 | 2.4 | 2.2 | 7.6 | 4.0 | 2.5 |
| Green Ext Time (p_c), s | 0.0 | 4.5 | 0.0 | 0.1 | 0.0 | 4.6 | 0.1 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.2 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 650 | 0 | 0 | 560 | 23 |
| Future Vol, veh/h | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 650 | 0 | 0 | 560 | 23 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 677 | 0 | 0 | 583 | 24 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 936 | 1274 | 304 | 971 | 1286 | 339 | 607 | 0 | 0 | 677 | 0 | 0 |
| Stage 1 | 595 | 595 | - | 679 | 679 | - | - | - | - | - | - | - |
| Stage 2 | 341 | 679 | - | 292 | 607 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 220 | 166 | 692 | 207 | 163 | 657 | 967 | - | - | 911 | - | - |
| Stage 1 | 458 | 491 | - | 408 | 449 | - | - | - | - | - | - | - |
| Stage 2 | 647 | 449 | - | 692 | 485 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 220 | 166 | 692 | 207 | 163 | 657 | 967 | - | - | 911 | - | - |
| Mov Cap-2 Maneuver | 220 | 166 | - | 207 | 163 | - | - | - | - | - | - | - |
| Stage 1 | 458 | 491 | - | 408 | 449 | - | - | - | - | - | - | - |
| Stage 2 | 646 | 449 | - | 692 | 485 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 21.6 | 0 | 0 | 0 |
| HCM LOS | C | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 967 | - | - | 220 | - | 911 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | - | 0.014 | - | - | - | - |
| HCM Control Delay (s) | 8.7 | - | - | 21.6 | 0 | 0 | - | - |
| HCM Lane LOS | A | - | - | C | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - | 0 | - | - |

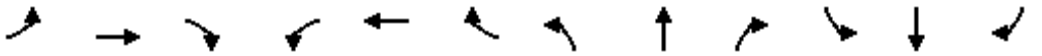
| Intersection | |
|---|---|
| Int Delay, s/veh | 2.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 2 | 4 | 26 | 20 | 11 | 22 | 71 | 616 | 33 | 12 | 512 | 8 |
| Future Vol, veh/h | 2 | 4 | 26 | 20 | 11 | 22 | 71 | 616 | 33 | 12 | 512 | 8 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 2 | 4 | 28 | 21 | 12 | 23 | 76 | 655 | 35 | 13 | 545 | 9 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1062 | 1418 | 277 | 1126 | 1405 | 345 | 554 | 0 | 0 | 690 | 0 | 0 |
| Stage 1 | 576 | 576 | - | 825 | 825 | - | - | - | - | - | - | - |
| Stage 2 | 486 | 842 | - | 301 | 580 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 178 | 136 | 720 | 160 | 138 | 651 | 1012 | - | - | 900 | - | - |
| Stage 1 | 470 | 500 | - | 333 | 385 | - | - | - | - | - | - | - |
| Stage 2 | 531 | 378 | - | 683 | 498 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 149 | 124 | 720 | 140 | 126 | 651 | 1012 | - | - | 900 | - | - |
| Mov Cap-2 Maneuver | 149 | 124 | - | 140 | 126 | - | - | - | - | - | - | - |
| Stage 1 | 435 | 493 | - | 308 | 356 | - | - | - | - | - | - | - |
| Stage 2 | 458 | 350 | - | 642 | 491 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 15.1 | 29.7 | 0.9 | 0.2 |
| HCM LOS | C | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1012 | - | - | 391 | 201 | 900 | - | - |
| HCM Lane V/C Ratio | 0.075 | - | - | 0.087 | 0.281 | 0.014 | - | - |
| HCM Control Delay (s) | 8.8 | - | - | 15.1 | 29.7 | 9.1 | - | - |
| HCM Lane LOS | A | - | - | C | D | A | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0.3 | 1.1 | 0 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 195 | 148 | 213 | 179 | 110 | 32 | 172 | 717 | 166 | 34 | 772 | 153 |
| Future Volume (veh/h) | 195 | 148 | 213 | 179 | 110 | 32 | 172 | 717 | 166 | 34 | 772 | 153 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 203 | 154 | 0 | 186 | 115 | 33 | 179 | 747 | 0 | 35 | 804 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 402 | 250 | | 398 | 173 | 50 | 373 | 1350 | | 339 | 1142 | |
| Arrive On Green | 0.13 | 0.13 | 0.00 | 0.12 | 0.12 | 0.12 | 0.10 | 0.39 | 0.00 | 0.04 | 0.33 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1397 | 401 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 203 | 154 | 0 | 186 | 0 | 148 | 179 | 747 | 0 | 35 | 804 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1798 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 5.9 | 4.8 | 0.0 | 5.4 | 0.0 | 4.8 | 3.9 | 10.3 | 0.0 | 0.8 | 12.4 | 0.0 |
| Cycle Q Clear(g_c), s | 5.9 | 4.8 | 0.0 | 5.4 | 0.0 | 4.8 | 3.9 | 10.3 | 0.0 | 0.8 | 12.4 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.22 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 402 | 250 | | 398 | 0 | 222 | 373 | 1350 | | 339 | 1142 | |
| V/C Ratio(X) | 0.50 | 0.62 | | 0.47 | 0.00 | 0.67 | 0.48 | 0.55 | | 0.10 | 0.70 | |
| Avail Cap(c_a), veh/h | 578 | 1064 | | 533 | 0 | 964 | 665 | 3296 | | 418 | 2671 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 19.6 | 25.2 | 0.0 | 19.9 | 0.0 | 25.8 | 12.9 | 14.8 | 0.0 | 13.1 | 18.1 | 0.0 |
| Incr Delay (d2), s/veh | 1.0 | 2.5 | 0.0 | 0.9 | 0.0 | 3.4 | 1.0 | 0.4 | 0.0 | 0.1 | 0.8 | 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(50%),veh/ln | 2.3 | 2.1 | 0.0 | 2.1 | 0.0 | 2.1 | 1.3 | 3.3 | 0.0 | 0.3 | 4.3 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 20.6 | 27.6 | 0.0 | 20.7 | 0.0 | 29.2 | 13.8 | 15.1 | 0.0 | 13.2 | 18.9 | 0.0 |
| LnGrp LOS | C | C | | C | A | C | B | B | | B | B | |
| Approach Vol, veh/h | | 357 | | | 334 | | | 926 | | | 839 | |
| Approach Delay, s/veh | | 23.6 | | | 24.5 | | | 14.9 | | | 18.7 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.3 | 28.8 | 12.3 | 13.2 | 10.9 | 25.1 | 12.9 | 12.6 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 58.0 | 12.0 | 35.0 | 16.0 | 47.0 | 14.0 | 33.0 |
| Max Q Clear Time (g_c+I1), s | 2.8 | 12.3 | 7.4 | 6.8 | 5.9 | 14.4 | 7.9 | 6.8 |
| Green Ext Time (p_c), s | 0.0 | 5.4 | 0.2 | 0.8 | 0.3 | 5.7 | 0.3 | 0.8 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 18.8 |
| HCM 6th LOS | B |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 110 | 0 | 13 | 1 | 0 | 14 | 20 | 862 | 3 | 15 | 902 | 124 |
| Future Volume (veh/h) | 110 | 0 | 13 | 1 | 0 | 14 | 20 | 862 | 3 | 15 | 902 | 124 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 117 | 0 | 14 | 1 | 0 | 15 | 21 | 917 | 3 | 16 | 960 | 132 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 337 | 0 | 184 | 205 | 0 | 55 | 310 | 1563 | 5 | 336 | 1510 | 816 |
| Arrive On Green | 0.08 | 0.00 | 0.12 | 0.00 | 0.00 | 0.03 | 0.03 | 0.44 | 0.44 | 0.02 | 0.43 | 0.43 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 3576 | 12 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 117 | 0 | 14 | 1 | 0 | 15 | 21 | 448 | 472 | 16 | 960 | 132 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 1749 | 1839 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 2.9 | 0.0 | 0.4 | 0.0 | 0.0 | 0.4 | 0.3 | 9.1 | 9.1 | 0.2 | 10.1 | 2.1 |
| Cycle Q Clear(g_c), s | 2.9 | 0.0 | 0.4 | 0.0 | 0.0 | 0.4 | 0.3 | 9.1 | 9.1 | 0.2 | 10.1 | 2.1 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.01 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 337 | 0 | 184 | 205 | 0 | 55 | 310 | 764 | 804 | 336 | 1510 | 816 |
| V/C Ratio(X) | 0.35 | 0.00 | 0.08 | 0.00 | 0.00 | 0.27 | 0.07 | 0.59 | 0.59 | 0.05 | 0.64 | 0.16 |
| Avail Cap(c_a), veh/h | 491 | 0 | 1179 | 391 | 0 | 1078 | 454 | 2230 | 2345 | 490 | 4460 | 2153 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 18.8 | 0.0 | 18.5 | 21.9 | 0.0 | 22.1 | 8.1 | 10.0 | 10.0 | 8.0 | 10.5 | 6.0 |
| Incr Delay (d2), s/veh | 0.6 | 0.0 | 0.2 | 0.0 | 0.0 | 2.7 | 0.1 | 0.7 | 0.7 | 0.1 | 0.4 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 0.0 | 0.1 | 0.0 | 0.0 | 0.2 | 0.1 | 2.4 | 2.5 | 0.1 | 2.6 | 0.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 19.4 | 0.0 | 18.7 | 21.9 | 0.0 | 24.8 | 8.2 | 10.7 | 10.7 | 8.1 | 10.9 | 6.1 |
| LnGrp LOS | B | A | B | C | A | C | A | B | B | A | B | A |
| Approach Vol, veh/h | | 131 | | | 16 | | | 941 | | | 1108 | |
| Approach Delay, s/veh | | 19.4 | | | 24.6 | | | 10.7 | | | 10.3 | |
| Approach LOS | | B | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.9 | 25.6 | 5.1 | 10.5 | 6.2 | 25.3 | 8.9 | 6.6 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 60.0 | 5.0 | 35.0 | 5.0 | 60.0 | 8.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.2 | 11.1 | 2.0 | 2.4 | 2.3 | 12.1 | 4.9 | 2.4 |
| Green Ext Time (p_c), s | 0.0 | 6.2 | 0.0 | 0.0 | 0.0 | 8.2 | 0.1 | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.1 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 55 | 0 | 10 | 0 | 0 | 0 | 6 | 783 | 0 | 0 | 861 | 69 |
| Future Vol, veh/h | 55 | 0 | 10 | 0 | 0 | 0 | 6 | 783 | 0 | 0 | 861 | 69 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 57 | 0 | 10 | 0 | 0 | 0 | 6 | 816 | 0 | 0 | 897 | 72 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1353 | 1761 | 485 | 1277 | 1797 | 408 | 969 | 0 | 0 | 816 | 0 | 0 |
| Stage 1 | 933 | 933 | - | 828 | 828 | - | - | - | - | - | - | - |
| Stage 2 | 420 | 828 | - | 449 | 969 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 108 | 84 | 528 | 123 | 79 | 593 | 707 | - | - | 807 | - | - |
| Stage 1 | 286 | 343 | - | 332 | 384 | - | - | - | - | - | - | - |
| Stage 2 | 581 | 384 | - | 559 | 330 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 107 | 83 | 528 | 120 | 78 | 593 | 707 | - | - | 807 | - | - |
| Mov Cap-2 Maneuver | 107 | 83 | - | 120 | 78 | - | - | - | - | - | - | - |
| Stage 1 | 284 | 343 | - | 329 | 381 | - | - | - | - | - | - | - |
| Stage 2 | 576 | 381 | - | 548 | 330 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 66.3 | 0 | 0.1 | 0 |
| HCM LOS | F | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 707 | - | - | 122 | - | 807 | - | - |
| HCM Lane V/C Ratio | 0.009 | - | - | 0.555 | - | - | - | - |
| HCM Control Delay (s) | 10.1 | - | - | 66.3 | 0 | 0 | - | - |
| HCM Lane LOS | B | - | - | F | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 2.7 | - | 0 | - | - |

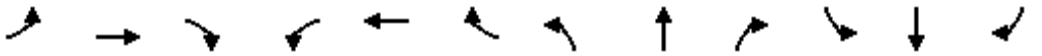
| Intersection | |
|---|---|
| Int Delay, s/veh | 4.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 12 | 6 | 62 | 28 | 11 | 20 | 38 | 748 | 26 | 30 | 869 | 26 |
| Future Vol, veh/h | 12 | 6 | 62 | 28 | 11 | 20 | 38 | 748 | 26 | 30 | 869 | 26 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 13 | 6 | 65 | 29 | 11 | 21 | 40 | 779 | 27 | 31 | 905 | 27 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1456 | 1867 | 466 | 1391 | 1867 | 403 | 932 | 0 | 0 | 806 | 0 | 0 |
| Stage 1 | 981 | 981 | - | 873 | 873 | - | - | - | - | - | - | - |
| Stage 2 | 475 | 886 | - | 518 | 994 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 91 | 72 | 543 | 102 | 72 | 597 | 730 | - | - | 814 | - | - |
| Stage 1 | 268 | 326 | - | 311 | 366 | - | - | - | - | - | - | - |
| Stage 2 | 539 | 361 | - | 509 | 321 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 71 | 65 | 543 | 78 | 65 | 597 | 730 | - | - | 814 | - | - |
| Mov Cap-2 Maneuver | 71 | 65 | - | 78 | 65 | - | - | - | - | - | - | - |
| Stage 1 | 253 | 314 | - | 294 | 346 | - | - | - | - | - | - | - |
| Stage 2 | 475 | 341 | - | 423 | 309 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 32.4 | 79.2 | 0.5 | 0.3 |
| HCM LOS | D | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 730 | - | - | 213 | 105 | 814 | - | - |
| HCM Lane V/C Ratio | 0.054 | - | - | 0.391 | 0.585 | 0.038 | - | - |
| HCM Control Delay (s) | 10.2 | - | - | 32.4 | 79.2 | 9.6 | - | - |
| HCM Lane LOS | B | - | - | D | F | A | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 1.7 | 2.8 | 0.1 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 171 | 121 | 172 | 190 | 108 | 46 | 172 | 739 | 167 | 43 | 755 | 138 |
| Future Volume (veh/h) | 171 | 121 | 172 | 190 | 108 | 46 | 172 | 739 | 167 | 43 | 755 | 138 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 176 | 125 | 0 | 196 | 111 | 47 | 177 | 762 | 0 | 44 | 778 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 382 | 227 | | 418 | 166 | 70 | 381 | 1309 | | 339 | 1121 | |
| Arrive On Green | 0.11 | 0.12 | 0.00 | 0.13 | 0.13 | 0.13 | 0.10 | 0.37 | 0.00 | 0.04 | 0.32 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1247 | 528 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 176 | 125 | 0 | 196 | 0 | 158 | 177 | 762 | 0 | 44 | 778 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1775 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 5.0 | 3.7 | 0.0 | 5.5 | 0.0 | 5.0 | 3.8 | 10.4 | 0.0 | 1.0 | 11.6 | 0.0 |
| Cycle Q Clear(g_c), s | 5.0 | 3.7 | 0.0 | 5.5 | 0.0 | 5.0 | 3.8 | 10.4 | 0.0 | 1.0 | 11.6 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.30 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 382 | 227 | | 418 | 0 | 236 | 381 | 1309 | | 339 | 1121 | |
| V/C Ratio(X) | 0.46 | 0.55 | | 0.47 | 0.00 | 0.67 | 0.46 | 0.58 | | 0.13 | 0.69 | |
| Avail Cap(c_a), veh/h | 509 | 1100 | | 554 | 0 | 1074 | 687 | 3407 | | 411 | 2761 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 19.5 | 24.6 | 0.0 | 19.1 | 0.0 | 24.6 | 12.6 | 14.9 | 0.0 | 12.8 | 17.7 | 0.0 |
| Incr Delay (d2), s/veh | 0.9 | 2.1 | 0.0 | 0.8 | 0.0 | 3.3 | 0.9 | 0.4 | 0.0 | 0.2 | 0.8 | 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(50%),veh/ln | 1.9 | 1.7 | 0.0 | 2.1 | 0.0 | 2.2 | 1.3 | 3.4 | 0.0 | 0.3 | 4.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 20.4 | 26.7 | 0.0 | 20.0 | 0.0 | 27.8 | 13.5 | 15.3 | 0.0 | 13.0 | 18.5 | 0.0 |
| LnGrp LOS | C | C | | B | A | C | B | B | | B | B | |
| Approach Vol, veh/h | | 301 | | | 354 | | | 939 | | | 822 | |
| Approach Delay, s/veh | | 23.0 | | | 23.5 | | | 15.0 | | | 18.2 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.6 | 27.3 | 12.4 | 12.2 | 10.8 | 24.1 | 11.8 | 12.9 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 58.0 | 12.0 | 35.0 | 16.0 | 47.0 | 11.0 | 36.0 |
| Max Q Clear Time (g_c+I1), s | 3.0 | 12.4 | 7.5 | 5.7 | 5.8 | 13.6 | 7.0 | 7.0 |
| Green Ext Time (p_c), s | 0.0 | 5.5 | 0.2 | 0.6 | 0.3 | 5.5 | 0.2 | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 18.3 |
| HCM 6th LOS | B |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 124 | 1 | 25 | 1 | 0 | 21 | 10 | 835 | 1 | 21 | 819 | 122 |
| Future Volume (veh/h) | 124 | 1 | 25 | 1 | 0 | 21 | 10 | 835 | 1 | 21 | 819 | 122 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 132 | 1 | 27 | 1 | 0 | 22 | 11 | 888 | 1 | 22 | 871 | 130 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 376 | 8 | 219 | 236 | 0 | 83 | 297 | 1387 | 2 | 323 | 1397 | 778 |
| Arrive On Green | 0.09 | 0.14 | 0.14 | 0.00 | 0.00 | 0.05 | 0.01 | 0.39 | 0.39 | 0.03 | 0.40 | 0.40 |
| Sat Flow, veh/h | 1781 | 57 | 1537 | 1781 | 0 | 1585 | 1781 | 3585 | 4 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 132 | 0 | 28 | 1 | 0 | 22 | 11 | 433 | 456 | 22 | 871 | 130 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1594 | 1781 | 0 | 1585 | 1781 | 1749 | 1840 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 3.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.6 | 0.2 | 9.1 | 9.1 | 0.3 | 9.0 | 2.1 |
| Cycle Q Clear(g_c), s | 3.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.6 | 0.2 | 9.1 | 9.1 | 0.3 | 9.0 | 2.1 |
| Prop In Lane | 1.00 | | 0.96 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 376 | 0 | 227 | 236 | 0 | 83 | 297 | 677 | 712 | 323 | 1397 | 778 |
| V/C Ratio(X) | 0.35 | 0.00 | 0.12 | 0.00 | 0.00 | 0.27 | 0.04 | 0.64 | 0.64 | 0.07 | 0.62 | 0.17 |
| Avail Cap(c_a), veh/h | 529 | 0 | 1235 | 429 | 0 | 1123 | 469 | 1935 | 2036 | 472 | 3871 | 1899 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 17.0 | 0.0 | 16.9 | 20.2 | 0.0 | 20.6 | 9.0 | 11.3 | 11.3 | 8.8 | 10.8 | 6.4 |
| Incr Delay (d2), s/veh | 0.6 | 0.0 | 0.2 | 0.0 | 0.0 | 1.7 | 0.1 | 1.0 | 1.0 | 0.1 | 0.5 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.2 | 0.0 | 0.2 | 0.0 | 0.0 | 0.2 | 0.0 | 2.6 | 2.7 | 0.1 | 2.4 | 0.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 17.5 | 0.0 | 17.2 | 20.2 | 0.0 | 22.3 | 9.0 | 12.3 | 12.2 | 8.9 | 11.3 | 6.5 |
| LnGrp LOS | B | A | B | C | A | C | A | B | B | A | B | A |
| Approach Vol, veh/h | | 160 | | | 23 | | | 900 | | | 1023 | |
| Approach Delay, s/veh | | 17.5 | | | 22.2 | | | 12.2 | | | 10.6 | |
| Approach LOS | | B | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.2 | 22.5 | 5.1 | 11.4 | 5.6 | 23.0 | 9.1 | 7.4 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 50.0 | 5.0 | 35.0 | 5.0 | 50.0 | 8.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 11.1 | 2.0 | 2.7 | 2.2 | 11.0 | 5.0 | 2.6 |
| Green Ext Time (p_c), s | 0.0 | 5.8 | 0.0 | 0.1 | 0.0 | 7.0 | 0.1 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 12.0 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 92 | 0 | 13 | 0 | 0 | 0 | 5 | 797 | 0 | 0 | 734 | 81 |
| Future Vol, veh/h | 92 | 0 | 13 | 0 | 0 | 0 | 5 | 797 | 0 | 0 | 734 | 81 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 98 | 0 | 14 | 0 | 0 | 0 | 5 | 848 | 0 | 0 | 781 | 86 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1258 | 1682 | 434 | 1249 | 1725 | 424 | 867 | 0 | 0 | 848 | 0 | 0 |
| Stage 1 | 824 | 824 | - | 858 | 858 | - | - | - | - | - | - | - |
| Stage 2 | 434 | 858 | - | 391 | 867 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 128 | 94 | 570 | 129 | 88 | 579 | 772 | - | - | 785 | - | - |
| Stage 1 | 333 | 385 | - | 318 | 372 | - | - | - | - | - | - | - |
| Stage 2 | 570 | 372 | - | 605 | 368 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 127 | 93 | 570 | 125 | 87 | 579 | 772 | - | - | 785 | - | - |
| Mov Cap-2 Maneuver | 127 | 93 | - | 125 | 87 | - | - | - | - | - | - | - |
| Stage 1 | 331 | 385 | - | 316 | 370 | - | - | - | - | - | - | - |
| Stage 2 | 566 | 370 | - | 590 | 368 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 90 | 0 | 0.1 | 0 |
| HCM LOS | F | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 772 | - | - | 141 | - | 785 | - | - |
| HCM Lane V/C Ratio | 0.007 | - | - | 0.792 | - | - | - | - |
| HCM Control Delay (s) | 9.7 | - | - | 90 | 0 | 0 | - | - |
| HCM Lane LOS | A | - | - | F | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 4.9 | - | 0 | - | - |

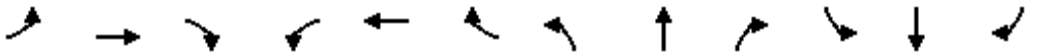
| Intersection | |
|---|---|
| Int Delay, s/veh | 4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 15 | 15 | 20 | 18 | 7 | 26 | 42 | 727 | 23 | 32 | 730 | 27 |
| Future Vol, veh/h | 15 | 15 | 20 | 18 | 7 | 26 | 42 | 727 | 23 | 32 | 730 | 27 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 17 | 17 | 22 | 20 | 8 | 29 | 47 | 808 | 26 | 36 | 811 | 30 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1400 | 1826 | 421 | 1401 | 1828 | 417 | 841 | 0 | 0 | 834 | 0 | 0 |
| Stage 1 | 898 | 898 | - | 915 | 915 | - | - | - | - | - | - | - |
| Stage 2 | 502 | 928 | - | 486 | 913 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 100 | 76 | 581 | 100 | 76 | 585 | 790 | - | - | 795 | - | - |
| Stage 1 | 301 | 356 | - | 294 | 350 | - | - | - | - | - | - | - |
| Stage 2 | 520 | 345 | - | 531 | 350 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 80 | 68 | 581 | 72 | 68 | 585 | 790 | - | - | 795 | - | - |
| Mov Cap-2 Maneuver | 80 | 68 | - | 72 | 68 | - | - | - | - | - | - | - |
| Stage 1 | 283 | 340 | - | 277 | 329 | - | - | - | - | - | - | - |
| Stage 2 | 454 | 325 | - | 464 | 334 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 64.4 | 53.8 | 0.5 | 0.4 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 790 | - | - | 113 | 128 | 795 | - | - |
| HCM Lane V/C Ratio | 0.059 | - | - | 0.492 | 0.443 | 0.045 | - | - |
| HCM Control Delay (s) | 9.8 | - | - | 64.4 | 53.8 | 9.7 | - | - |
| HCM Lane LOS | A | - | - | F | F | A | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 2.2 | 2 | 0.1 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 138 | 89 | 150 | 161 | 73 | 35 | 160 | 676 | 137 | 21 | 718 | 113 |
| Future Volume (veh/h) | 138 | 89 | 150 | 161 | 73 | 35 | 160 | 676 | 137 | 21 | 718 | 113 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 141 | 91 | 0 | 164 | 74 | 36 | 163 | 690 | 0 | 21 | 733 | 0 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 374 | 178 | | 399 | 131 | 64 | 402 | 1348 | | 359 | 1113 | |
| Arrive On Green | 0.10 | 0.10 | 0.00 | 0.11 | 0.11 | 0.11 | 0.09 | 0.39 | 0.00 | 0.03 | 0.32 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1188 | 578 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 141 | 91 | 0 | 164 | 0 | 110 | 163 | 690 | 0 | 21 | 733 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1766 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 3.6 | 2.4 | 0.0 | 4.2 | 0.0 | 3.1 | 3.0 | 7.9 | 0.0 | 0.4 | 9.4 | 0.0 |
| Cycle Q Clear(g_c), s | 3.6 | 2.4 | 0.0 | 4.2 | 0.0 | 3.1 | 3.0 | 7.9 | 0.0 | 0.4 | 9.4 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.33 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 374 | 178 | | 399 | 0 | 195 | 402 | 1348 | | 359 | 1113 | |
| V/C Ratio(X) | 0.38 | 0.51 | | 0.41 | 0.00 | 0.56 | 0.41 | 0.51 | | 0.06 | 0.66 | |
| Avail Cap(c_a), veh/h | 511 | 1291 | | 578 | 0 | 1287 | 750 | 3890 | | 485 | 3219 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 18.6 | 22.4 | 0.0 | 18.2 | 0.0 | 22.0 | 10.9 | 12.3 | 0.0 | 11.6 | 15.3 | 0.0 |
| Incr Delay (d2), s/veh | 0.6 | 2.3 | 0.0 | 0.7 | 0.0 | 2.6 | 0.7 | 0.3 | 0.0 | 0.1 | 0.7 | 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(50%),veh/ln | 1.4 | 1.1 | 0.0 | 1.6 | 0.0 | 1.3 | 0.9 | 2.3 | 0.0 | 0.1 | 3.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 19.2 | 24.7 | 0.0 | 18.8 | 0.0 | 24.6 | 11.5 | 12.6 | 0.0 | 11.6 | 16.0 | 0.0 |
| LnGrp LOS | B | C | | B | A | C | B | B | | B | B | |
| Approach Vol, veh/h | | 232 | | | 274 | | | 853 | | | 754 | |
| Approach Delay, s/veh | | 21.4 | | | 21.1 | | | 12.4 | | | 15.9 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.3 | 25.1 | 10.8 | 10.0 | 9.8 | 21.6 | 10.0 | 10.8 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 58.0 | 11.0 | 36.0 | 15.0 | 48.0 | 9.0 | 38.0 |
| Max Q Clear Time (g_c+I1), s | 2.4 | 9.9 | 6.2 | 4.4 | 5.0 | 11.4 | 5.6 | 5.1 |
| Green Ext Time (p_c), s | 0.0 | 4.9 | 0.2 | 0.4 | 0.3 | 5.2 | 0.1 | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 15.8 |
| HCM 6th LOS | B |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 99 | 0 | 18 | 2 | 0 | 17 | 15 | 768 | 15 | 15 | 805 | 107 |
| Future Volume (veh/h) | 99 | 0 | 18 | 2 | 0 | 17 | 15 | 768 | 15 | 15 | 805 | 107 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 103 | 0 | 19 | 2 | 0 | 18 | 16 | 800 | 16 | 16 | 839 | 111 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 358 | 0 | 194 | 232 | 0 | 69 | 321 | 1375 | 28 | 345 | 1372 | 752 |
| Arrive On Green | 0.08 | 0.00 | 0.12 | 0.00 | 0.00 | 0.04 | 0.02 | 0.39 | 0.39 | 0.02 | 0.39 | 0.39 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 3507 | 70 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 103 | 0 | 19 | 2 | 0 | 18 | 16 | 399 | 417 | 16 | 839 | 111 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 1749 | 1828 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 2.3 | 0.0 | 0.5 | 0.0 | 0.0 | 0.5 | 0.2 | 7.8 | 7.8 | 0.2 | 8.3 | 1.7 |
| Cycle Q Clear(g_c), s | 2.3 | 0.0 | 0.5 | 0.0 | 0.0 | 0.5 | 0.2 | 7.8 | 7.8 | 0.2 | 8.3 | 1.7 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.04 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 358 | 0 | 194 | 232 | 0 | 69 | 321 | 686 | 717 | 345 | 1372 | 752 |
| V/C Ratio(X) | 0.29 | 0.00 | 0.10 | 0.01 | 0.00 | 0.26 | 0.05 | 0.58 | 0.58 | 0.05 | 0.61 | 0.15 |
| Avail Cap(c_a), veh/h | 500 | 0 | 1246 | 433 | 0 | 1172 | 491 | 2062 | 2155 | 515 | 4123 | 1999 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 17.2 | 0.0 | 16.9 | 19.7 | 0.0 | 20.0 | 8.4 | 10.4 | 10.4 | 8.3 | 10.5 | 6.4 |
| Incr Delay (d2), s/veh | 0.4 | 0.0 | 0.2 | 0.0 | 0.0 | 2.0 | 0.1 | 0.8 | 0.8 | 0.1 | 0.4 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.9 | 0.0 | 0.2 | 0.0 | 0.0 | 0.2 | 0.1 | 2.1 | 2.2 | 0.1 | 2.1 | 0.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 17.6 | 0.0 | 17.1 | 19.7 | 0.0 | 22.0 | 8.4 | 11.1 | 11.1 | 8.3 | 11.0 | 6.5 |
| LnGrp LOS | B | A | B | B | A | C | A | B | B | A | B | A |
| Approach Vol, veh/h | | 122 | | | 20 | | | 832 | | | 966 | |
| Approach Delay, s/veh | | 17.5 | | | 21.8 | | | 11.1 | | | 10.4 | |
| Approach LOS | | B | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.9 | 22.0 | 5.1 | 10.3 | 5.9 | 22.0 | 8.5 | 6.9 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 51.0 | 5.0 | 34.0 | 5.0 | 51.0 | 7.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.2 | 9.8 | 2.0 | 2.5 | 2.2 | 10.3 | 4.3 | 2.5 |
| Green Ext Time (p_c), s | 0.0 | 5.2 | 0.0 | 0.1 | 0.0 | 6.7 | 0.1 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.3 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 89 | 0 | 8 | 0 | 0 | 0 | 9 | 697 | 0 | 0 | 732 | 82 |
| Future Vol, veh/h | 89 | 0 | 8 | 0 | 0 | 0 | 9 | 697 | 0 | 0 | 732 | 82 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 94 | 0 | 8 | 0 | 0 | 0 | 9 | 734 | 0 | 0 | 771 | 86 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1199 | 1566 | 429 | 1138 | 1609 | 367 | 857 | 0 | 0 | 734 | 0 | 0 |
| Stage 1 | 814 | 814 | - | 752 | 752 | - | - | - | - | - | - | - |
| Stage 2 | 385 | 752 | - | 386 | 857 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 141 | 110 | 574 | 156 | 104 | 630 | 779 | - | - | 867 | - | - |
| Stage 1 | 338 | 390 | - | 368 | 416 | - | - | - | - | - | - | - |
| Stage 2 | 610 | 416 | - | 609 | 372 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 140 | 109 | 574 | 152 | 103 | 630 | 779 | - | - | 867 | - | - |
| Mov Cap-2 Maneuver | 140 | 109 | - | 152 | 103 | - | - | - | - | - | - | - |
| Stage 1 | 334 | 390 | - | 364 | 411 | - | - | - | - | - | - | - |
| Stage 2 | 603 | 411 | - | 600 | 372 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 70 | 0 | 0.1 | 0 |
| HCM LOS | F | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 779 | - | - | 149 | - | 867 | - | - |
| HCM Lane V/C Ratio | 0.012 | - | - | 0.685 | - | - | - | - |
| HCM Control Delay (s) | 9.7 | - | - | 70 | 0 | 0 | - | - |
| HCM Lane LOS | A | - | - | F | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 3.9 | - | 0 | - | - |

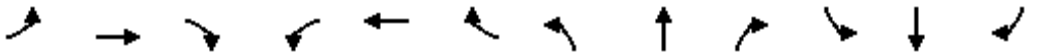
| Intersection | |
|---|---|
| Int Delay, s/veh | 2.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 23 | 5 | 21 | 18 | 3 | 22 | 26 | 643 | 15 | 27 | 706 | 29 |
| Future Vol, veh/h | 23 | 5 | 21 | 18 | 3 | 22 | 26 | 643 | 15 | 27 | 706 | 29 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 24 | 5 | 22 | 19 | 3 | 23 | 27 | 677 | 16 | 28 | 743 | 31 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1209 | 1562 | 387 | 1169 | 1569 | 347 | 774 | 0 | 0 | 693 | 0 | 0 |
| Stage 1 | 815 | 815 | - | 739 | 739 | - | - | - | - | - | - | - |
| Stage 2 | 394 | 747 | - | 430 | 830 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 139 | 111 | 611 | 148 | 110 | 649 | 837 | - | - | 898 | - | - |
| Stage 1 | 338 | 389 | - | 375 | 422 | - | - | - | - | - | - | - |
| Stage 2 | 602 | 418 | - | 574 | 383 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 125 | 104 | 611 | 131 | 103 | 649 | 837 | - | - | 898 | - | - |
| Mov Cap-2 Maneuver | 125 | 104 | - | 131 | 103 | - | - | - | - | - | - | - |
| Stage 1 | 327 | 377 | - | 363 | 408 | - | - | - | - | - | - | - |
| Stage 2 | 557 | 405 | - | 529 | 371 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 32 | 26.2 | 0.4 | 0.3 |
| HCM LOS | D | D | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 837 | - | - | 184 | 215 | 898 | - | - |
| HCM Lane V/C Ratio | 0.033 | - | - | 0.28 | 0.211 | 0.032 | - | - |
| HCM Control Delay (s) | 9.4 | - | - | 32 | 26.2 | 9.1 | - | - |
| HCM Lane LOS | A | - | - | D | D | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 1.1 | 0.8 | 0.1 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 155 | 122 | 142 | 131 | 136 | 41 | 175 | 575 | 80 | 32 | 550 | 110 |
| Future Volume (veh/h) | 155 | 122 | 142 | 131 | 136 | 41 | 175 | 575 | 80 | 32 | 550 | 110 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 168 | 133 | 0 | 142 | 148 | 45 | 190 | 625 | 0 | 35 | 598 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 391 | 326 | | 434 | 216 | 66 | 415 | 1164 | | 348 | 912 | |
| Arrive On Green | 0.11 | 0.17 | 0.00 | 0.09 | 0.16 | 0.16 | 0.11 | 0.33 | 0.00 | 0.04 | 0.26 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1376 | 419 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 168 | 133 | 0 | 142 | 0 | 193 | 190 | 625 | 0 | 35 | 598 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1795 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 4.2 | 3.5 | 0.0 | 3.6 | 0.0 | 5.6 | 4.0 | 8.0 | 0.0 | 0.8 | 8.4 | 0.0 |
| Cycle Q Clear(g_c), s | 4.2 | 3.5 | 0.0 | 3.6 | 0.0 | 5.6 | 4.0 | 8.0 | 0.0 | 0.8 | 8.4 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.23 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 391 | 326 | | 434 | 0 | 282 | 415 | 1164 | | 348 | 912 | |
| V/C Ratio(X) | 0.43 | 0.41 | | 0.33 | 0.00 | 0.68 | 0.46 | 0.54 | | 0.10 | 0.66 | |
| Avail Cap(c_a), veh/h | 715 | 1393 | | 562 | 0 | 1109 | 802 | 3495 | | 443 | 2669 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 16.7 | 20.2 | 0.0 | 16.9 | 0.0 | 21.9 | 12.6 | 14.9 | 0.0 | 14.0 | 18.1 | 0.0 |
| Incr Delay (d2), s/veh | 0.7 | 0.8 | 0.0 | 0.4 | 0.0 | 2.9 | 0.8 | 0.4 | 0.0 | 0.1 | 0.8 | 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(50%),veh/ln | 1.6 | 1.4 | 0.0 | 1.3 | 0.0 | 2.3 | 1.3 | 2.6 | 0.0 | 0.3 | 2.9 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 17.4 | 21.0 | 0.0 | 17.4 | 0.0 | 24.8 | 13.4 | 15.3 | 0.0 | 14.1 | 18.9 | 0.0 |
| LnGrp LOS | B | C | | B | A | C | B | B | | B | B | |
| Approach Vol, veh/h | | 301 | | | 335 | | | 815 | | | 633 | |
| Approach Delay, s/veh | | 19.0 | | | 21.7 | | | 14.8 | | | 18.7 | |
| Approach LOS | | B | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.1 | 23.3 | 10.0 | 14.6 | 11.0 | 19.3 | 11.0 | 13.6 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 55.0 | 9.0 | 41.0 | 18.0 | 42.0 | 16.0 | 34.0 |
| Max Q Clear Time (g_c+I1), s | 2.8 | 10.0 | 5.6 | 5.5 | 6.0 | 10.4 | 6.2 | 7.6 |
| Green Ext Time (p_c), s | 0.0 | 4.3 | 0.1 | 0.7 | 0.4 | 4.0 | 0.3 | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 17.7 |
| HCM 6th LOS | B |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 102 | 0 | 18 | 1 | 1 | 22 | 11 | 665 | 0 | 17 | 642 | 94 |
| Future Volume (veh/h) | 102 | 0 | 18 | 1 | 1 | 22 | 11 | 665 | 0 | 17 | 642 | 94 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 112 | 0 | 20 | 1 | 1 | 24 | 12 | 731 | 0 | 19 | 705 | 103 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 381 | 0 | 216 | 250 | 3 | 76 | 335 | 1218 | 0 | 346 | 1247 | 705 |
| Arrive On Green | 0.09 | 0.00 | 0.14 | 0.00 | 0.05 | 0.05 | 0.02 | 0.35 | 0.00 | 0.02 | 0.36 | 0.36 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | 1781 | 64 | 1531 | 1781 | 3589 | 0 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 112 | 0 | 20 | 1 | 0 | 25 | 12 | 731 | 0 | 19 | 705 | 103 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | 1781 | 0 | 1595 | 1781 | 1749 | 0 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 2.3 | 0.0 | 0.5 | 0.0 | 0.0 | 0.6 | 0.2 | 7.0 | 0.0 | 0.3 | 6.6 | 1.6 |
| Cycle Q Clear(g_c), s | 2.3 | 0.0 | 0.5 | 0.0 | 0.0 | 0.6 | 0.2 | 7.0 | 0.0 | 0.3 | 6.6 | 1.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.96 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 381 | 0 | 216 | 250 | 0 | 79 | 335 | 1218 | 0 | 346 | 1247 | 705 |
| V/C Ratio(X) | 0.29 | 0.00 | 0.09 | 0.00 | 0.00 | 0.31 | 0.04 | 0.60 | 0.00 | 0.05 | 0.57 | 0.15 |
| Avail Cap(c_a), veh/h | 617 | 0 | 1359 | 508 | 0 | 1251 | 569 | 4114 | 0 | 566 | 4114 | 2004 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.7 | 0.0 | 15.4 | 18.4 | 0.0 | 18.7 | 8.8 | 11.0 | 0.0 | 8.8 | 10.6 | 6.7 |
| Incr Delay (d2), s/veh | 0.4 | 0.0 | 0.2 | 0.0 | 0.0 | 2.2 | 0.0 | 0.5 | 0.0 | 0.1 | 0.4 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.9 | 0.0 | 0.2 | 0.0 | 0.0 | 0.3 | 0.0 | 1.8 | 0.0 | 0.1 | 1.7 | 0.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 16.1 | 0.0 | 15.6 | 18.4 | 0.0 | 21.0 | 8.9 | 11.4 | 0.0 | 8.8 | 11.0 | 6.8 |
| LnGrp LOS | B | A | B | B | A | C | A | B | A | A | B | A |
| Approach Vol, veh/h | | 132 | | | 26 | | | 743 | | | 827 | |
| Approach Delay, s/veh | | 16.0 | | | 20.9 | | | 11.4 | | | 10.4 | |
| Approach LOS | | B | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.0 | 19.2 | 5.1 | 10.6 | 5.6 | 19.5 | 8.6 | 7.0 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 6.0 | 48.0 | 6.0 | 35.0 | 6.0 | 48.0 | 9.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 9.0 | 2.0 | 2.5 | 2.2 | 8.6 | 4.3 | 2.6 |
| Green Ext Time (p_c), s | 0.0 | 5.2 | 0.0 | 0.1 | 0.0 | 5.3 | 0.1 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.4 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 728 | 0 | 0 | 627 | 26 |
| Future Vol, veh/h | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 728 | 0 | 0 | 627 | 26 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 758 | 0 | 0 | 653 | 27 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1048 | 1427 | 340 | 1087 | 1440 | 379 | 680 | 0 | 0 | 758 | 0 | 0 |
| Stage 1 | 667 | 667 | - | 760 | 760 | - | - | - | - | - | - | - |
| Stage 2 | 381 | 760 | - | 327 | 680 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 182 | 134 | 656 | 170 | 132 | 619 | 908 | - | - | 849 | - | - |
| Stage 1 | 414 | 455 | - | 364 | 413 | - | - | - | - | - | - | - |
| Stage 2 | 613 | 413 | - | 660 | 449 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 182 | 134 | 656 | 170 | 132 | 619 | 908 | - | - | 849 | - | - |
| Mov Cap-2 Maneuver | 182 | 134 | - | 170 | 132 | - | - | - | - | - | - | - |
| Stage 1 | 414 | 455 | - | 364 | 413 | - | - | - | - | - | - | - |
| Stage 2 | 612 | 413 | - | 660 | 449 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 25.1 | 0 | 0 | 0 |
| HCM LOS | D | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 908 | - | - | 182 | - | 849 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | - | 0.017 | - | - | - | - |
| HCM Control Delay (s) | 9 | - | - | 25.1 | 0 | 0 | - | - |
| HCM Lane LOS | A | - | - | D | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | - | 0 | - | - |

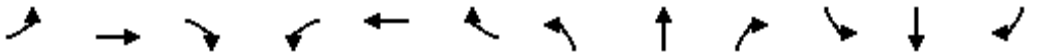
| Intersection | |
|---|---|
| Int Delay, s/veh | 2.6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 2 | 4 | 29 | 22 | 12 | 25 | 80 | 690 | 37 | 13 | 573 | 9 |
| Future Vol, veh/h | 2 | 4 | 29 | 22 | 12 | 25 | 80 | 690 | 37 | 13 | 573 | 9 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 2 | 4 | 31 | 23 | 13 | 27 | 85 | 734 | 39 | 14 | 610 | 10 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1187 | 1586 | 310 | 1259 | 1572 | 387 | 620 | 0 | 0 | 773 | 0 | 0 |
| Stage 1 | 643 | 643 | - | 924 | 924 | - | - | - | - | - | - | - |
| Stage 2 | 544 | 943 | - | 335 | 648 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 144 | 107 | 686 | 127 | 109 | 611 | 956 | - | - | 838 | - | - |
| Stage 1 | 428 | 467 | - | 290 | 346 | - | - | - | - | - | - | - |
| Stage 2 | 491 | 339 | - | 653 | 464 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 114 | 96 | 686 | 108 | 98 | 611 | 956 | - | - | 838 | - | - |
| Mov Cap-2 Maneuver | 114 | 96 | - | 108 | 98 | - | - | - | - | - | - | - |
| Stage 1 | 390 | 459 | - | 264 | 315 | - | - | - | - | - | - | - |
| Stage 2 | 411 | 309 | - | 608 | 456 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 16.7 | 41 | 0.9 | 0.2 |
| HCM LOS | C | E | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 956 | - | - | 345 | 161 | 838 | - | - |
| HCM Lane V/C Ratio | 0.089 | - | - | 0.108 | 0.39 | 0.017 | - | - |
| HCM Control Delay (s) | 9.1 | - | - | 16.7 | 41 | 9.4 | - | - |
| HCM Lane LOS | A | - | - | C | E | A | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 0.4 | 1.7 | 0.1 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 218 | 166 | 239 | 200 | 123 | 36 | 193 | 803 | 186 | 38 | 865 | 171 |
| Future Volume (veh/h) | 218 | 166 | 239 | 200 | 123 | 36 | 193 | 803 | 186 | 38 | 865 | 171 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 227 | 173 | 0 | 208 | 128 | 38 | 201 | 836 | 0 | 40 | 901 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 397 | 261 | | 392 | 180 | 53 | 356 | 1429 | | 318 | 1215 | |
| Arrive On Green | 0.14 | 0.14 | 0.00 | 0.13 | 0.13 | 0.13 | 0.10 | 0.41 | 0.00 | 0.04 | 0.35 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1385 | 411 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 227 | 173 | 0 | 208 | 0 | 166 | 201 | 836 | 0 | 40 | 901 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1796 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 7.5 | 6.1 | 0.0 | 6.9 | 0.0 | 6.2 | 4.8 | 13.0 | 0.0 | 1.0 | 15.8 | 0.0 |
| Cycle Q Clear(g_c), s | 7.5 | 6.1 | 0.0 | 6.9 | 0.0 | 6.2 | 4.8 | 13.0 | 0.0 | 1.0 | 15.8 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.23 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 397 | 261 | | 392 | 0 | 233 | 356 | 1429 | | 318 | 1215 | |
| V/C Ratio(X) | 0.57 | 0.66 | | 0.53 | 0.00 | 0.71 | 0.57 | 0.58 | | 0.13 | 0.74 | |
| Avail Cap(c_a), veh/h | 484 | 909 | | 472 | 0 | 848 | 611 | 2951 | | 377 | 2351 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 21.9 | 28.5 | 0.0 | 22.1 | 0.0 | 29.2 | 14.4 | 16.1 | 0.0 | 14.1 | 20.0 | 0.0 |
| Incr Delay (d2), s/veh | 1.3 | 2.9 | 0.0 | 1.1 | 0.0 | 4.0 | 1.4 | 0.4 | 0.0 | 0.2 | 0.9 | 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(50%),veh/ln | 3.0 | 2.8 | 0.0 | 2.8 | 0.0 | 2.8 | 1.7 | 4.4 | 0.0 | 0.4 | 5.7 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 23.2 | 31.4 | 0.0 | 23.2 | 0.0 | 33.2 | 15.8 | 16.4 | 0.0 | 14.2 | 21.0 | 0.0 |
| LnGrp LOS | C | C | | C | A | C | B | B | | B | C | |
| Approach Vol, veh/h | | 400 | | | 374 | | | 1037 | | | 941 | |
| Approach Delay, s/veh | | 26.7 | | | 27.7 | | | 16.3 | | | 20.7 | |
| Approach LOS | | C | | | C | | | B | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.7 | 33.6 | 13.9 | 14.8 | 12.0 | 29.3 | 14.6 | 14.1 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 59.0 | 12.0 | 34.0 | 17.0 | 47.0 | 13.0 | 33.0 |
| Max Q Clear Time (g_c+I1), s | 3.0 | 15.0 | 8.9 | 8.1 | 6.8 | 17.8 | 9.5 | 8.2 |
| Green Ext Time (p_c), s | 0.0 | 6.2 | 0.2 | 0.9 | 0.4 | 6.5 | 0.2 | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 20.9 |
| HCM 6th LOS | C |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 123 | 0 | 15 | 1 | 0 | 16 | 22 | 965 | 3 | 17 | 1010 | 139 |
| Future Volume (veh/h) | 123 | 0 | 15 | 1 | 0 | 16 | 22 | 965 | 3 | 17 | 1010 | 139 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 131 | 0 | 16 | 1 | 0 | 17 | 23 | 1027 | 3 | 18 | 1074 | 148 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 337 | 0 | 200 | 194 | 0 | 59 | 288 | 1670 | 5 | 315 | 1615 | 875 |
| Arrive On Green | 0.09 | 0.00 | 0.13 | 0.00 | 0.00 | 0.04 | 0.03 | 0.47 | 0.47 | 0.02 | 0.46 | 0.46 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 3577 | 10 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 131 | 0 | 16 | 1 | 0 | 17 | 23 | 502 | 528 | 18 | 1074 | 148 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 1749 | 1839 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 3.5 | 0.0 | 0.5 | 0.0 | 0.0 | 0.5 | 0.3 | 11.2 | 11.2 | 0.3 | 12.4 | 2.4 |
| Cycle Q Clear(g_c), s | 3.5 | 0.0 | 0.5 | 0.0 | 0.0 | 0.5 | 0.3 | 11.2 | 11.2 | 0.3 | 12.4 | 2.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.01 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 337 | 0 | 200 | 194 | 0 | 59 | 288 | 816 | 858 | 315 | 1615 | 875 |
| V/C Ratio(X) | 0.39 | 0.00 | 0.08 | 0.01 | 0.00 | 0.29 | 0.08 | 0.61 | 0.61 | 0.06 | 0.67 | 0.17 |
| Avail Cap(c_a), veh/h | 449 | 0 | 1063 | 361 | 0 | 972 | 411 | 2011 | 2115 | 447 | 4022 | 1966 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.9 | 0.0 | 20.1 | 24.1 | 0.0 | 24.4 | 8.5 | 10.4 | 10.4 | 8.2 | 10.9 | 5.8 |
| Incr Delay (d2), s/veh | 0.7 | 0.0 | 0.2 | 0.0 | 0.0 | 2.6 | 0.1 | 0.8 | 0.7 | 0.1 | 0.5 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.4 | 0.0 | 0.2 | 0.0 | 0.0 | 0.2 | 0.1 | 3.1 | 3.3 | 0.1 | 3.4 | 0.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 20.7 | 0.0 | 20.3 | 24.1 | 0.0 | 27.1 | 8.6 | 11.2 | 11.1 | 8.3 | 11.4 | 5.9 |
| LnGrp LOS | C | A | C | C | A | C | A | B | B | A | B | A |
| Approach Vol, veh/h | | 147 | | | 18 | | | 1053 | | | 1240 | |
| Approach Delay, s/veh | | 20.6 | | | 26.9 | | | 11.1 | | | 10.7 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.1 | 29.4 | 5.1 | 11.6 | 6.4 | 29.1 | 9.7 | 6.9 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 60.0 | 5.0 | 35.0 | 5.0 | 60.0 | 8.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 13.2 | 2.0 | 2.5 | 2.3 | 14.4 | 5.5 | 2.5 |
| Green Ext Time (p_c), s | 0.0 | 7.3 | 0.0 | 0.0 | 0.0 | 9.6 | 0.1 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.6 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 62 | 0 | 11 | 0 | 0 | 0 | 7 | 877 | 0 | 0 | 964 | 77 |
| Future Vol, veh/h | 62 | 0 | 11 | 0 | 0 | 0 | 7 | 877 | 0 | 0 | 964 | 77 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 65 | 0 | 11 | 0 | 0 | 0 | 7 | 914 | 0 | 0 | 1004 | 80 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1515 | 1972 | 542 | 1430 | 2012 | 457 | 1084 | 0 | 0 | 914 | 0 | 0 |
| Stage 1 | 1044 | 1044 | - | 928 | 928 | - | - | - | - | - | - | - |
| Stage 2 | 471 | 928 | - | 502 | 1084 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 82 | 62 | 485 | 95 | 58 | 551 | 639 | - | - | 742 | - | - |
| Stage 1 | 245 | 304 | - | 288 | 345 | - | - | - | - | - | - | - |
| Stage 2 | 542 | 345 | - | 520 | 291 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 81 | 61 | 485 | 92 | 57 | 551 | 639 | - | - | 742 | - | - |
| Mov Cap-2 Maneuver | 81 | 61 | - | 92 | 57 | - | - | - | - | - | - | - |
| Stage 1 | 242 | 304 | - | 285 | 341 | - | - | - | - | - | - | - |
| Stage 2 | 536 | 341 | - | 508 | 291 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 128.9 | 0 | 0.1 | 0 |
| HCM LOS | F | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 639 | - | - | 93 | - | 742 | - | - |
| HCM Lane V/C Ratio | 0.011 | - | - | 0.818 | - | - | - | - |
| HCM Control Delay (s) | 10.7 | - | - | 128.9 | 0 | 0 | - | - |
| HCM Lane LOS | B | - | - | F | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 4.4 | - | 0 | - | - |

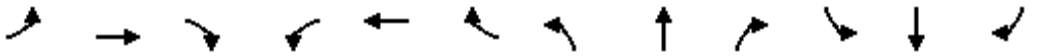
| Intersection | |
|---|---|
| Int Delay, s/veh | 8.6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 13 | 7 | 69 | 31 | 12 | 22 | 43 | 838 | 29 | 34 | 973 | 29 |
| Future Vol, veh/h | 13 | 7 | 69 | 31 | 12 | 22 | 43 | 838 | 29 | 34 | 973 | 29 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 14 | 7 | 72 | 32 | 13 | 23 | 45 | 873 | 30 | 35 | 1014 | 30 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1632 | 2092 | 522 | 1559 | 2092 | 452 | 1044 | 0 | 0 | 903 | 0 | 0 |
| Stage 1 | 1099 | 1099 | - | 978 | 978 | - | - | - | - | - | - | - |
| Stage 2 | 533 | 993 | - | 581 | 1114 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 67 | 52 | 499 | 76 | 52 | 555 | 662 | - | - | 749 | - | - |
| Stage 1 | 227 | 287 | - | 269 | 327 | - | - | - | - | - | - | - |
| Stage 2 | 498 | 322 | - | 467 | 282 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 47 | 46 | 499 | 52 | 46 | 555 | 662 | - | - | 749 | - | - |
| Mov Cap-2 Maneuver | 47 | 46 | - | 52 | 46 | - | - | - | - | - | - | - |
| Stage 1 | 212 | 274 | - | 251 | 305 | - | - | - | - | - | - | - |
| Stage 2 | 427 | 300 | - | 371 | 269 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 56.6 | 187.7 | 0.5 | 0.3 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 662 | - | - | 157 | 72 | 749 | - | - |
| HCM Lane V/C Ratio | 0.068 | - | - | 0.59 | 0.94 | 0.047 | - | - |
| HCM Control Delay (s) | 10.8 | - | - | 56.6 | 187.7 | 10 | - | - |
| HCM Lane LOS | B | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 3.1 | 4.8 | 0.1 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 192 | 136 | 193 | 213 | 121 | 52 | 193 | 828 | 187 | 48 | 846 | 155 |
| Future Volume (veh/h) | 192 | 136 | 193 | 213 | 121 | 52 | 193 | 828 | 187 | 48 | 846 | 155 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 198 | 140 | 0 | 220 | 125 | 54 | 199 | 854 | 0 | 49 | 872 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 378 | 242 | | 418 | 174 | 75 | 364 | 1390 | | 316 | 1193 | |
| Arrive On Green | 0.12 | 0.13 | 0.00 | 0.13 | 0.14 | 0.14 | 0.10 | 0.40 | 0.00 | 0.04 | 0.34 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1239 | 535 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 198 | 140 | 0 | 220 | 0 | 179 | 199 | 854 | 0 | 49 | 872 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1774 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 6.3 | 4.8 | 0.0 | 7.0 | 0.0 | 6.5 | 4.7 | 13.2 | 0.0 | 1.2 | 14.8 | 0.0 |
| Cycle Q Clear(g_c), s | 6.3 | 4.8 | 0.0 | 7.0 | 0.0 | 6.5 | 4.7 | 13.2 | 0.0 | 1.2 | 14.8 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.30 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 378 | 242 | | 418 | 0 | 249 | 364 | 1390 | | 316 | 1193 | |
| V/C Ratio(X) | 0.52 | 0.58 | | 0.53 | 0.00 | 0.72 | 0.55 | 0.61 | | 0.15 | 0.73 | |
| Avail Cap(c_a), veh/h | 474 | 938 | | 495 | 0 | 890 | 605 | 3045 | | 369 | 2477 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 21.6 | 27.8 | 0.0 | 21.2 | 0.0 | 27.9 | 14.0 | 16.3 | 0.0 | 13.9 | 19.6 | 0.0 |
| Incr Delay (d2), s/veh | 1.1 | 2.2 | 0.0 | 1.0 | 0.0 | 3.9 | 1.3 | 0.4 | 0.0 | 0.2 | 0.9 | 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(50%),veh/ln | 2.6 | 2.2 | 0.0 | 2.8 | 0.0 | 2.9 | 1.6 | 4.5 | 0.0 | 0.4 | 5.3 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 22.8 | 30.0 | 0.0 | 22.2 | 0.0 | 31.7 | 15.3 | 16.7 | 0.0 | 14.1 | 20.5 | 0.0 |
| LnGrp LOS | C | C | | C | A | C | B | B | | B | C | |
| Approach Vol, veh/h | | 338 | | | 399 | | | 1053 | | | 921 | |
| Approach Delay, s/veh | | 25.7 | | | 26.5 | | | 16.4 | | | 20.1 | |
| Approach LOS | | C | | | C | | | B | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.0 | 31.9 | 14.1 | 13.8 | 11.8 | 28.1 | 13.3 | 14.5 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 59.0 | 12.0 | 34.0 | 16.0 | 48.0 | 12.0 | 34.0 |
| Max Q Clear Time (g_c+I1), s | 3.2 | 15.2 | 9.0 | 6.8 | 6.7 | 16.8 | 8.3 | 8.5 |
| Green Ext Time (p_c), s | 0.0 | 6.4 | 0.2 | 0.7 | 0.3 | 6.3 | 0.2 | 1.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 20.3 |
| HCM 6th LOS | C |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 139 | 1 | 28 | 1 | 0 | 24 | 11 | 935 | 1 | 24 | 917 | 137 |
| Future Volume (veh/h) | 139 | 1 | 28 | 1 | 0 | 24 | 11 | 935 | 1 | 24 | 917 | 137 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 148 | 1 | 30 | 1 | 0 | 26 | 12 | 995 | 1 | 26 | 976 | 146 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 376 | 8 | 236 | 225 | 0 | 88 | 276 | 1480 | 1 | 305 | 1496 | 835 |
| Arrive On Green | 0.10 | 0.15 | 0.15 | 0.00 | 0.00 | 0.06 | 0.02 | 0.41 | 0.41 | 0.03 | 0.43 | 0.43 |
| Sat Flow, veh/h | 1781 | 51 | 1542 | 1781 | 0 | 1585 | 1781 | 3585 | 4 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 148 | 0 | 31 | 1 | 0 | 26 | 12 | 485 | 511 | 26 | 976 | 146 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1593 | 1781 | 0 | 1585 | 1781 | 1749 | 1840 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 3.6 | 0.0 | 0.8 | 0.0 | 0.0 | 0.8 | 0.2 | 11.2 | 11.2 | 0.4 | 11.0 | 2.4 |
| Cycle Q Clear(g_c), s | 3.6 | 0.0 | 0.8 | 0.0 | 0.0 | 0.8 | 0.2 | 11.2 | 11.2 | 0.4 | 11.0 | 2.4 |
| Prop In Lane | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 376 | 0 | 244 | 225 | 0 | 88 | 276 | 722 | 760 | 305 | 1496 | 835 |
| V/C Ratio(X) | 0.39 | 0.00 | 0.13 | 0.00 | 0.00 | 0.30 | 0.04 | 0.67 | 0.67 | 0.09 | 0.65 | 0.17 |
| Avail Cap(c_a), veh/h | 415 | 0 | 1058 | 400 | 0 | 1020 | 428 | 1829 | 1925 | 430 | 3659 | 1815 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 17.8 | 0.0 | 18.2 | 22.1 | 0.0 | 22.5 | 9.3 | 11.9 | 11.9 | 9.1 | 11.3 | 6.1 |
| Incr Delay (d2), s/veh | 0.7 | 0.0 | 0.2 | 0.0 | 0.0 | 1.8 | 0.1 | 1.1 | 1.0 | 0.1 | 0.5 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.4 | 0.0 | 0.3 | 0.0 | 0.0 | 0.3 | 0.1 | 3.3 | 3.4 | 0.1 | 3.0 | 0.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 18.5 | 0.0 | 18.4 | 22.1 | 0.0 | 24.4 | 9.3 | 13.0 | 12.9 | 9.3 | 11.8 | 6.2 |
| LnGrp LOS | B | A | B | C | A | C | A | B | B | A | B | A |
| Approach Vol, veh/h | | 179 | | | 27 | | | 1008 | | | 1148 | |
| Approach Delay, s/veh | | 18.4 | | | 24.3 | | | 12.9 | | | 11.0 | |
| Approach LOS | | B | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.5 | 25.5 | 5.1 | 12.6 | 5.8 | 26.3 | 9.9 | 7.8 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 52.0 | 5.0 | 33.0 | 5.0 | 52.0 | 6.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.4 | 13.2 | 2.0 | 2.8 | 2.2 | 13.0 | 5.6 | 2.8 |
| Green Ext Time (p_c), s | 0.0 | 6.8 | 0.0 | 0.1 | 0.0 | 8.3 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 12.5 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 13 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 103 | 0 | 15 | 0 | 0 | 0 | 6 | 893 | 0 | 0 | 822 | 91 |
| Future Vol, veh/h | 103 | 0 | 15 | 0 | 0 | 0 | 6 | 893 | 0 | 0 | 822 | 91 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 110 | 0 | 16 | 0 | 0 | 0 | 6 | 950 | 0 | 0 | 874 | 97 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1410 | 1885 | 486 | 1399 | 1933 | 475 | 971 | 0 | 0 | 950 | 0 | 0 |
| Stage 1 | 923 | 923 | - | 962 | 962 | - | - | - | - | - | - | - |
| Stage 2 | 487 | 962 | - | 437 | 971 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 98 | 70 | 527 | 100 | 65 | 536 | 706 | - | - | 719 | - | - |
| Stage 1 | 290 | 347 | - | 275 | 332 | - | - | - | - | - | - | - |
| Stage 2 | 531 | 332 | - | 568 | 329 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 97 | 69 | 527 | 96 | 64 | 536 | 706 | - | - | 719 | - | - |
| Mov Cap-2 Maneuver | ~ 97 | 69 | - | 96 | 64 | - | - | - | - | - | - | - |
| Stage 1 | 288 | 347 | - | 273 | 329 | - | - | - | - | - | - | - |
| Stage 2 | 526 | 329 | - | 551 | 329 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 211.9 | 0 | 0.1 | 0 |
| HCM LOS | F | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 706 | - | - | 108 | - | 719 | - | - |
| HCM Lane V/C Ratio | 0.009 | - | - | 1.162 | - | - | - | - |
| HCM Control Delay (s) | 10.1 | - | - | 211.9 | 0 | 0 | - | - |
| HCM Lane LOS | B | - | - | F | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 8 | - | 0 | - | - |

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

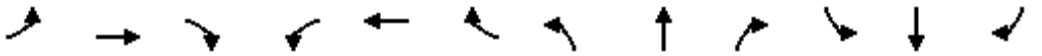
| Intersection | |
|---|---|
| Int Delay, s/veh | 8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 17 | 17 | 22 | 20 | 8 | 29 | 47 | 814 | 26 | 36 | 818 | 30 |
| Future Vol, veh/h | 17 | 17 | 22 | 20 | 8 | 29 | 47 | 814 | 26 | 36 | 818 | 30 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 19 | 19 | 24 | 22 | 9 | 32 | 52 | 904 | 29 | 40 | 909 | 33 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1567 | 2043 | 471 | 1567 | 2045 | 467 | 942 | 0 | 0 | 933 | 0 | 0 |
| Stage 1 | 1006 | 1006 | - | 1023 | 1023 | - | - | - | - | - | - | - |
| Stage 2 | 561 | 1037 | - | 544 | 1022 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 75 | 56 | 539 | 75 | 55 | 542 | 724 | - | - | 729 | - | - |
| Stage 1 | 258 | 317 | - | 252 | 311 | - | - | - | - | - | - | - |
| Stage 2 | 480 | 307 | - | 491 | 312 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 55 | 49 | 539 | 46 | 48 | 542 | 724 | - | - | 729 | - | - |
| Mov Cap-2 Maneuver | 55 | 49 | - | 46 | 48 | - | - | - | - | - | - | - |
| Stage 1 | 239 | 300 | - | 234 | 289 | - | - | - | - | - | - | - |
| Stage 2 | 406 | 285 | - | 415 | 295 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 135.1 | 116.7 | 0.5 | 0.4 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 724 | - | - | 80 | 87 | 729 | - | - |
| HCM Lane V/C Ratio | 0.072 | - | - | 0.778 | 0.728 | 0.055 | - | - |
| HCM Control Delay (s) | 10.4 | - | - | 135.1 | 116.7 | 10.2 | - | - |
| HCM Lane LOS | B | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 3.8 | 3.6 | 0.2 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 155 | 100 | 168 | 180 | 82 | 39 | 179 | 757 | 153 | 24 | 804 | 127 |
| Future Volume (veh/h) | 155 | 100 | 168 | 180 | 82 | 39 | 179 | 757 | 153 | 24 | 804 | 127 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 158 | 102 | 0 | 184 | 84 | 40 | 183 | 772 | 0 | 24 | 820 | 0 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 369 | 180 | | 397 | 135 | 64 | 389 | 1430 | | 342 | 1186 | |
| Arrive On Green | 0.10 | 0.10 | 0.00 | 0.12 | 0.11 | 0.11 | 0.10 | 0.41 | 0.00 | 0.03 | 0.34 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1197 | 570 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 158 | 102 | 0 | 184 | 0 | 124 | 183 | 772 | 0 | 24 | 820 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1768 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 4.5 | 3.0 | 0.0 | 5.2 | 0.0 | 3.9 | 3.6 | 9.7 | 0.0 | 0.5 | 11.7 | 0.0 |
| Cycle Q Clear(g_c), s | 4.5 | 3.0 | 0.0 | 5.2 | 0.0 | 3.9 | 3.6 | 9.7 | 0.0 | 0.5 | 11.7 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.32 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 369 | 180 | | 397 | 0 | 200 | 389 | 1430 | | 342 | 1186 | |
| V/C Ratio(X) | 0.43 | 0.57 | | 0.46 | 0.00 | 0.62 | 0.47 | 0.54 | | 0.07 | 0.69 | |
| Avail Cap(c_a), veh/h | 430 | 1133 | | 521 | 0 | 1162 | 709 | 3571 | | 447 | 2905 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 20.3 | 24.9 | 0.0 | 19.8 | 0.0 | 24.4 | 11.5 | 13.0 | 0.0 | 12.0 | 16.5 | 0.0 |
| Incr Delay (d2), s/veh | 0.8 | 2.8 | 0.0 | 0.8 | 0.0 | 3.1 | 0.9 | 0.3 | 0.0 | 0.1 | 0.7 | 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(50%),veh/ln | 1.8 | 1.4 | 0.0 | 2.0 | 0.0 | 1.7 | 1.1 | 3.0 | 0.0 | 0.2 | 3.9 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 21.1 | 27.7 | 0.0 | 20.7 | 0.0 | 27.6 | 12.4 | 13.3 | 0.0 | 12.1 | 17.2 | 0.0 |
| LnGrp LOS | C | C | | C | A | C | B | B | | B | B | |
| Approach Vol, veh/h | | 260 | | | 308 | | | 955 | | | 844 | |
| Approach Delay, s/veh | | 23.7 | | | 23.5 | | | 13.1 | | | 17.1 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.6 | 28.6 | 12.0 | 10.6 | 10.6 | 24.6 | 11.0 | 11.5 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 59.0 | 11.0 | 35.0 | 16.0 | 48.0 | 8.0 | 38.0 |
| Max Q Clear Time (g_c+I1), s | 2.5 | 11.7 | 7.2 | 5.0 | 5.6 | 13.7 | 6.5 | 5.9 |
| Green Ext Time (p_c), s | 0.0 | 5.6 | 0.2 | 0.5 | 0.3 | 5.9 | 0.1 | 0.7 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 17.0 |
| HCM 6th LOS | B |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 111 | 0 | 20 | 2 | 0 | 19 | 17 | 860 | 6 | 17 | 902 | 120 |
| Future Volume (veh/h) | 111 | 0 | 20 | 2 | 0 | 19 | 17 | 860 | 6 | 17 | 902 | 120 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 116 | 0 | 21 | 2 | 0 | 20 | 18 | 896 | 6 | 18 | 940 | 125 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 349 | 0 | 200 | 222 | 0 | 73 | 304 | 1500 | 10 | 334 | 1473 | 800 |
| Arrive On Green | 0.08 | 0.00 | 0.13 | 0.00 | 0.00 | 0.05 | 0.02 | 0.42 | 0.42 | 0.02 | 0.42 | 0.42 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 3561 | 24 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 116 | 0 | 21 | 2 | 0 | 20 | 18 | 440 | 462 | 18 | 940 | 125 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 1749 | 1836 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 2.8 | 0.0 | 0.5 | 0.1 | 0.0 | 0.6 | 0.3 | 9.1 | 9.1 | 0.3 | 10.0 | 2.0 |
| Cycle Q Clear(g_c), s | 2.8 | 0.0 | 0.5 | 0.1 | 0.0 | 0.6 | 0.3 | 9.1 | 9.1 | 0.3 | 10.0 | 2.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.01 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 349 | 0 | 200 | 222 | 0 | 73 | 304 | 737 | 774 | 334 | 1473 | 800 |
| V/C Ratio(X) | 0.33 | 0.00 | 0.10 | 0.01 | 0.00 | 0.28 | 0.06 | 0.60 | 0.60 | 0.05 | 0.64 | 0.16 |
| Avail Cap(c_a), veh/h | 467 | 0 | 1152 | 408 | 0 | 1084 | 455 | 1906 | 2002 | 484 | 3813 | 1860 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 18.3 | 0.0 | 18.1 | 21.2 | 0.0 | 21.6 | 8.4 | 10.5 | 10.5 | 8.2 | 10.7 | 6.2 |
| Incr Delay (d2), s/veh | 0.6 | 0.0 | 0.2 | 0.0 | 0.0 | 2.0 | 0.1 | 0.8 | 0.7 | 0.1 | 0.5 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.1 | 0.0 | 0.2 | 0.0 | 0.0 | 0.2 | 0.1 | 2.5 | 2.6 | 0.1 | 2.6 | 0.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 18.9 | 0.0 | 18.3 | 21.2 | 0.0 | 23.6 | 8.5 | 11.2 | 11.2 | 8.3 | 11.2 | 6.3 |
| LnGrp LOS | B | A | B | C | A | C | A | B | B | A | B | A |
| Approach Vol, veh/h | | 137 | | | 22 | | | 920 | | | 1083 | |
| Approach Delay, s/veh | | 18.8 | | | 23.4 | | | 11.2 | | | 10.6 | |
| Approach LOS | | B | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.0 | 24.7 | 5.1 | 10.9 | 6.0 | 24.7 | 8.9 | 7.1 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 51.0 | 5.0 | 34.0 | 5.0 | 51.0 | 7.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 11.1 | 2.1 | 2.5 | 2.3 | 12.0 | 4.8 | 2.6 |
| Green Ext Time (p_c), s | 0.0 | 5.9 | 0.0 | 0.1 | 0.0 | 7.8 | 0.1 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.5 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 8.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 100 | 0 | 9 | 0 | 0 | 0 | 10 | 781 | 0 | 0 | 820 | 92 |
| Future Vol, veh/h | 100 | 0 | 9 | 0 | 0 | 0 | 10 | 781 | 0 | 0 | 820 | 92 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 105 | 0 | 9 | 0 | 0 | 0 | 11 | 822 | 0 | 0 | 863 | 97 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1345 | 1756 | 480 | 1276 | 1804 | 411 | 960 | 0 | 0 | 822 | 0 | 0 |
| Stage 1 | 912 | 912 | - | 844 | 844 | - | - | - | - | - | - | - |
| Stage 2 | 433 | 844 | - | 432 | 960 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 110 | 84 | 532 | 124 | 79 | 590 | 712 | - | - | 803 | - | - |
| Stage 1 | 295 | 351 | - | 324 | 377 | - | - | - | - | - | - | - |
| Stage 2 | 571 | 377 | - | 572 | 333 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 109 | 83 | 532 | 120 | 78 | 590 | 712 | - | - | 803 | - | - |
| Mov Cap-2 Maneuver | 109 | 83 | - | 120 | 78 | - | - | - | - | - | - | - |
| Stage 1 | 291 | 351 | - | 319 | 371 | - | - | - | - | - | - | - |
| Stage 2 | 562 | 371 | - | 562 | 333 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 148 | 0 | 0.1 | 0 |
| HCM LOS | F | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 712 | - | - | 117 | - | 803 | - | - |
| HCM Lane V/C Ratio | 0.015 | - | - | 0.981 | - | - | - | - |
| HCM Control Delay (s) | 10.1 | - | - | 148 | 0 | 0 | - | - |
| HCM Lane LOS | B | - | - | F | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 6.4 | - | 0 | - | - |

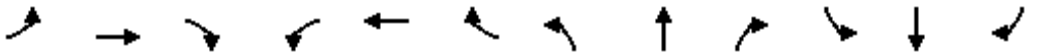
| Intersection | |
|---|---|
| Int Delay, s/veh | 2.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 26 | 6 | 24 | 20 | 3 | 25 | 29 | 720 | 17 | 30 | 791 | 32 |
| Future Vol, veh/h | 26 | 6 | 24 | 20 | 3 | 25 | 29 | 720 | 17 | 30 | 791 | 32 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 27 | 6 | 25 | 21 | 3 | 26 | 31 | 758 | 18 | 32 | 833 | 34 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1357 | 1752 | 434 | 1313 | 1760 | 388 | 867 | 0 | 0 | 776 | 0 | 0 |
| Stage 1 | 914 | 914 | - | 829 | 829 | - | - | - | - | - | - | - |
| Stage 2 | 443 | 838 | - | 484 | 931 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 108 | 85 | 570 | 116 | 84 | 611 | 772 | - | - | 836 | - | - |
| Stage 1 | 294 | 350 | - | 331 | 383 | - | - | - | - | - | - | - |
| Stage 2 | 564 | 380 | - | 533 | 344 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 94 | 79 | 570 | 98 | 78 | 611 | 772 | - | - | 836 | - | - |
| Mov Cap-2 Maneuver | 94 | 79 | - | 98 | 78 | - | - | - | - | - | - | - |
| Stage 1 | 282 | 337 | - | 318 | 368 | - | - | - | - | - | - | - |
| Stage 2 | 514 | 365 | - | 481 | 331 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 47.3 | 35.1 | 0.4 | 0.3 |
| HCM LOS | E | E | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 772 | - | - | 142 | 169 | 836 | - | - |
| HCM Lane V/C Ratio | 0.04 | - | - | 0.415 | 0.299 | 0.038 | - | - |
| HCM Control Delay (s) | 9.9 | - | - | 47.3 | 35.1 | 9.5 | - | - |
| HCM Lane LOS | A | - | - | E | E | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 1.8 | 1.2 | 0.1 | - | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 265 | 209 | 244 | 225 | 232 | 71 | 300 | 985 | 136 | 56 | 943 | 188 |
| Future Volume (veh/h) | 265 | 209 | 244 | 225 | 232 | 71 | 300 | 985 | 136 | 56 | 943 | 188 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 288 | 227 | 0 | 245 | 252 | 77 | 326 | 1071 | 0 | 61 | 1025 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 342 | 467 | | 402 | 280 | 86 | 357 | 1549 | | 233 | 1162 | |
| Arrive On Green | 0.14 | 0.25 | 0.00 | 0.10 | 0.20 | 0.20 | 0.15 | 0.44 | 0.00 | 0.04 | 0.33 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1375 | 420 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 288 | 227 | 0 | 245 | 0 | 329 | 326 | 1071 | 0 | 61 | 1025 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1795 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 14.1 | 11.9 | 0.0 | 11.0 | 0.0 | 20.5 | 14.5 | 28.2 | 0.0 | 2.6 | 31.8 | 0.0 |
| Cycle Q Clear(g_c), s | 14.1 | 11.9 | 0.0 | 11.0 | 0.0 | 20.5 | 14.5 | 28.2 | 0.0 | 2.6 | 31.8 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.23 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 342 | 467 | | 402 | 0 | 366 | 357 | 1549 | | 233 | 1162 | |
| V/C Ratio(X) | 0.84 | 0.49 | | 0.61 | 0.00 | 0.90 | 0.91 | 0.69 | | 0.26 | 0.88 | |
| Avail Cap(c_a), veh/h | 369 | 570 | | 402 | 0 | 438 | 419 | 1768 | | 260 | 1311 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 30.4 | 36.8 | 0.0 | 33.8 | 0.0 | 44.5 | 29.0 | 25.7 | 0.0 | 24.8 | 36.2 | 0.0 |
| Incr Delay (d2), s/veh | 15.3 | 0.8 | 0.0 | 2.7 | 0.0 | 18.9 | 22.3 | 1.0 | 0.0 | 0.6 | 6.8 | 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(50%),veh/ln | 7.3 | 5.5 | 0.0 | 0.9 | 0.0 | 10.9 | 8.0 | 11.2 | 0.0 | 1.1 | 13.9 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 45.7 | 37.5 | 0.0 | 36.4 | 0.0 | 63.5 | 51.2 | 26.7 | 0.0 | 25.4 | 42.9 | 0.0 |
| LnGrp LOS | D | D | | D | A | E | D | C | | C | D | |
| Approach Vol, veh/h | | 515 | | | 574 | | | 1397 | | | 1086 | |
| Approach Delay, s/veh | | 42.1 | | | 51.9 | | | 32.4 | | | 41.9 | |
| Approach LOS | | D | | | D | | | C | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 9.3 | 55.8 | 16.0 | 33.7 | 22.0 | 43.1 | 21.3 | 28.4 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 6.0 | 58.0 | 11.0 | 35.0 | 21.0 | 43.0 | 18.0 | 28.0 |
| Max Q Clear Time (g_c+I1), s | 4.6 | 30.2 | 13.0 | 13.9 | 16.5 | 33.8 | 16.1 | 22.5 |
| Green Ext Time (p_c), s | 0.0 | 8.0 | 0.0 | 1.2 | 0.4 | 4.4 | 0.2 | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 39.8 |
| HCM 6th LOS | D |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 175 | 0 | 31 | 2 | 2 | 38 | 19 | 1140 | 0 | 29 | 1100 | 161 |
| Future Volume (veh/h) | 175 | 0 | 31 | 2 | 2 | 38 | 19 | 1140 | 0 | 29 | 1100 | 161 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 190 | 0 | 34 | 2 | 2 | 41 | 21 | 1239 | 0 | 32 | 1196 | 175 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 357 | 0 | 266 | 201 | 4 | 90 | 246 | 1673 | 0 | 261 | 1706 | 949 |
| Arrive On Green | 0.11 | 0.00 | 0.17 | 0.00 | 0.06 | 0.06 | 0.02 | 0.48 | 0.00 | 0.03 | 0.49 | 0.49 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | 1781 | 74 | 1522 | 1781 | 3589 | 0 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 190 | 0 | 34 | 2 | 0 | 43 | 21 | 1239 | 0 | 32 | 1196 | 175 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | 1781 | 0 | 1596 | 1781 | 1749 | 0 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 6.0 | 0.0 | 1.2 | 0.1 | 0.0 | 1.6 | 0.4 | 18.0 | 0.0 | 0.6 | 16.8 | 3.1 |
| Cycle Q Clear(g_c), s | 6.0 | 0.0 | 1.2 | 0.1 | 0.0 | 1.6 | 0.4 | 18.0 | 0.0 | 0.6 | 16.8 | 3.1 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.95 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 357 | 0 | 266 | 201 | 0 | 95 | 246 | 1673 | 0 | 261 | 1706 | 949 |
| V/C Ratio(X) | 0.53 | 0.00 | 0.13 | 0.01 | 0.00 | 0.45 | 0.09 | 0.74 | 0.00 | 0.12 | 0.70 | 0.18 |
| Avail Cap(c_a), veh/h | 357 | 0 | 855 | 337 | 0 | 810 | 343 | 2829 | 0 | 342 | 2829 | 1458 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.6 | 0.0 | 22.3 | 27.8 | 0.0 | 28.7 | 10.1 | 13.3 | 0.0 | 10.4 | 12.6 | 5.7 |
| Incr Delay (d2), s/veh | 1.5 | 0.0 | 0.2 | 0.0 | 0.0 | 3.4 | 0.1 | 0.7 | 0.0 | 0.2 | 0.5 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.5 | 0.0 | 0.4 | 0.0 | 0.0 | 0.7 | 0.1 | 5.5 | 0.0 | 0.2 | 5.0 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 24.1 | 0.0 | 22.5 | 27.8 | 0.0 | 32.0 | 10.2 | 13.9 | 0.0 | 10.6 | 13.1 | 5.8 |
| LnGrp LOS | C | A | C | C | A | C | B | B | A | B | B | A |
| Approach Vol, veh/h | | 224 | | | 45 | | | 1260 | | | 1403 | |
| Approach Delay, s/veh | | 23.9 | | | 31.8 | | | 13.9 | | | 12.1 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.1 | 35.2 | 5.2 | 15.6 | 6.5 | 35.8 | 12.0 | 8.7 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 51.0 | 5.0 | 34.0 | 5.0 | 51.0 | 7.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.6 | 20.0 | 2.1 | 3.2 | 2.4 | 18.8 | 8.0 | 3.6 |
| Green Ext Time (p_c), s | 0.0 | 10.1 | 0.0 | 0.1 | 0.0 | 10.6 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 14.1 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 1248 | 0 | 0 | 1075 | 44 |
| Future Vol, veh/h | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 1248 | 0 | 0 | 1075 | 44 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| 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 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 1357 | 0 | 0 | 1168 | 48 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1875 | 2553 | 608 | 1945 | 2577 | 679 | 1216 | 0 | 0 | 1357 | 0 | 0 |
| Stage 1 | 1192 | 1192 | - | 1361 | 1361 | - | - | - | - | - | - | - |
| Stage 2 | 683 | 1361 | - | 584 | 1216 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 44 | 26 | 439 | 39 | 25 | 394 | 569 | - | - | 503 | - | - |
| Stage 1 | 199 | 259 | - | 156 | 215 | - | - | - | - | - | - | - |
| Stage 2 | 405 | 215 | - | 465 | 252 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 44 | 26 | 439 | 39 | 25 | 394 | 569 | - | - | 503 | - | - |
| Mov Cap-2 Maneuver | 44 | 26 | - | 39 | 25 | - | - | - | - | - | - | - |
| Stage 1 | 198 | 259 | - | 155 | 214 | - | - | - | - | - | - | - |
| Stage 2 | 404 | 214 | - | 465 | 252 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 100.6 | 0 | 0 | 0 |
| HCM LOS | F | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 569 | - | - | 44 | - | 503 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | - | 0.148 | - | - | - | - |
| HCM Control Delay (s) | 11.4 | - | - | 100.6 | 0 | 0 | - | - |
| HCM Lane LOS | B | - | - | F | A | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.5 | - | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 107.7 |

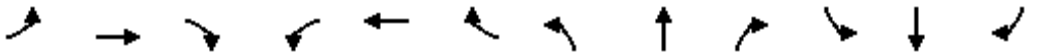
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 4 | 8 | 50 | 38 | 21 | 42 | 136 | 1183 | 63 | 23 | 983 | 15 |
| Future Vol, veh/h | 4 | 8 | 50 | 38 | 21 | 42 | 136 | 1183 | 63 | 23 | 983 | 15 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| 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 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 4 | 9 | 54 | 41 | 23 | 46 | 148 | 1286 | 68 | 25 | 1068 | 16 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2077 | 2776 | 542 | 2205 | 2750 | 677 | 1084 | 0 | 0 | 1354 | 0 | 0 |
| Stage 1 | 1126 | 1126 | - | 1616 | 1616 | - | - | - | - | - | - | - |
| Stage 2 | 951 | 1650 | - | 589 | 1134 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 31 | 19 | 485 | ~ 25 | ~ 20 | 395 | 639 | - | - | 504 | - | - |
| Stage 1 | 218 | 278 | - | 108 | 161 | - | - | - | - | - | - | - |
| Stage 2 | 279 | 155 | - | 461 | 276 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | 14 | 485 | ~ 9 | ~ 15 | 395 | 639 | - | - | 504 | - | - |
| Mov Cap-2 Maneuver | - | 14 | - | ~ 9 | ~ 15 | - | - | - | - | - | - | - |
| Stage 1 | 167 | 264 | - | 83 | 124 | - | - | - | - | - | - | - |
| Stage 2 | 155 | 119 | - | 376 | 262 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | | $ 2718 | 1.2 | 0.3 |
| HCM LOS | - | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 639 | - | - | - | 18 | 504 | - | - |
| HCM Lane V/C Ratio | 0.231 | - | - | - | 6.099 | 0.05 | - | - |
| HCM Control Delay (s) | 12.3 | - | - | - | $ 2718 | 12.5 | - | - |
| HCM Lane LOS | B | - | - | - | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.9 | - | - | - | 14.3 | 0.2 | - | - |

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 374 | 284 | 409 | 344 | 211 | 61 | 330 | 1377 | 319 | 65 | 1482 | 294 |
| Future Volume (veh/h) | 374 | 284 | 409 | 344 | 211 | 61 | 330 | 1377 | 319 | 65 | 1482 | 294 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 407 | 309 | 0 | 374 | 229 | 66 | 359 | 1497 | 0 | 71 | 1611 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 325 | 432 | | 299 | 255 | 74 | 257 | 1693 | | 157 | 1429 | |
| Arrive On Green | 0.14 | 0.23 | 0.00 | 0.09 | 0.18 | 0.18 | 0.11 | 0.48 | 0.00 | 0.04 | 0.41 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1396 | 402 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 407 | 309 | 0 | 374 | 0 | 295 | 359 | 1497 | 0 | 71 | 1611 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1798 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 17.0 | 19.0 | 0.0 | 11.0 | 0.0 | 20.0 | 14.0 | 48.2 | 0.0 | 2.9 | 51.0 | 0.0 |
| Cycle Q Clear(g_c), s | 17.0 | 19.0 | 0.0 | 11.0 | 0.0 | 20.0 | 14.0 | 48.2 | 0.0 | 2.9 | 51.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.22 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 325 | 432 | | 299 | 0 | 329 | 257 | 1693 | | 157 | 1429 | |
| V/C Ratio(X) | 1.25 | 0.72 | | 1.25 | 0.00 | 0.90 | 1.39 | 0.88 | | 0.45 | 1.13 | |
| Avail Cap(c_a), veh/h | 325 | 509 | | 299 | 0 | 403 | 257 | 1693 | | 163 | 1429 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 37.4 | 44.2 | 0.0 | 46.2 | 0.0 | 49.9 | 40.9 | 29.0 | 0.0 | 27.6 | 36.9 | 0.0 |
| Incr Delay (d2), s/veh | 136.9 | 3.9 | 0.0 | 137.6 | 0.0 | 19.5 | 199.5 | 6.0 | 0.0 | 2.0 | 66.9 | 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(50%),veh/ln | 20.3 | 9.2 | 0.0 | 15.4 | 0.0 | 10.7 | 18.0 | 20.2 | 0.0 | 1.2 | 33.8 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 174.3 | 48.1 | 0.0 | 183.7 | 0.0 | 69.3 | 240.4 | 35.0 | 0.0 | 29.6 | 103.8 | 0.0 |
| LnGrp LOS | F | D | | F | A | E | F | D | | C | F | |
| Approach Vol, veh/h | | 716 | | | 669 | | | 1856 | | | 1682 | |
| Approach Delay, s/veh | | 119.9 | | | 133.3 | | | 74.7 | | | 100.7 | |
| Approach LOS | | F | | | F | | | E | | | F | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 9.6 | 65.4 | 16.0 | 33.8 | 19.0 | 56.0 | 22.0 | 27.8 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 60.0 | 11.0 | 34.0 | 14.0 | 51.0 | 17.0 | 28.0 |
| Max Q Clear Time (g_c+I1), s | 4.9 | 50.2 | 13.0 | 21.0 | 16.0 | 53.0 | 19.0 | 22.0 |
| Green Ext Time (p_c), s | 0.0 | 6.5 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 0.8 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 98.1 |
| HCM 6th LOS | F |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 211 | 0 | 25 | 2 | 0 | 27 | 38 | 1655 | 6 | 29 | 1732 | 238 |
| Future Volume (veh/h) | 211 | 0 | 25 | 2 | 0 | 27 | 38 | 1655 | 6 | 29 | 1732 | 238 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 229 | 0 | 27 | 2 | 0 | 29 | 41 | 1799 | 7 | 32 | 1883 | 259 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 337 | 0 | 264 | 139 | 0 | 66 | 157 | 2098 | 8 | 174 | 2037 | 1126 |
| Arrive On Green | 0.13 | 0.00 | 0.17 | 0.00 | 0.00 | 0.04 | 0.03 | 0.59 | 0.59 | 0.03 | 0.58 | 0.58 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 3573 | 14 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 229 | 0 | 27 | 2 | 0 | 29 | 41 | 880 | 926 | 32 | 1883 | 259 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 1749 | 1838 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 11.2 | 0.0 | 1.4 | 0.1 | 0.0 | 1.7 | 0.8 | 39.2 | 39.3 | 0.7 | 45.7 | 5.3 |
| Cycle Q Clear(g_c), s | 11.2 | 0.0 | 1.4 | 0.1 | 0.0 | 1.7 | 0.8 | 39.2 | 39.3 | 0.7 | 45.7 | 5.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.01 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 337 | 0 | 264 | 139 | 0 | 66 | 157 | 1027 | 1080 | 174 | 2037 | 1126 |
| V/C Ratio(X) | 0.68 | 0.00 | 0.10 | 0.01 | 0.00 | 0.44 | 0.26 | 0.86 | 0.86 | 0.18 | 0.92 | 0.23 |
| Avail Cap(c_a), veh/h | 337 | 0 | 659 | 229 | 0 | 541 | 190 | 1044 | 1097 | 215 | 2087 | 1149 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 35.3 | 0.0 | 33.1 | 42.9 | 0.0 | 43.9 | 21.0 | 16.1 | 16.1 | 16.3 | 17.7 | 4.7 |
| Incr Delay (d2), s/veh | 5.4 | 0.0 | 0.2 | 0.0 | 0.0 | 4.6 | 0.9 | 7.1 | 6.9 | 0.5 | 7.5 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 5.3 | 0.0 | 0.5 | 0.0 | 0.0 | 0.7 | 0.5 | 14.8 | 15.5 | 0.3 | 17.0 | 1.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 40.8 | 0.0 | 33.3 | 42.9 | 0.0 | 48.5 | 21.9 | 23.2 | 23.0 | 16.8 | 25.2 | 4.8 |
| LnGrp LOS | D | A | C | D | A | D | C | C | C | B | C | A |
| Approach Vol, veh/h | | 256 | | | 31 | | | 1847 | | | 2174 | |
| Approach Delay, s/veh | | 40.0 | | | 48.1 | | | 23.1 | | | 22.7 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.8 | 60.1 | 5.3 | 20.6 | 8.3 | 59.7 | 17.0 | 8.9 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 56.0 | 5.0 | 39.0 | 5.0 | 56.0 | 12.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.7 | 41.3 | 2.1 | 3.4 | 2.8 | 47.7 | 13.2 | 3.7 |
| Green Ext Time (p_c), s | 0.0 | 10.1 | 0.0 | 0.1 | 0.0 | 7.0 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 24.0 |
| HCM 6th LOS | C |

**Notes**

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 192 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 106 | 0 | 19 | 0 | 0 | 0 | 12 | 1503 | 0 | 0 | 1653 | 132 |
| Future Vol, veh/h | 106 | 0 | 19 | 0 | 0 | 0 | 12 | 1503 | 0 | 0 | 1653 | 132 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| 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 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 115 | 0 | 21 | 0 | 0 | 0 | 13 | 1634 | 0 | 0 | 1797 | 143 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2712 | 3529 | 970 | 2559 | 3600 | 817 | 1940 | 0 | 0 | 1634 | 0 | 0 |
| Stage 1 | 1869 | 1869 | - | 1660 | 1660 | - | - | - | - | - | - | - |
| Stage 2 | 843 | 1660 | - | 899 | 1940 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 10 | 6 | 253 | 13 | 5 | 320 | 299 | - | - | 393 | - | - |
| Stage 1 | ~ 75 | 120 | - | 101 | 153 | - | - | - | - | - | - | - |
| Stage 2 | 325 | 153 | - | 300 | 111 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 10 | 6 | 253 | 12 | 5 | 320 | 299 | - | - | 393 | - | - |
| Mov Cap-2 Maneuver | ~ 10 | 6 | - | 12 | 5 | - | - | - | - | - | - | - |
| Stage 1 | ~ 72 | 120 | - | 97 | 146 | - | - | - | - | - | - | - |
| Stage 2 | 311 | 146 | - | 276 | 111 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 5258.7 | 0 | 0.1 | 0 |
| HCM LOS | F | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 299 | - | - | 12 | - | 393 | - | - |
| HCM Lane V/C Ratio | 0.044 | - | - | 11.322 | - | - | - | - |
| HCM Control Delay (s) | 17.6 | - | - | $ 5258.7 | 0 | 0 | - | - |
| HCM Lane LOS | C | - | - | F | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 18.3 | - | 0 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

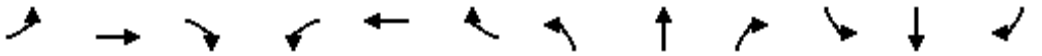
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 23 | 12 | 119 | 54 | 21 | 38 | 73 | 1436 | 50 | 58 | 1668 | 50 |
| Future Vol, veh/h | 23 | 12 | 119 | 54 | 21 | 38 | 73 | 1436 | 50 | 58 | 1668 | 50 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| 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 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 25 | 13 | 129 | 59 | 23 | 41 | 79 | 1561 | 54 | 63 | 1813 | 54 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2916 | 3739 | 934 | 2785 | 3739 | 808 | 1867 | 0 | 0 | 1615 | 0 | 0 |
| Stage 1 | 1966 | 1966 | - | 1746 | 1746 | - | - | - | - | - | - | - |
| Stage 2 | 950 | 1773 | - | 1039 | 1993 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 7 | ~ 4 | 267 | ~ 9 | ~ 4 | 324 | 319 | - | - | 400 | - | - |
| Stage 1 | 65 | 107 | - | 89 | 139 | - | - | - | - | - | - | - |
| Stage 2 | 280 | 134 | - | 247 | 104 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | ~ 3 | 267 | - | ~ 3 | 324 | 319 | - | - | 400 | - | - |
| Mov Cap-2 Maneuver | - | ~ 3 | - | - | ~ 3 | - | - | - | - | - | - | - |
| Stage 1 | 49 | 90 | - | 67 | 105 | - | - | - | - | - | - | - |
| Stage 2 | 144 | 101 | - | 92 | 88 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | | | 0.9 | 0.5 |
| HCM LOS | - | - | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 319 | - | - | - | - | 400 | - | - |
| HCM Lane V/C Ratio | 0.249 | - | - | - | - | 0.158 | - | - |
| HCM Control Delay (s) | 20 | - | - | - | - | 15.7 | - | - |
| HCM Lane LOS | C | - | - | - | - | C | - | - |
| HCM 95th %tile Q(veh) | 1 | - | - | - | - | 0.6 | - | - |

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 328 | 232 | 330 | 365 | 207 | 88 | 330 | 1419 | 321 | 83 | 1450 | 265 |
| Future Volume (veh/h) | 328 | 232 | 330 | 365 | 207 | 88 | 330 | 1419 | 321 | 83 | 1450 | 265 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 357 | 252 | 0 | 397 | 225 | 96 | 359 | 1542 | 0 | 90 | 1576 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 288 | 458 | | 326 | 246 | 105 | 281 | 1706 | | 155 | 1403 | |
| Arrive On Green | 0.12 | 0.24 | 0.00 | 0.07 | 0.20 | 0.20 | 0.13 | 0.49 | 0.00 | 0.04 | 0.40 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1244 | 531 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 357 | 252 | 0 | 397 | 0 | 321 | 359 | 1542 | 0 | 90 | 1576 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1775 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 15.0 | 14.9 | 0.0 | 9.0 | 0.0 | 22.5 | 16.0 | 51.3 | 0.0 | 3.8 | 51.0 | 0.0 |
| Cycle Q Clear(g_c), s | 15.0 | 14.9 | 0.0 | 9.0 | 0.0 | 22.5 | 16.0 | 51.3 | 0.0 | 3.8 | 51.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.30 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 288 | 458 | | 326 | 0 | 351 | 281 | 1706 | | 155 | 1403 | |
| V/C Ratio(X) | 1.24 | 0.55 | | 1.22 | 0.00 | 0.92 | 1.28 | 0.90 | | 0.58 | 1.12 | |
| Avail Cap(c_a), veh/h | 288 | 500 | | 326 | 0 | 391 | 281 | 1706 | | 155 | 1403 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 38.2 | 41.9 | 0.0 | 48.6 | 0.0 | 50.0 | 42.2 | 29.8 | 0.0 | 29.5 | 38.1 | 0.0 |
| Incr Delay (d2), s/veh | 133.1 | 1.1 | 0.0 | 122.4 | 0.0 | 24.4 | 149.8 | 7.2 | 0.0 | 5.4 | 65.3 | 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(50%),veh/ln | 17.7 | 7.0 | 0.0 | 17.1 | 0.0 | 12.3 | 16.0 | 21.8 | 0.0 | 1.8 | 33.3 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 171.3 | 43.0 | 0.0 | 171.0 | 0.0 | 74.3 | 192.0 | 37.1 | 0.0 | 34.9 | 103.4 | 0.0 |
| LnGrp LOS | F | D | | F | A | E | F | D | | C | F | |
| Approach Vol, veh/h | | 609 | | | 718 | | | 1901 | | | 1666 | |
| Approach Delay, s/veh | | 118.2 | | | 127.8 | | | 66.3 | | | 99.7 | |
| Approach LOS | | F | | | F | | | E | | | F | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.0 | 67.0 | 14.0 | 36.1 | 21.0 | 56.0 | 20.0 | 30.1 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 62.0 | 9.0 | 34.0 | 16.0 | 51.0 | 15.0 | 28.0 |
| Max Q Clear Time (g_c+I1), s | 5.8 | 53.3 | 11.0 | 16.9 | 18.0 | 53.0 | 17.0 | 24.5 |
| Green Ext Time (p_c), s | 0.0 | 6.0 | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 93.2 |
| HCM 6th LOS | F |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 238 | 2 | 48 | 2 | 0 | 40 | 19 | 1603 | 2 | 40 | 1572 | 234 |
| Future Volume (veh/h) | 238 | 2 | 48 | 2 | 0 | 40 | 19 | 1603 | 2 | 40 | 1572 | 234 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 259 | 2 | 52 | 2 | 0 | 43 | 21 | 1742 | 2 | 43 | 1709 | 254 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 305 | 9 | 233 | 168 | 0 | 87 | 168 | 2007 | 2 | 197 | 2011 | 1068 |
| Arrive On Green | 0.10 | 0.15 | 0.15 | 0.00 | 0.00 | 0.06 | 0.02 | 0.56 | 0.56 | 0.04 | 0.57 | 0.57 |
| Sat Flow, veh/h | 1781 | 59 | 1535 | 1781 | 0 | 1585 | 1781 | 3585 | 4 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 259 | 0 | 54 | 2 | 0 | 43 | 21 | 850 | 894 | 43 | 1709 | 254 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1594 | 1781 | 0 | 1585 | 1781 | 1749 | 1840 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 8.0 | 0.0 | 2.4 | 0.1 | 0.0 | 2.1 | 0.4 | 33.6 | 33.6 | 0.8 | 32.8 | 5.0 |
| Cycle Q Clear(g_c), s | 8.0 | 0.0 | 2.4 | 0.1 | 0.0 | 2.1 | 0.4 | 33.6 | 33.6 | 0.8 | 32.8 | 5.0 |
| Prop In Lane | 1.00 | | 0.96 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 305 | 0 | 241 | 168 | 0 | 87 | 168 | 979 | 1030 | 197 | 2011 | 1068 |
| V/C Ratio(X) | 0.85 | 0.00 | 0.22 | 0.01 | 0.00 | 0.49 | 0.12 | 0.87 | 0.87 | 0.22 | 0.85 | 0.24 |
| Avail Cap(c_a), veh/h | 305 | 0 | 691 | 274 | 0 | 628 | 237 | 1082 | 1139 | 239 | 2165 | 1138 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 33.1 | 0.0 | 30.1 | 35.9 | 0.0 | 37.1 | 13.9 | 15.2 | 15.2 | 15.0 | 14.3 | 5.1 |
| Incr Delay (d2), s/veh | 19.7 | 0.0 | 0.5 | 0.0 | 0.0 | 4.2 | 0.3 | 7.1 | 6.8 | 0.5 | 3.2 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.8 | 0.0 | 0.9 | 0.0 | 0.0 | 0.9 | 0.1 | 12.4 | 13.0 | 0.3 | 10.9 | 1.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 52.8 | 0.0 | 30.6 | 35.9 | 0.0 | 41.3 | 14.3 | 22.4 | 22.1 | 15.5 | 17.5 | 5.2 |
| LnGrp LOS | D | A | C | D | A | D | B | C | C | B | B | A |
| Approach Vol, veh/h | | 313 | | | 45 | | | 1765 | | | 2006 | |
| Approach Delay, s/veh | | 49.0 | | | 41.0 | | | 22.1 | | | 15.9 | |
| Approach LOS | | D | | | D | | | C | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.1 | 50.2 | 5.2 | 17.2 | 6.9 | 51.4 | 13.0 | 9.5 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 50.0 | 5.0 | 35.0 | 5.0 | 50.0 | 8.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.8 | 35.6 | 2.1 | 4.4 | 2.4 | 34.8 | 10.0 | 4.1 |
| Green Ext Time (p_c), s | 0.0 | 9.6 | 0.0 | 0.3 | 0.0 | 10.8 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 21.3 |
| HCM 6th LOS | C |

**Notes**

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 354.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 177 | 0 | 25 | 0 | 0 | 0 | 10 | 1530 | 0 | 0 | 1409 | 156 |
| Future Vol, veh/h | 177 | 0 | 25 | 0 | 0 | 0 | 10 | 1530 | 0 | 0 | 1409 | 156 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| 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 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 192 | 0 | 27 | 0 | 0 | 0 | 11 | 1663 | 0 | 0 | 1532 | 170 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2471 | 3302 | 851 | 2451 | 3387 | 832 | 1702 | 0 | 0 | 1663 | 0 | 0 |
| Stage 1 | 1617 | 1617 | - | 1685 | 1685 | - | - | - | - | - | - | - |
| Stage 2 | 854 | 1685 | - | 766 | 1702 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 15 | 8 | 303 | 16 | 7 | 312 | 370 | - | - | 383 | - | - |
| Stage 1 | ~ 108 | 161 | - | 98 | 149 | - | - | - | - | - | - | - |
| Stage 2 | 320 | 149 | - | 361 | 146 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 15 | 8 | 303 | 14 | 7 | 312 | 370 | - | - | 383 | - | - |
| Mov Cap-2 Maneuver | ~ 15 | 8 | - | 14 | 7 | - | - | - | - | - | - | - |
| Stage 1 | ~ 105 | 161 | - | 95 | 145 | - | - | - | - | - | - | - |
| Stage 2 | 310 | 145 | - | 329 | 146 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, $ | 5799.3 | 0 | 0.1 | 0 |
| HCM LOS | F | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 370 | - | - | 17 | - | 383 | - | - |
| HCM Lane V/C Ratio | 0.029 | - | - | 12.916 | - | - | - | - |
| HCM Control Delay (s) | 15 | - | - | $ 5799.3 | 0 | 0 | - | - |
| HCM Lane LOS | C | - | - | F | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 28.2 | - | 0 | - | - |

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

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

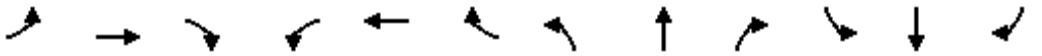
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 29 | 29 | 38 | 35 | 13 | 50 | 81 | 1396 | 44 | 61 | 1402 | 52 |
| Future Vol, veh/h | 29 | 29 | 38 | 35 | 13 | 50 | 81 | 1396 | 44 | 61 | 1402 | 52 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| 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 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 32 | 32 | 41 | 38 | 14 | 54 | 88 | 1517 | 48 | 66 | 1524 | 57 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2627 | 3426 | 791 | 2627 | 3430 | 783 | 1581 | 0 | 0 | 1565 | 0 | 0 |
| Stage 1 | 1685 | 1685 | - | 1717 | 1717 | - | - | - | - | - | - | - |
| Stage 2 | 942 | 1741 | - | 910 | 1713 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 12 | ~ 7 | 332 | ~ 12 | ~ 7 | 337 | 412 | - | - | 418 | - | - |
| Stage 1 | 98 | 149 | - | 93 | 143 | - | - | - | - | - | - | - |
| Stage 2 | 283 | 139 | - | 296 | 144 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | ~ 5 | 332 | - | ~ 5 | 337 | 412 | - | - | 418 | - | - |
| Mov Cap-2 Maneuver | - | ~ 5 | - | - | ~ 5 | - | - | - | - | - | - | - |
| Stage 1 | 77 | 125 | - | 73 | 112 | - | - | - | - | - | - | - |
| Stage 2 | 163 | 109 | - | 163 | 121 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | | | 0.9 | 0.6 |
| HCM LOS | - | - | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 412 | - | - | - | - | 418 | - | - |
| HCM Lane V/C Ratio | 0.214 | - | - | - | - | 0.159 | - | - |
| HCM Control Delay (s) | 16.1 | - | - | - | - | 15.2 | - | - |
| HCM Lane LOS | C | - | - | - | - | C | - | - |
| HCM 95th %tile Q(veh) | 0.8 | - | - | - | - | 0.6 | - | - |

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 265 | 171 | 288 | 309 | 140 | 67 | 307 | 1298 | 263 | 40 | 1379 | 217 |
| Future Volume (veh/h) | 265 | 171 | 288 | 309 | 140 | 67 | 307 | 1298 | 263 | 40 | 1379 | 217 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 288 | 186 | 0 | 336 | 152 | 73 | 334 | 1411 | 0 | 43 | 1499 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 281 | 371 | | 296 | 177 | 85 | 316 | 1904 | | 207 | 1519 | |
| Arrive On Green | 0.11 | 0.20 | 0.00 | 0.06 | 0.15 | 0.15 | 0.14 | 0.54 | 0.00 | 0.03 | 0.43 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1194 | 573 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 288 | 186 | 0 | 336 | 0 | 225 | 334 | 1411 | 0 | 43 | 1499 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1767 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 13.0 | 10.6 | 0.0 | 7.0 | 0.0 | 14.9 | 17.0 | 36.9 | 0.0 | 1.6 | 50.8 | 0.0 |
| Cycle Q Clear(g_c), s | 13.0 | 10.6 | 0.0 | 7.0 | 0.0 | 14.9 | 17.0 | 36.9 | 0.0 | 1.6 | 50.8 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.32 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 281 | 371 | | 296 | 0 | 262 | 316 | 1904 | | 207 | 1519 | |
| V/C Ratio(X) | 1.02 | 0.50 | | 1.14 | 0.00 | 0.86 | 1.06 | 0.74 | | 0.21 | 0.99 | |
| Avail Cap(c_a), veh/h | 281 | 531 | | 296 | 0 | 413 | 316 | 1904 | | 225 | 1519 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 41.7 | 42.7 | 0.0 | 49.5 | 0.0 | 49.8 | 39.9 | 20.8 | 0.0 | 20.1 | 33.5 | 0.0 |
| Incr Delay (d2), s/veh | 60.0 | 1.0 | 0.0 | 94.1 | 0.0 | 10.3 | 66.0 | 1.6 | 0.0 | 0.5 | 20.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.7 | 5.0 | 0.0 | 13.2 | 0.0 | 7.2 | 10.4 | 14.1 | 0.0 | 0.7 | 24.2 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 101.6 | 43.8 | 0.0 | 143.6 | 0.0 | 60.0 | 105.9 | 22.4 | 0.0 | 20.6 | 53.5 | 0.0 |
| LnGrp LOS | F | D | | F | A | E | F | C | | C | D | |
| Approach Vol, veh/h | | 474 | | | 561 | | | 1745 | | | 1542 | |
| Approach Delay, s/veh | | 78.9 | | | 110.1 | | | 38.4 | | | 52.6 | |
| Approach LOS | | E | | | F | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.8 | 70.2 | 12.0 | 28.8 | 22.0 | 57.0 | 18.0 | 22.8 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 64.0 | 7.0 | 34.0 | 17.0 | 52.0 | 13.0 | 28.0 |
| Max Q Clear Time (g_c+I1), s | 3.6 | 38.9 | 9.0 | 12.6 | 19.0 | 52.8 | 15.0 | 16.9 |
| Green Ext Time (p_c), s | 0.0 | 11.1 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 57.2 |
| HCM 6th LOS | E |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 190 | 0 | 35 | 4 | 0 | 33 | 29 | 1475 | 10 | 29 | 1546 | 205 |
| Future Volume (veh/h) | 190 | 0 | 35 | 4 | 0 | 33 | 29 | 1475 | 10 | 29 | 1546 | 205 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 207 | 0 | 38 | 4 | 0 | 36 | 32 | 1603 | 11 | 32 | 1680 | 223 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 254 | 0 | 179 | 176 | 0 | 84 | 200 | 2090 | 14 | 230 | 2053 | 1034 |
| Arrive On Green | 0.07 | 0.00 | 0.11 | 0.01 | 0.00 | 0.05 | 0.03 | 0.59 | 0.59 | 0.03 | 0.59 | 0.59 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 3561 | 24 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 207 | 0 | 38 | 4 | 0 | 36 | 32 | 787 | 827 | 32 | 1680 | 223 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 1749 | 1836 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 5.0 | 0.0 | 1.7 | 0.2 | 0.0 | 1.7 | 0.5 | 25.8 | 25.8 | 0.5 | 29.1 | 4.3 |
| Cycle Q Clear(g_c), s | 5.0 | 0.0 | 1.7 | 0.2 | 0.0 | 1.7 | 0.5 | 25.8 | 25.8 | 0.5 | 29.1 | 4.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.01 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 254 | 0 | 179 | 176 | 0 | 84 | 200 | 1026 | 1078 | 230 | 2053 | 1034 |
| V/C Ratio(X) | 0.82 | 0.00 | 0.21 | 0.02 | 0.00 | 0.43 | 0.16 | 0.77 | 0.77 | 0.14 | 0.82 | 0.22 |
| Avail Cap(c_a), veh/h | 254 | 0 | 665 | 284 | 0 | 665 | 260 | 1215 | 1276 | 289 | 2430 | 1205 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 33.3 | 0.0 | 30.7 | 33.9 | 0.0 | 35.0 | 12.1 | 11.8 | 11.8 | 10.5 | 12.5 | 5.4 |
| Incr Delay (d2), s/veh | 18.3 | 0.0 | 0.6 | 0.1 | 0.0 | 3.4 | 0.4 | 2.5 | 2.4 | 0.3 | 2.0 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.7 | 0.0 | 0.7 | 0.1 | 0.0 | 0.7 | 0.2 | 8.2 | 8.6 | 0.2 | 9.0 | 1.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 51.6 | 0.0 | 31.3 | 33.9 | 0.0 | 38.4 | 12.4 | 14.3 | 14.3 | 10.8 | 14.5 | 5.5 |
| LnGrp LOS | D | A | C | C | A | D | B | B | B | B | B | A |
| Approach Vol, veh/h | | 245 | | | 40 | | | 1646 | | | 1935 | |
| Approach Delay, s/veh | | 48.5 | | | 38.0 | | | 14.3 | | | 13.4 | |
| Approach LOS | | D | | | D | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.5 | 49.8 | 5.4 | 13.6 | 7.5 | 49.8 | 10.0 | 9.0 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 53.0 | 5.0 | 32.0 | 5.0 | 53.0 | 5.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.5 | 27.8 | 2.2 | 3.7 | 2.5 | 31.1 | 7.0 | 3.7 |
| Green Ext Time (p_c), s | 0.0 | 12.4 | 0.0 | 0.2 | 0.0 | 13.7 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 16.2 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 301 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 171 | 0 | 15 | 0 | 0 | 0 | 17 | 1338 | 0 | 0 | 1405 | 157 |
| Future Vol, veh/h | 171 | 0 | 15 | 0 | 0 | 0 | 17 | 1338 | 0 | 0 | 1405 | 157 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| 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 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 186 | 0 | 16 | 0 | 0 | 0 | 18 | 1454 | 0 | 0 | 1527 | 171 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2376 | 3103 | 849 | 2254 | 3188 | 727 | 1698 | 0 | 0 | 1454 | 0 | 0 |
| Stage 1 | 1613 | 1613 | - | 1490 | 1490 | - | - | - | - | - | - | - |
| Stage 2 | 763 | 1490 | - | 764 | 1698 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 18 | 11 | 304 | 23 | 10 | 366 | 371 | - | - | 461 | - | - |
| Stage 1 | ~ 109 | 161 | - | 130 | 186 | - | - | - | - | - | - | - |
| Stage 2 | 363 | 186 | - | 362 | 146 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 17 | 10 | 304 | 21 | 10 | 366 | 371 | - | - | 461 | - | - |
| Mov Cap-2 Maneuver | ~ 17 | 10 | - | 21 | 10 | - | - | - | - | - | - | - |
| Stage 1 | ~ 104 | 161 | - | 124 | 177 | - | - | - | - | - | - | - |
| Stage 2 | 345 | 177 | - | 343 | 146 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, $ | 5019.3 | 0 | 0.2 | 0 |
| HCM LOS | F | A | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 371 | - | - | 18 | - | 461 | - | - |
| HCM Lane V/C Ratio | 0.05 | - | - | 11.232 | - | - | - | - |
| HCM Control Delay (s) | 15.2 | - | - | $ 5019.3 | 0 | 0 | - | - |
| HCM Lane LOS | C | - | - | F | A | A | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 25.9 | - | 0 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 174.4 |

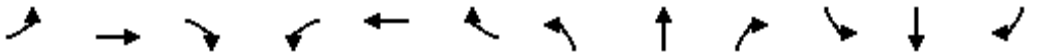
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 44 | 10 | 40 | 35 | 6 | 42 | 50 | 1235 | 29 | 52 | 1356 | 56 |
| Future Vol, veh/h | 44 | 10 | 40 | 35 | 6 | 42 | 50 | 1235 | 29 | 52 | 1356 | 56 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| 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 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 48 | 11 | 43 | 38 | 7 | 46 | 54 | 1342 | 32 | 57 | 1474 | 61 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2402 | 3101 | 768 | 2323 | 3115 | 687 | 1535 | 0 | 0 | 1374 | 0 | 0 |
| Stage 1 | 1619 | 1619 | - | 1466 | 1466 | - | - | - | - | - | - | - |
| Stage 2 | 783 | 1482 | - | 857 | 1649 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 17 | 11 | 344 | ~ 20 | 11 | 389 | 429 | - | - | 495 | - | - |
| Stage 1 | 108 | 160 | - | 134 | 191 | - | - | - | - | - | - | - |
| Stage 2 | 353 | 187 | - | 318 | 155 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 5 | ~ 9 | 344 | - | 9 | 389 | 429 | - | - | 495 | - | - |
| Mov Cap-2 Maneuver | ~ 5 | ~ 9 | - | - | 9 | - | - | - | - | - | - | - |
| Stage 1 | 94 | 142 | - | 117 | 167 | - | - | - | - | - | - | - |
| Stage 2 | 262 | 163 | - | 227 | 137 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 5467.4 | | 0.6 | 0.5 |
| HCM LOS | F | - | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 429 | - | - | 9 | - | 495 | - | - |
| HCM Lane V/C Ratio | 0.127 | - | - | 11.353 | - | 0.114 | - | - |
| HCM Control Delay (s) | 14.6 | - | - | $ 5467.4 | - | 13.2 | - | - |
| HCM Lane LOS | B | - | - | F | - | B | - | - |
| HCM 95th %tile Q(veh) | 0.4 | - | - | 14.3 | - | 0.4 | - | - |

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 155 | 122 | 150 | 132 | 136 | 41 | 181 | 618 | 81 | 32 | 607 | 110 |
| Future Volume (veh/h) | 155 | 122 | 150 | 132 | 136 | 41 | 181 | 618 | 81 | 32 | 607 | 110 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 168 | 133 | 0 | 143 | 148 | 45 | 197 | 672 | 0 | 35 | 660 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 381 | 321 | | 425 | 213 | 65 | 407 | 1231 | | 343 | 977 | |
| Arrive On Green | 0.11 | 0.17 | 0.00 | 0.09 | 0.15 | 0.15 | 0.11 | 0.35 | 0.00 | 0.04 | 0.28 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1376 | 419 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 168 | 133 | 0 | 143 | 0 | 193 | 197 | 672 | 0 | 35 | 660 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1795 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 4.4 | 3.7 | 0.0 | 3.8 | 0.0 | 5.9 | 4.2 | 8.9 | 0.0 | 0.8 | 9.6 | 0.0 |
| Cycle Q Clear(g_c), s | 4.4 | 3.7 | 0.0 | 3.8 | 0.0 | 5.9 | 4.2 | 8.9 | 0.0 | 0.8 | 9.6 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.23 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 381 | 321 | | 425 | 0 | 278 | 407 | 1231 | | 343 | 977 | |
| V/C Ratio(X) | 0.44 | 0.41 | | 0.34 | 0.00 | 0.69 | 0.48 | 0.55 | | 0.10 | 0.68 | |
| Avail Cap(c_a), veh/h | 683 | 1332 | | 539 | 0 | 1060 | 769 | 3342 | | 431 | 2552 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 17.6 | 21.3 | 0.0 | 17.8 | 0.0 | 23.0 | 12.6 | 15.0 | 0.0 | 13.9 | 18.4 | 0.0 |
| Incr Delay (d2), s/veh | 0.8 | 0.9 | 0.0 | 0.5 | 0.0 | 3.1 | 0.9 | 0.4 | 0.0 | 0.1 | 0.8 | 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(50%),veh/ln | 1.7 | 1.5 | 0.0 | 1.4 | 0.0 | 2.5 | 1.4 | 2.9 | 0.0 | 0.3 | 3.3 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 18.4 | 22.1 | 0.0 | 18.3 | 0.0 | 26.1 | 13.5 | 15.3 | 0.0 | 14.0 | 19.3 | 0.0 |
| LnGrp LOS | B | C | | B | A | C | B | B | | B | B | |
| Approach Vol, veh/h | | 301 | | | 336 | | | 869 | | | 695 | |
| Approach Delay, s/veh | | 20.0 | | | 22.8 | | | 14.9 | | | 19.0 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.1 | 25.3 | 10.3 | 14.9 | 11.3 | 21.1 | 11.2 | 13.9 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 55.0 | 9.0 | 41.0 | 18.0 | 42.0 | 16.0 | 34.0 |
| Max Q Clear Time (g_c+I1), s | 2.8 | 10.9 | 5.8 | 5.7 | 6.2 | 11.6 | 6.4 | 7.9 |
| Green Ext Time (p_c), s | 0.0 | 4.7 | 0.1 | 0.7 | 0.4 | 4.4 | 0.3 | 1.1 |

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

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 102 | 0 | 19 | 1 | 1 | 22 | 12 | 715 | 0 | 17 | 708 | 94 |
| Future Volume (veh/h) | 102 | 0 | 19 | 1 | 1 | 22 | 12 | 715 | 0 | 17 | 708 | 94 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 112 | 0 | 21 | 1 | 1 | 24 | 13 | 786 | 0 | 19 | 778 | 103 |
| Peak Hour Factor | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 373 | 0 | 215 | 245 | 3 | 77 | 322 | 1279 | 0 | 338 | 1303 | 728 |
| Arrive On Green | 0.09 | 0.00 | 0.14 | 0.00 | 0.05 | 0.05 | 0.02 | 0.37 | 0.00 | 0.02 | 0.37 | 0.37 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | 1781 | 64 | 1531 | 1781 | 3589 | 0 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 112 | 0 | 21 | 1 | 0 | 25 | 13 | 786 | 0 | 19 | 778 | 103 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | 1781 | 0 | 1595 | 1781 | 1749 | 0 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 2.4 | 0.0 | 0.5 | 0.0 | 0.0 | 0.6 | 0.2 | 7.8 | 0.0 | 0.3 | 7.6 | 1.6 |
| Cycle Q Clear(g_c), s | 2.4 | 0.0 | 0.5 | 0.0 | 0.0 | 0.6 | 0.2 | 7.8 | 0.0 | 0.3 | 7.6 | 1.6 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.96 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 373 | 0 | 215 | 245 | 0 | 80 | 322 | 1279 | 0 | 338 | 1303 | 728 |
| V/C Ratio(X) | 0.30 | 0.00 | 0.10 | 0.00 | 0.00 | 0.31 | 0.04 | 0.61 | 0.00 | 0.06 | 0.60 | 0.14 |
| Avail Cap(c_a), veh/h | 599 | 0 | 1314 | 494 | 0 | 1209 | 545 | 3977 | 0 | 549 | 3977 | 1940 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 16.3 | 0.0 | 16.0 | 19.0 | 0.0 | 19.3 | 8.7 | 11.0 | 0.0 | 8.7 | 10.7 | 6.6 |
| Incr Delay (d2), s/veh | 0.4 | 0.0 | 0.2 | 0.0 | 0.0 | 2.2 | 0.1 | 0.5 | 0.0 | 0.1 | 0.4 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.9 | 0.0 | 0.2 | 0.0 | 0.0 | 0.3 | 0.1 | 2.0 | 0.0 | 0.1 | 2.0 | 0.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 16.7 | 0.0 | 16.2 | 19.0 | 0.0 | 21.5 | 8.8 | 11.4 | 0.0 | 8.8 | 11.1 | 6.7 |
| LnGrp LOS | B | A | B | B | A | C | A | B | A | A | B | A |
| Approach Vol, veh/h | | 133 | | | 26 | | | 799 | | | 900 | |
| Approach Delay, s/veh | | 16.6 | | | 21.4 | | | 11.4 | | | 10.6 | |
| Approach LOS | | B | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.0 | 20.4 | 5.1 | 10.7 | 5.7 | 20.7 | 8.7 | 7.1 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 6.0 | 48.0 | 6.0 | 35.0 | 6.0 | 48.0 | 9.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 9.8 | 2.0 | 2.5 | 2.2 | 9.6 | 4.4 | 2.6 |
| Green Ext Time (p_c), s | 0.0 | 5.7 | 0.0 | 0.1 | 0.0 | 6.0 | 0.1 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.5 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 3 | 0 | 0 | 3 | 0 | 2 | 1 | 789 | 3 | 2 | 672 | 26 |
| Future Vol, veh/h | 3 | 0 | 0 | 3 | 0 | 2 | 1 | 789 | 3 | 2 | 672 | 26 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 3 | 0 | 0 | 3 | 0 | 2 | 1 | 822 | 3 | 2 | 700 | 27 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1131 | 1545 | 364 | 1180 | 1557 | 413 | 727 | 0 | 0 | 825 | 0 | 0 |
| Stage 1 | 718 | 718 | - | 826 | 826 | - | - | - | - | - | - | - |
| Stage 2 | 413 | 827 | - | 354 | 731 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 158 | 114 | 633 | 146 | 112 | 588 | 872 | - | - | 801 | - | - |
| Stage 1 | 386 | 431 | - | 332 | 385 | - | - | - | - | - | - | - |
| Stage 2 | 587 | 384 | - | 636 | 425 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 157 | 114 | 633 | 146 | 112 | 588 | 872 | - | - | 801 | - | - |
| Mov Cap-2 Maneuver | 157 | 114 | - | 146 | 112 | - | - | - | - | - | - | - |
| Stage 1 | 386 | 430 | - | 332 | 385 | - | - | - | - | - | - | - |
| Stage 2 | 584 | 384 | - | 634 | 424 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 28.4 | 22.7 | 0 | 0 |
| HCM LOS | D | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 872 | - | - | 157 | 209 | 801 | - | - |
| HCM Lane V/C Ratio | 0.001 | - | - | 0.02 | 0.025 | 0.003 | - | - |
| HCM Control Delay (s) | 9.1 | - | - | 28.4 | 22.7 | 9.5 | - | - |
| HCM Lane LOS | A | - | - | D | C | A | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.1 | 0.1 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 3 | 4 | 29 | 22 | 12 | 26 | 80 | 752 | 37 | 14 | 619 | 10 |
| Future Vol, veh/h | 3 | 4 | 29 | 22 | 12 | 26 | 80 | 752 | 37 | 14 | 619 | 10 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 3 | 4 | 31 | 23 | 13 | 28 | 85 | 800 | 39 | 15 | 659 | 11 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1272 | 1704 | 335 | 1352 | 1690 | 420 | 670 | 0 | 0 | 839 | 0 | 0 |
| Stage 1 | 695 | 695 | - | 990 | 990 | - | - | - | - | - | - | - |
| Stage 2 | 577 | 1009 | - | 362 | 700 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 125 | 91 | 661 | 109 | 92 | 582 | 916 | - | - | 791 | - | - |
| Stage 1 | 399 | 442 | - | 264 | 323 | - | - | - | - | - | - | - |
| Stage 2 | 469 | 316 | - | 629 | 440 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 96 | 81 | 661 | 91 | 82 | 582 | 916 | - | - | 791 | - | - |
| Mov Cap-2 Maneuver | 96 | 81 | - | 91 | 82 | - | - | - | - | - | - | - |
| Stage 1 | 362 | 434 | - | 239 | 293 | - | - | - | - | - | - | - |
| Stage 2 | 388 | 287 | - | 583 | 432 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 19.4 | 51.2 | 0.9 | 0.2 |
| HCM LOS | C | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 916 | - | - | 289 | 139 | 791 | - | - |
| HCM Lane V/C Ratio | 0.093 | - | - | 0.133 | 0.459 | 0.019 | - | - |
| HCM Control Delay (s) | 9.3 | - | - | 19.4 | 51.2 | 9.6 | - | - |
| HCM Lane LOS | A | - | - | C | F | A | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 0.5 | 2.1 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 19 | 23 | 760 | 19 | 22 | 698 |
| Future Vol, veh/h | 19 | 23 | 760 | 19 | 22 | 698 |
| 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 | - | - | - | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 21 | 25 | 826 | 21 | 24 | 759 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1265 | 424 | 0 | 0 | 847 | 0 |
| Stage 1 | 837 | - | - | - | - | - |
| Stage 2 | 428 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | 161 | 579 | - | - | 786 | - |
| Stage 1 | 385 | - | - | - | - | - |
| Stage 2 | 625 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 156 | 579 | - | - | 786 | - |
| Mov Cap-2 Maneuver | 281 | - | - | - | - | - |
| Stage 1 | 385 | - | - | - | - | - |
| Stage 2 | 606 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 15.4 | 0 | 0.3 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 391 | 786 | - |
| HCM Lane V/C Ratio | - | - | 0.117 | 0.03 | - |
| HCM Control Delay (s) | - | - | 15.4 | 9.7 | - |
| HCM Lane LOS | - | - | C | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.4 | 0.1 | - |

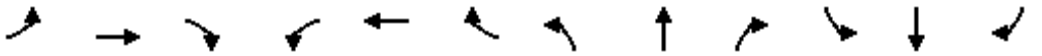
| Intersection | |
|---|---|
| Int Delay, s/veh | 1.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 39 | 40 | 739 | 55 | 56 | 661 |
| Future Vol, veh/h | 39 | 40 | 739 | 55 | 56 | 661 |
| 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 | - | - | - | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 42 | 43 | 803 | 60 | 61 | 718 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1314 | 432 | 0 | 0 | 863 | 0 |
| Stage 1 | 833 | - | - | - | - | - |
| Stage 2 | 481 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | 150 | 572 | - | - | 775 | - |
| Stage 1 | 387 | - | - | - | - | - |
| Stage 2 | 588 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 138 | 572 | - | - | 775 | - |
| Mov Cap-2 Maneuver | 267 | - | - | - | - | - |
| Stage 1 | 387 | - | - | - | - | - |
| Stage 2 | 542 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 17.8 | 0 | 0.8 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 366 | 775 | - |
| HCM Lane V/C Ratio | - | - | 0.235 | 0.079 | - |
| HCM Control Delay (s) | - | - | 17.8 | 10 | - |
| HCM Lane LOS | - | - | C | B | - |
| HCM 95th %tile Q(veh) | - | - | 0.9 | 0.3 | - |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 218 | 166 | 254 | 202 | 123 | 36 | 208 | 912 | 188 | 38 | 970 | 171 |
| Future Volume (veh/h) | 218 | 166 | 254 | 202 | 123 | 36 | 208 | 912 | 188 | 38 | 970 | 171 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 227 | 173 | 0 | 210 | 128 | 38 | 217 | 950 | 0 | 40 | 1010 | 0 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 381 | 253 | | 377 | 175 | 52 | 341 | 1531 | | 296 | 1312 | |
| Arrive On Green | 0.14 | 0.14 | 0.00 | 0.13 | 0.13 | 0.13 | 0.10 | 0.44 | 0.00 | 0.04 | 0.38 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1385 | 411 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 227 | 173 | 0 | 210 | 0 | 166 | 217 | 950 | 0 | 40 | 1010 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1796 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 8.2 | 6.7 | 0.0 | 7.6 | 0.0 | 6.8 | 5.3 | 15.9 | 0.0 | 1.0 | 19.3 | 0.0 |
| Cycle Q Clear(g_c), s | 8.2 | 6.7 | 0.0 | 7.6 | 0.0 | 6.8 | 5.3 | 15.9 | 0.0 | 1.0 | 19.3 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.23 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 381 | 253 | | 377 | 0 | 227 | 341 | 1531 | | 296 | 1312 | |
| V/C Ratio(X) | 0.60 | 0.68 | | 0.56 | 0.00 | 0.73 | 0.64 | 0.62 | | 0.14 | 0.77 | |
| Avail Cap(c_a), veh/h | 445 | 836 | | 433 | 0 | 779 | 561 | 2713 | | 346 | 2161 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 24.1 | 31.3 | 0.0 | 24.4 | 0.0 | 32.0 | 15.5 | 16.5 | 0.0 | 14.3 | 20.9 | 0.0 |
| Incr Delay (d2), s/veh | 1.6 | 3.2 | 0.0 | 1.3 | 0.0 | 4.5 | 2.0 | 0.4 | 0.0 | 0.2 | 1.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.4 | 3.1 | 0.0 | 3.1 | 0.0 | 3.1 | 1.9 | 5.5 | 0.0 | 0.4 | 7.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 25.7 | 34.6 | 0.0 | 25.6 | 0.0 | 36.4 | 17.5 | 16.9 | 0.0 | 14.5 | 21.9 | 0.0 |
| LnGrp LOS | C | C | | C | A | D | B | B | | B | C | |
| Approach Vol, veh/h | | 400 | | | 376 | | | 1167 | | | 1050 | |
| Approach Delay, s/veh | | 29.5 | | | 30.4 | | | 17.0 | | | 21.6 | |
| Approach LOS | | C | | | C | | | B | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.9 | 38.3 | 14.6 | 15.3 | 12.6 | 33.5 | 15.3 | 14.6 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 59.0 | 12.0 | 34.0 | 17.0 | 47.0 | 13.0 | 33.0 |
| Max Q Clear Time (g_c+I1), s | 3.0 | 17.9 | 9.6 | 8.7 | 7.3 | 21.3 | 10.2 | 8.8 |
| Green Ext Time (p_c), s | 0.0 | 7.4 | 0.1 | 0.9 | 0.4 | 7.2 | 0.2 | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 22.0 |
| HCM 6th LOS | C |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 123 | 0 | 16 | 1 | 0 | 16 | 23 | 1091 | 3 | 17 | 1132 | 139 |
| Future Volume (veh/h) | 123 | 0 | 16 | 1 | 0 | 16 | 23 | 1091 | 3 | 17 | 1132 | 139 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 131 | 0 | 17 | 1 | 0 | 17 | 24 | 1161 | 3 | 18 | 1204 | 148 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 323 | 0 | 199 | 181 | 0 | 59 | 268 | 1797 | 5 | 291 | 1736 | 929 |
| Arrive On Green | 0.09 | 0.00 | 0.13 | 0.00 | 0.00 | 0.04 | 0.03 | 0.50 | 0.50 | 0.02 | 0.50 | 0.50 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 3578 | 9 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 131 | 0 | 17 | 1 | 0 | 17 | 24 | 567 | 597 | 18 | 1204 | 148 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 1749 | 1839 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 3.8 | 0.0 | 0.5 | 0.0 | 0.0 | 0.6 | 0.4 | 13.7 | 13.7 | 0.3 | 15.2 | 2.4 |
| Cycle Q Clear(g_c), s | 3.8 | 0.0 | 0.5 | 0.0 | 0.0 | 0.6 | 0.4 | 13.7 | 13.7 | 0.3 | 15.2 | 2.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.01 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 323 | 0 | 199 | 181 | 0 | 59 | 268 | 878 | 924 | 291 | 1736 | 929 |
| V/C Ratio(X) | 0.41 | 0.00 | 0.09 | 0.01 | 0.00 | 0.29 | 0.09 | 0.65 | 0.65 | 0.06 | 0.69 | 0.16 |
| Avail Cap(c_a), veh/h | 412 | 0 | 968 | 333 | 0 | 885 | 375 | 1830 | 1925 | 408 | 3661 | 1801 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 21.8 | 0.0 | 22.1 | 26.5 | 0.0 | 26.9 | 8.7 | 10.5 | 10.5 | 8.3 | 11.1 | 5.4 |
| Incr Delay (d2), s/veh | 0.8 | 0.0 | 0.2 | 0.0 | 0.0 | 2.6 | 0.1 | 0.8 | 0.8 | 0.1 | 0.5 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.6 | 0.0 | 0.2 | 0.0 | 0.0 | 0.3 | 0.1 | 3.9 | 4.0 | 0.1 | 4.2 | 0.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 22.6 | 0.0 | 22.3 | 26.5 | 0.0 | 29.5 | 8.9 | 11.3 | 11.3 | 8.4 | 11.6 | 5.5 |
| LnGrp LOS | C | A | C | C | A | C | A | B | B | A | B | A |
| Approach Vol, veh/h | | 148 | | | 18 | | | 1188 | | | 1370 | |
| Approach Delay, s/veh | | 22.6 | | | 29.3 | | | 11.2 | | | 10.9 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.2 | 33.8 | 5.1 | 12.2 | 6.6 | 33.5 | 10.1 | 7.1 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 60.0 | 5.0 | 35.0 | 5.0 | 60.0 | 8.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 15.7 | 2.0 | 2.5 | 2.4 | 17.2 | 5.8 | 2.6 |
| Green Ext Time (p_c), s | 0.0 | 8.7 | 0.0 | 0.1 | 0.0 | 11.3 | 0.1 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.8 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 8.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 62 | 0 | 11 | 7 | 0 | 4 | 7 | 987 | 6 | 4 | 1079 | 77 |
| Future Vol, veh/h | 62 | 0 | 11 | 7 | 0 | 4 | 7 | 987 | 6 | 4 | 1079 | 77 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 65 | 0 | 11 | 7 | 0 | 4 | 7 | 1028 | 6 | 4 | 1124 | 80 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1700 | 2220 | 602 | 1615 | 2257 | 517 | 1204 | 0 | 0 | 1034 | 0 | 0 |
| Stage 1 | 1172 | 1172 | - | 1045 | 1045 | - | - | - | - | - | - | - |
| Stage 2 | 528 | 1048 | - | 570 | 1212 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 60 | 43 | 443 | 69 | 41 | 503 | 575 | - | - | 668 | - | - |
| Stage 1 | 204 | 264 | - | 245 | 304 | - | - | - | - | - | - | - |
| Stage 2 | 502 | 303 | - | 474 | 253 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 59 | 42 | 443 | 66 | 40 | 503 | 575 | - | - | 668 | - | - |
| Mov Cap-2 Maneuver | ~ 59 | 42 | - | 66 | 40 | - | - | - | - | - | - | - |
| Stage 1 | 202 | 262 | - | 242 | 300 | - | - | - | - | - | - | - |
| Stage 2 | 492 | 299 | - | 459 | 251 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 249.9 | 47.5 | 0.1 | 0 |
| HCM LOS | F | E | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 575 | - | - | 68 | 96 | 668 | - | - |
| HCM Lane V/C Ratio | 0.013 | - | - | 1.118 | 0.119 | 0.006 | - | - |
| HCM Control Delay (s) | 11.3 | - | - | 249.9 | 47.5 | 10.4 | - | - |
| HCM Lane LOS | B | - | - | F | E | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 5.9 | 0.4 | 0 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 16.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 14 | 7 | 69 | 31 | 12 | 23 | 43 | 952 | 29 | 35 | 1093 | 30 |
| Future Vol, veh/h | 14 | 7 | 69 | 31 | 12 | 23 | 43 | 952 | 29 | 35 | 1093 | 30 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 15 | 7 | 72 | 32 | 13 | 24 | 45 | 992 | 30 | 36 | 1139 | 31 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1820 | 2339 | 585 | 1742 | 2339 | 511 | 1170 | 0 | 0 | 1022 | 0 | 0 |
| Stage 1 | 1227 | 1227 | - | 1097 | 1097 | - | - | - | - | - | - | - |
| Stage 2 | 593 | 1112 | - | 645 | 1242 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 48 | 36 | 454 | 55 | 36 | 508 | 593 | - | - | 675 | - | - |
| Stage 1 | 189 | 249 | - | 227 | 287 | - | - | - | - | - | - | - |
| Stage 2 | 459 | 282 | - | 427 | 245 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 29 | 32 | 454 | 35 | 32 | 508 | 593 | - | - | 675 | - | - |
| Mov Cap-2 Maneuver | 29 | 32 | - | 35 | 32 | - | - | - | - | - | - | - |
| Stage 1 | 175 | 236 | - | 210 | 265 | - | - | - | - | - | - | - |
| Stage 2 | 385 | 261 | - | 330 | 232 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 135 | $ 375.1 | 0.5 | 0.3 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 593 | - | - | 105 | 51 | 675 | - | - |
| HCM Lane V/C Ratio | 0.076 | - | - | 0.893 | 1.348 | 0.054 | - | - |
| HCM Control Delay (s) | 11.6 | - | - | 135 | $ 375.1 | 10.6 | - | - |
| HCM Lane LOS | B | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 5.3 | 6.3 | 0.2 | - | - |

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

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

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 25 | 30 | 1035 | 25 | 31 | 1133 |
| Future Vol, veh/h | 25 | 30 | 1035 | 25 | 31 | 1133 |
| 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 | - | - | - | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 27 | 33 | 1125 | 27 | 34 | 1232 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1823 | 576 | 0 | 0 | 1152 | 0 |
| Stage 1 | 1139 | - | - | - | - | - |
| Stage 2 | 684 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | 69 | 460 | - | - | 602 | - |
| Stage 1 | 267 | - | - | - | - | - |
| Stage 2 | 462 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 65 | 460 | - | - | 602 | - |
| Mov Cap-2 Maneuver | 179 | - | - | - | - | - |
| Stage 1 | 267 | - | - | - | - | - |
| Stage 2 | 436 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 22.2 | 0 | 0.3 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 268 | 602 | - |
| HCM Lane V/C Ratio | - | - | 0.223 | 0.056 | - |
| HCM Control Delay (s) | - | - | 22.2 | 11.3 | - |
| HCM Lane LOS | - | - | C | B | - |
| HCM 95th %tile Q(veh) | - | - | 0.8 | 0.2 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 8.7 |

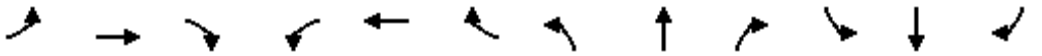
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 106 | 108 | 952 | 101 | 104 | 1054 |
| Future Vol, veh/h | 106 | 108 | 952 | 101 | 104 | 1054 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 115 | 117 | 1035 | 110 | 113 | 1146 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1889 | 573 | 0 | 0 | 1145 | 0 |
| Stage 1 | 1090 | - | - | - | - | - |
| Stage 2 | 799 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | ~ 62 | 463 | - | - | 606 | - |
| Stage 1 | 284 | - | - | - | - | - |
| Stage 2 | 403 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 50 | 463 | - | - | 606 | - |
| Mov Cap-2 Maneuver | 162 | - | - | - | - | - |
| Stage 1 | 284 | - | - | - | - | - |
| Stage 2 | 328 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 93 | 0 | 1.1 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 241 | 606 | - |
| HCM Lane V/C Ratio | - | - | 0.965 | 0.187 | - |
| HCM Control Delay (s) | - | - | 93 | 12.3 | - |
| HCM Lane LOS | - | - | F | B | - |
| HCM 95th %tile Q(veh) | - | - | 8.8 | 0.7 | - |

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 192 | 136 | 210 | 215 | 121 | 52 | 209 | 945 | 189 | 48 | 971 | 155 |
| Future Volume (veh/h) | 192 | 136 | 210 | 215 | 121 | 52 | 209 | 945 | 189 | 48 | 971 | 155 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 198 | 140 | 0 | 222 | 125 | 54 | 215 | 974 | 0 | 49 | 1001 | 0 |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 360 | 233 | | 400 | 169 | 73 | 345 | 1512 | | 295 | 1311 | |
| Arrive On Green | 0.12 | 0.12 | 0.00 | 0.13 | 0.14 | 0.14 | 0.10 | 0.43 | 0.00 | 0.04 | 0.37 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1239 | 535 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 198 | 140 | 0 | 222 | 0 | 179 | 215 | 974 | 0 | 49 | 1001 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1774 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 7.1 | 5.3 | 0.0 | 7.9 | 0.0 | 7.2 | 5.2 | 16.4 | 0.0 | 1.2 | 18.7 | 0.0 |
| Cycle Q Clear(g_c), s | 7.1 | 5.3 | 0.0 | 7.9 | 0.0 | 7.2 | 5.2 | 16.4 | 0.0 | 1.2 | 18.7 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.30 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 360 | 233 | | 400 | 0 | 242 | 345 | 1512 | | 295 | 1311 | |
| V/C Ratio(X) | 0.55 | 0.60 | | 0.55 | 0.00 | 0.74 | 0.62 | 0.64 | | 0.17 | 0.76 | |
| Avail Cap(c_a), veh/h | 430 | 850 | | 449 | 0 | 807 | 547 | 2759 | | 338 | 2245 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 24.3 | 31.0 | 0.0 | 23.8 | 0.0 | 31.0 | 15.2 | 16.7 | 0.0 | 14.1 | 20.5 | 0.0 |
| Incr Delay (d2), s/veh | 1.3 | 2.5 | 0.0 | 1.2 | 0.0 | 4.4 | 1.9 | 0.5 | 0.0 | 0.3 | 0.9 | 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(50%),veh/ln | 2.9 | 2.4 | 0.0 | 3.2 | 0.0 | 3.2 | 1.9 | 5.7 | 0.0 | 0.4 | 6.8 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 25.6 | 33.4 | 0.0 | 25.0 | 0.0 | 35.4 | 17.1 | 17.2 | 0.0 | 14.4 | 21.4 | 0.0 |
| LnGrp LOS | C | C | | C | A | D | B | B | | B | C | |
| Approach Vol, veh/h | | 338 | | | 401 | | | 1189 | | | 1050 | |
| Approach Delay, s/veh | | 28.8 | | | 29.6 | | | 17.1 | | | 21.1 | |
| Approach LOS | | C | | | C | | | B | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.2 | 37.3 | 14.9 | 14.3 | 12.5 | 33.0 | 14.1 | 15.2 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 59.0 | 12.0 | 34.0 | 16.0 | 48.0 | 12.0 | 34.0 |
| Max Q Clear Time (g_c+I1), s | 3.2 | 18.4 | 9.9 | 7.3 | 7.2 | 20.7 | 9.1 | 9.2 |
| Green Ext Time (p_c), s | 0.0 | 7.6 | 0.1 | 0.7 | 0.4 | 7.3 | 0.1 | 1.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 21.5 |
| HCM 6th LOS | C |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 139 | 1 | 29 | 1 | 0 | 24 | 12 | 1070 | 1 | 24 | 1061 | 137 |
| Future Volume (veh/h) | 139 | 1 | 29 | 1 | 0 | 24 | 12 | 1070 | 1 | 24 | 1061 | 137 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 148 | 1 | 31 | 1 | 0 | 26 | 13 | 1138 | 1 | 26 | 1129 | 146 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 359 | 8 | 233 | 208 | 0 | 85 | 253 | 1634 | 1 | 284 | 1640 | 899 |
| Arrive On Green | 0.10 | 0.15 | 0.15 | 0.00 | 0.00 | 0.05 | 0.02 | 0.46 | 0.46 | 0.03 | 0.47 | 0.47 |
| Sat Flow, veh/h | 1781 | 50 | 1543 | 1781 | 0 | 1585 | 1781 | 3586 | 3 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 148 | 0 | 32 | 1 | 0 | 26 | 13 | 555 | 584 | 26 | 1129 | 146 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1593 | 1781 | 0 | 1585 | 1781 | 1749 | 1840 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 4.1 | 0.0 | 1.0 | 0.0 | 0.0 | 0.9 | 0.2 | 14.0 | 14.0 | 0.4 | 14.0 | 2.4 |
| Cycle Q Clear(g_c), s | 4.1 | 0.0 | 1.0 | 0.0 | 0.0 | 0.9 | 0.2 | 14.0 | 14.0 | 0.4 | 14.0 | 2.4 |
| Prop In Lane | 1.00 | | 0.97 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 359 | 0 | 240 | 208 | 0 | 85 | 253 | 797 | 838 | 284 | 1640 | 899 |
| V/C Ratio(X) | 0.41 | 0.00 | 0.13 | 0.00 | 0.00 | 0.30 | 0.05 | 0.70 | 0.70 | 0.09 | 0.69 | 0.16 |
| Avail Cap(c_a), veh/h | 377 | 0 | 952 | 366 | 0 | 919 | 385 | 1647 | 1733 | 392 | 3294 | 1649 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 19.9 | 0.0 | 20.3 | 24.6 | 0.0 | 25.1 | 9.4 | 12.0 | 12.0 | 9.3 | 11.5 | 5.7 |
| Incr Delay (d2), s/veh | 0.8 | 0.0 | 0.2 | 0.0 | 0.0 | 2.0 | 0.1 | 1.1 | 1.1 | 0.1 | 0.5 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.6 | 0.0 | 0.4 | 0.0 | 0.0 | 0.4 | 0.1 | 4.1 | 4.3 | 0.1 | 3.9 | 0.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 20.7 | 0.0 | 20.6 | 24.6 | 0.0 | 27.1 | 9.5 | 13.1 | 13.0 | 9.4 | 12.0 | 5.8 |
| LnGrp LOS | C | A | C | C | A | C | A | B | B | A | B | A |
| Approach Vol, veh/h | | 180 | | | 27 | | | 1152 | | | 1301 | |
| Approach Delay, s/veh | | 20.6 | | | 27.0 | | | 13.0 | | | 11.3 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.6 | 30.2 | 5.1 | 13.3 | 5.9 | 30.9 | 10.4 | 8.0 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.6 | 52.0 | 5.0 | 33.0 | 5.0 | 52.0 | 6.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.4 | 16.0 | 2.0 | 3.0 | 2.2 | 16.0 | 6.1 | 2.9 |
| Green Ext Time (p_c), s | 0.0 | 8.2 | 0.0 | 0.1 | 0.0 | 9.9 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 12.8 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 24.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 103 | 0 | 15 | 7 | 0 | 5 | 6 | 1025 | 8 | 5 | 945 | 91 |
| Future Vol, veh/h | 103 | 0 | 15 | 7 | 0 | 5 | 6 | 1025 | 8 | 5 | 945 | 91 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 | 94 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 110 | 0 | 16 | 7 | 0 | 5 | 6 | 1090 | 9 | 5 | 1005 | 97 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1621 | 2175 | 551 | 1620 | 2219 | 550 | 1102 | 0 | 0 | 1099 | 0 | 0 |
| Stage 1 | 1064 | 1064 | - | 1107 | 1107 | - | - | - | - | - | - | - |
| Stage 2 | 557 | 1111 | - | 513 | 1112 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 68 | 46 | 478 | 68 | 43 | 479 | 629 | - | - | 631 | - | - |
| Stage 1 | 238 | 298 | - | 224 | 284 | - | - | - | - | - | - | - |
| Stage 2 | 482 | 283 | - | 512 | 282 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 66 | 45 | 478 | 65 | 42 | 479 | 629 | - | - | 631 | - | - |
| Mov Cap-2 Maneuver | ~ 66 | 45 | - | 65 | 42 | - | - | - | - | - | - | - |
| Stage 1 | 236 | 296 | - | 222 | 281 | - | - | - | - | - | - | - |
| Stage 2 | 472 | 280 | - | 491 | 280 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 458.7 | 45.3 | 0.1 | 0.1 |
| HCM LOS | F | E | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 629 | - | - | 74 | 102 | 631 | - | - |
| HCM Lane V/C Ratio | 0.01 | - | - | 1.696 | 0.125 | 0.008 | - | - |
| HCM Control Delay (s) | 10.8 | - | - | $ 458.7 | 45.3 | 10.8 | - | - |
| HCM Lane LOS | B | - | - | F | E | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 10.8 | 0.4 | 0 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 19.6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 18 | 17 | 22 | 20 | 8 | 30 | 47 | 952 | 26 | 37 | 946 | 31 |
| Future Vol, veh/h | 18 | 17 | 22 | 20 | 8 | 30 | 47 | 952 | 26 | 37 | 946 | 31 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 20 | 19 | 24 | 22 | 9 | 33 | 52 | 1058 | 29 | 41 | 1051 | 34 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1788 | 2341 | 543 | 1794 | 2344 | 544 | 1085 | 0 | 0 | 1087 | 0 | 0 |
| Stage 1 | 1150 | 1150 | - | 1177 | 1177 | - | - | - | - | - | - | - |
| Stage 2 | 638 | 1191 | - | 617 | 1167 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 51 | 36 | 484 | 51 | 36 | 483 | 639 | - | - | 638 | - | - |
| Stage 1 | 211 | 271 | - | 203 | 263 | - | - | - | - | - | - | - |
| Stage 2 | 431 | 259 | - | 444 | 266 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 33 | 31 | 484 | 23 | 31 | 483 | 639 | - | - | 638 | - | - |
| Mov Cap-2 Maneuver | 33 | 31 | - | 23 | 31 | - | - | - | - | - | - | - |
| Stage 1 | 194 | 254 | - | 187 | 242 | - | - | - | - | - | - | - |
| Stage 2 | 355 | 238 | - | 365 | 249 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 348.3 | $ 369.6 | 0.5 | 0.4 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 639 | - | - | 50 | 49 | 638 | - | - |
| HCM Lane V/C Ratio | 0.082 | - | - | 1.267 | 1.315 | 0.064 | - | - |
| HCM Control Delay (s) | 11.1 | - | - | $ 348.3 | $ 369.6 | 11 | - | - |
| HCM Lane LOS | B | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.3 | - | - | 5.8 | 6 | 0.2 | - | - |

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

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

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 25 | 31 | 1101 | 25 | 31 | 1027 |
| Future Vol, veh/h | 25 | 31 | 1101 | 25 | 31 | 1027 |
| 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 | - | - | - | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 27 | 34 | 1197 | 27 | 34 | 1116 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1837 | 612 | 0 | 0 | 1224 | 0 |
| Stage 1 | 1211 | - | - | - | - | - |
| Stage 2 | 626 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | 67 | 436 | - | - | 565 | - |
| Stage 1 | 245 | - | - | - | - | - |
| Stage 2 | 495 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 63 | 436 | - | - | 565 | - |
| Mov Cap-2 Maneuver | 172 | - | - | - | - | - |
| Stage 1 | 245 | - | - | - | - | - |
| Stage 2 | 465 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 23.1 | 0 | 0.3 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 259 | 565 | - |
| HCM Lane V/C Ratio | - | - | 0.235 | 0.06 | - |
| HCM Control Delay (s) | - | - | 23.1 | 11.8 | - |
| HCM Lane LOS | - | - | C | B | - |
| HCM 95th %tile Q(veh) | - | - | 0.9 | 0.2 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 14.3 |

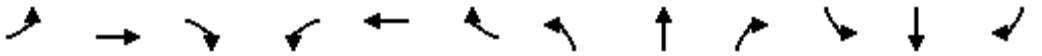
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 114 | 116 | 1010 | 123 | 125 | 927 |
| Future Vol, veh/h | 114 | 116 | 1010 | 123 | 125 | 927 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 124 | 126 | 1098 | 134 | 136 | 1008 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1941 | 616 | 0 | 0 | 1232 | 0 |
| Stage 1 | 1165 | - | - | - | - | - |
| Stage 2 | 776 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | ~ 57 | 433 | - | - | 561 | - |
| Stage 1 | 259 | - | - | - | - | - |
| Stage 2 | 414 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 43 | 433 | - | - | 561 | - |
| Mov Cap-2 Maneuver | 149 | - | - | - | - | - |
| Stage 1 | 259 | - | - | - | - | - |
| Stage 2 | 314 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 142.7 | 0 | 1.6 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 223 | 561 | - |
| HCM Lane V/C Ratio | - | - | 1.121 | 0.242 | - |
| HCM Control Delay (s) | - | - | 142.7 | 13.5 | - |
| HCM Lane LOS | - | - | F | B | - |
| HCM 95th %tile Q(veh) | - | - | 11.5 | 0.9 | - |

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 155 | 100 | 185 | 182 | 82 | 39 | 195 | 875 | 155 | 24 | 931 | 127 |
| Future Volume (veh/h) | 155 | 100 | 185 | 182 | 82 | 39 | 195 | 875 | 155 | 24 | 931 | 127 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 158 | 102 | 0 | 186 | 84 | 40 | 199 | 893 | 0 | 24 | 950 | 0 |
| Peak Hour Factor | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 351 | 172 | | 380 | 131 | 62 | 371 | 1558 | | 321 | 1312 | |
| Arrive On Green | 0.10 | 0.09 | 0.00 | 0.12 | 0.11 | 0.11 | 0.10 | 0.45 | 0.00 | 0.03 | 0.38 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1197 | 570 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 158 | 102 | 0 | 186 | 0 | 124 | 199 | 893 | 0 | 24 | 950 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1768 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 5.0 | 3.3 | 0.0 | 5.8 | 0.0 | 4.3 | 4.0 | 12.1 | 0.0 | 0.5 | 14.8 | 0.0 |
| Cycle Q Clear(g_c), s | 5.0 | 3.3 | 0.0 | 5.8 | 0.0 | 4.3 | 4.0 | 12.1 | 0.0 | 0.5 | 14.8 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.32 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 351 | 172 | | 380 | 0 | 193 | 371 | 1558 | | 321 | 1312 | |
| V/C Ratio(X) | 0.45 | 0.59 | | 0.49 | 0.00 | 0.64 | 0.54 | 0.57 | | 0.07 | 0.72 | |
| Avail Cap(c_a), veh/h | 391 | 1030 | | 473 | 0 | 1057 | 646 | 3246 | | 412 | 2641 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 22.7 | 27.7 | 0.0 | 22.1 | 0.0 | 27.1 | 12.2 | 13.1 | 0.0 | 12.0 | 17.0 | 0.0 |
| Incr Delay (d2), s/veh | 0.9 | 3.2 | 0.0 | 1.0 | 0.0 | 3.6 | 1.2 | 0.3 | 0.0 | 0.1 | 0.8 | 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(50%),veh/ln | 2.0 | 1.5 | 0.0 | 2.3 | 0.0 | 1.9 | 1.3 | 3.8 | 0.0 | 0.2 | 5.0 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 23.6 | 31.0 | 0.0 | 23.1 | 0.0 | 30.7 | 13.5 | 13.5 | 0.0 | 12.1 | 17.8 | 0.0 |
| LnGrp LOS | C | C | | C | A | C | B | B | | B | B | |
| Approach Vol, veh/h | | 260 | | | 310 | | | 1092 | | | 974 | |
| Approach Delay, s/veh | | 26.5 | | | 26.1 | | | 13.5 | | | 17.7 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.7 | 33.3 | 12.7 | 10.8 | 11.2 | 28.8 | 11.6 | 11.9 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 59.0 | 11.0 | 35.0 | 16.0 | 48.0 | 8.0 | 38.0 |
| Max Q Clear Time (g_c+I1), s | 2.5 | 14.1 | 7.8 | 5.3 | 6.0 | 16.8 | 7.0 | 6.3 |
| Green Ext Time (p_c), s | 0.0 | 6.8 | 0.1 | 0.5 | 0.4 | 7.0 | 0.0 | 0.7 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 17.8 |
| HCM 6th LOS | B |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 111 | 0 | 21 | 2 | 0 | 19 | 18 | 996 | 6 | 17 | 1048 | 120 |
| Future Volume (veh/h) | 111 | 0 | 21 | 2 | 0 | 19 | 18 | 996 | 6 | 17 | 1048 | 120 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 116 | 0 | 22 | 2 | 0 | 20 | 19 | 1038 | 6 | 18 | 1092 | 125 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 329 | 0 | 195 | 207 | 0 | 72 | 282 | 1658 | 10 | 311 | 1622 | 863 |
| Arrive On Green | 0.08 | 0.00 | 0.12 | 0.00 | 0.00 | 0.05 | 0.02 | 0.46 | 0.46 | 0.02 | 0.46 | 0.46 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 3565 | 21 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 116 | 0 | 22 | 2 | 0 | 20 | 19 | 509 | 535 | 18 | 1092 | 125 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 1749 | 1837 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 3.1 | 0.0 | 0.6 | 0.1 | 0.0 | 0.6 | 0.3 | 11.3 | 11.3 | 0.3 | 12.6 | 2.0 |
| Cycle Q Clear(g_c), s | 3.1 | 0.0 | 0.6 | 0.1 | 0.0 | 0.6 | 0.3 | 11.3 | 11.3 | 0.3 | 12.6 | 2.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.01 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 329 | 0 | 195 | 207 | 0 | 72 | 282 | 813 | 854 | 311 | 1622 | 863 |
| V/C Ratio(X) | 0.35 | 0.00 | 0.11 | 0.01 | 0.00 | 0.28 | 0.07 | 0.63 | 0.63 | 0.06 | 0.67 | 0.14 |
| Avail Cap(c_a), veh/h | 427 | 0 | 1044 | 375 | 0 | 982 | 413 | 1727 | 1814 | 444 | 3454 | 1693 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 20.2 | 0.0 | 20.1 | 23.4 | 0.0 | 23.8 | 8.5 | 10.4 | 10.4 | 8.2 | 10.8 | 5.8 |
| Incr Delay (d2), s/veh | 0.6 | 0.0 | 0.3 | 0.0 | 0.0 | 2.1 | 0.1 | 0.8 | 0.8 | 0.1 | 0.5 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.2 | 0.0 | 0.2 | 0.0 | 0.0 | 0.3 | 0.1 | 3.1 | 3.3 | 0.1 | 3.4 | 0.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 20.9 | 0.0 | 20.4 | 23.4 | 0.0 | 25.9 | 8.6 | 11.2 | 11.2 | 8.2 | 11.3 | 5.9 |
| LnGrp LOS | C | A | C | C | A | C | A | B | B | A | B | A |
| Approach Vol, veh/h | | 138 | | | 22 | | | 1063 | | | 1235 | |
| Approach Delay, s/veh | | 20.8 | | | 25.7 | | | 11.2 | | | 10.7 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.1 | 29.0 | 5.1 | 11.4 | 6.2 | 29.0 | 9.2 | 7.3 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 51.0 | 5.0 | 34.0 | 5.0 | 51.0 | 7.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 13.3 | 2.1 | 2.6 | 2.3 | 14.6 | 5.1 | 2.6 |
| Green Ext Time (p_c), s | 0.0 | 7.2 | 0.0 | 0.1 | 0.0 | 9.4 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.6 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 18.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 100 | 0 | 9 | 7 | 0 | 5 | 10 | 915 | 8 | 5 | 944 | 92 |
| Future Vol, veh/h | 100 | 0 | 9 | 7 | 0 | 5 | 10 | 915 | 8 | 5 | 944 | 92 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 105 | 0 | 9 | 7 | 0 | 5 | 11 | 963 | 8 | 5 | 994 | 97 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1557 | 2046 | 546 | 1496 | 2090 | 486 | 1091 | 0 | 0 | 971 | 0 | 0 |
| Stage 1 | 1053 | 1053 | - | 989 | 989 | - | - | - | - | - | - | - |
| Stage 2 | 504 | 993 | - | 507 | 1101 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 76 | 55 | 482 | 85 | 52 | 527 | 635 | - | - | 706 | - | - |
| Stage 1 | 242 | 301 | - | 265 | 323 | - | - | - | - | - | - | - |
| Stage 2 | 518 | 322 | - | 516 | 286 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 74 | 54 | 482 | 82 | 51 | 527 | 635 | - | - | 706 | - | - |
| Mov Cap-2 Maneuver | ~ 74 | 54 | - | 82 | 51 | - | - | - | - | - | - | - |
| Stage 1 | 238 | 299 | - | 260 | 318 | - | - | - | - | - | - | - |
| Stage 2 | 504 | 317 | - | 502 | 284 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | $ 344.1 | 36.5 | 0.1 | 0 |
| HCM LOS | F | E | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 635 | - | - | 80 | 127 | 706 | - | - |
| HCM Lane V/C Ratio | 0.017 | - | - | 1.434 | 0.099 | 0.007 | - | - |
| HCM Control Delay (s) | 10.8 | - | - | $ 344.1 | 36.5 | 10.1 | - | - |
| HCM Lane LOS | B | - | - | F | E | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 9.1 | 0.3 | 0 | - | - |

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

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 27 | 6 | 24 | 20 | 3 | 26 | 29 | 860 | 17 | 31 | 920 | 33 |
| Future Vol, veh/h | 27 | 6 | 24 | 20 | 3 | 26 | 29 | 860 | 17 | 31 | 920 | 33 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 | 95 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 28 | 6 | 25 | 21 | 3 | 27 | 31 | 905 | 18 | 33 | 968 | 35 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1568 | 2037 | 502 | 1529 | 2045 | 462 | 1003 | 0 | 0 | 923 | 0 | 0 |
| Stage 1 | 1052 | 1052 | - | 976 | 976 | - | - | - | - | - | - | - |
| Stage 2 | 516 | 985 | - | 553 | 1069 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 75 | 56 | 515 | 80 | 55 | 547 | 686 | - | - | 736 | - | - |
| Stage 1 | 242 | 302 | - | 270 | 327 | - | - | - | - | - | - | - |
| Stage 2 | 510 | 324 | - | 485 | 296 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 63 | 51 | 515 | 64 | 50 | 547 | 686 | - | - | 736 | - | - |
| Mov Cap-2 Maneuver | 63 | 51 | - | 64 | 50 | - | - | - | - | - | - | - |
| Stage 1 | 231 | 288 | - | 258 | 312 | - | - | - | - | - | - | - |
| Stage 2 | 458 | 309 | - | 431 | 283 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 91 | 58.1 | 0.3 | 0.3 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 686 | - | - | 96 | 117 | 736 | - | - |
| HCM Lane V/C Ratio | 0.044 | - | - | 0.625 | 0.441 | 0.044 | - | - |
| HCM Control Delay (s) | 10.5 | - | - | 91 | 58.1 | 10.1 | - | - |
| HCM Lane LOS | B | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 3 | 1.9 | 0.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 22 | 29 | 989 | 23 | 28 | 1031 |
| Future Vol, veh/h | 22 | 29 | 989 | 23 | 28 | 1031 |
| 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 | - | - | - | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 24 | 32 | 1075 | 25 | 30 | 1121 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1709 | 550 | 0 | 0 | 1100 | 0 |
| Stage 1 | 1088 | - | - | - | - | - |
| Stage 2 | 621 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | 82 | 479 | - | - | 630 | - |
| Stage 1 | 284 | - | - | - | - | - |
| Stage 2 | 498 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 78 | 479 | - | - | 630 | - |
| Mov Cap-2 Maneuver | 195 | - | - | - | - | - |
| Stage 1 | 284 | - | - | - | - | - |
| Stage 2 | 474 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 20.1 | 0 | 0.3 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 294 | 630 | - |
| HCM Lane V/C Ratio | - | - | 0.189 | 0.048 | - |
| HCM Control Delay (s) | - | - | 20.1 | 11 | - |
| HCM Lane LOS | - | - | C | B | - |
| HCM 95th %tile Q(veh) | - | - | 0.7 | 0.2 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 10.9 |

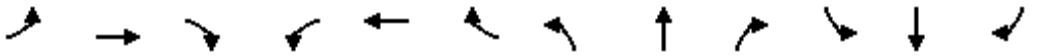
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 114 | 116 | 896 | 124 | 126 | 927 |
| Future Vol, veh/h | 114 | 116 | 896 | 124 | 126 | 927 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 124 | 126 | 974 | 135 | 137 | 1008 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1820 | 555 | 0 | 0 | 1109 | 0 |
| Stage 1 | 1042 | - | - | - | - | - |
| Stage 2 | 778 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | ~ 69 | 475 | - | - | 625 | - |
| Stage 1 | 301 | - | - | - | - | - |
| Stage 2 | 413 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 54 | 475 | - | - | 625 | - |
| Mov Cap-2 Maneuver | 167 | - | - | - | - | - |
| Stage 1 | 301 | - | - | - | - | - |
| Stage 2 | 323 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 102.5 | 0 | 1.5 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 248 | 625 | - |
| HCM Lane V/C Ratio | - | - | 1.008 | 0.219 | - |
| HCM Control Delay (s) | - | - | 102.5 | 12.4 | - |
| HCM Lane LOS | - | - | F | B | - |
| HCM 95th %tile Q(veh) | - | - | 9.8 | 0.8 | - |

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 265 | 209 | 252 | 226 | 232 | 71 | 306 | 1028 | 137 | 56 | 1000 | 188 |
| Future Volume (veh/h) | 265 | 209 | 252 | 226 | 232 | 71 | 306 | 1028 | 137 | 56 | 1000 | 188 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 288 | 227 | 0 | 246 | 252 | 77 | 333 | 1117 | 0 | 61 | 1087 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 333 | 472 | | 391 | 277 | 85 | 359 | 1604 | | 226 | 1178 | |
| Arrive On Green | 0.14 | 0.25 | 0.00 | 0.09 | 0.20 | 0.20 | 0.16 | 0.46 | 0.00 | 0.04 | 0.34 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1375 | 420 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 288 | 227 | 0 | 246 | 0 | 329 | 333 | 1117 | 0 | 61 | 1087 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1795 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 15.1 | 12.6 | 0.0 | 11.0 | 0.0 | 21.9 | 17.1 | 31.1 | 0.0 | 2.7 | 36.6 | 0.0 |
| Cycle Q Clear(g_c), s | 15.1 | 12.6 | 0.0 | 11.0 | 0.0 | 21.9 | 17.1 | 31.1 | 0.0 | 2.7 | 36.6 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.23 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 333 | 472 | | 391 | 0 | 361 | 359 | 1604 | | 226 | 1178 | |
| V/C Ratio(X) | 0.87 | 0.48 | | 0.63 | 0.00 | 0.91 | 0.93 | 0.70 | | 0.27 | 0.92 | |
| Avail Cap(c_a), veh/h | 344 | 535 | | 391 | 0 | 411 | 384 | 1659 | | 249 | 1230 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 32.8 | 38.9 | 0.0 | 37.2 | 0.0 | 47.8 | 34.3 | 26.3 | 0.0 | 26.1 | 39.0 | 0.0 |
| Incr Delay (d2), s/veh | 19.6 | 0.8 | 0.0 | 3.2 | 0.0 | 22.4 | 27.4 | 1.2 | 0.0 | 0.6 | 11.3 | 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(50%),veh/ln | 8.2 | 5.9 | 0.0 | 1.5 | 0.0 | 11.9 | 12.4 | 12.5 | 0.0 | 1.2 | 16.8 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 52.4 | 39.7 | 0.0 | 40.4 | 0.0 | 70.2 | 61.8 | 27.6 | 0.0 | 26.8 | 50.3 | 0.0 |
| LnGrp LOS | D | D | | D | A | E | E | C | | C | D | |
| Approach Vol, veh/h | | 515 | | | 575 | | | 1450 | | | 1148 | |
| Approach Delay, s/veh | | 46.8 | | | 57.4 | | | 35.4 | | | 49.1 | |
| Approach LOS | | D | | | E | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 9.4 | 61.1 | 16.0 | 35.8 | 24.3 | 46.2 | 22.2 | 29.6 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 6.0 | 58.0 | 11.0 | 35.0 | 21.0 | 43.0 | 18.0 | 28.0 |
| Max Q Clear Time (g_c+I1), s | 4.7 | 33.1 | 13.0 | 14.6 | 19.1 | 38.6 | 17.1 | 23.9 |
| Green Ext Time (p_c), s | 0.0 | 8.2 | 0.0 | 1.1 | 0.2 | 2.6 | 0.1 | 0.7 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 44.7 |
| HCM 6th LOS | D |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 175 | 0 | 32 | 2 | 2 | 38 | 20 | 1190 | 0 | 29 | 1166 | 161 |
| Future Volume (veh/h) | 175 | 0 | 32 | 2 | 2 | 38 | 20 | 1190 | 0 | 29 | 1166 | 161 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 190 | 0 | 35 | 2 | 2 | 41 | 22 | 1293 | 0 | 32 | 1267 | 175 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 347 | 0 | 260 | 196 | 4 | 89 | 236 | 1720 | 0 | 254 | 1750 | 964 |
| Arrive On Green | 0.11 | 0.00 | 0.16 | 0.00 | 0.06 | 0.06 | 0.03 | 0.49 | 0.00 | 0.03 | 0.50 | 0.50 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | 1781 | 74 | 1522 | 1781 | 3589 | 0 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 190 | 0 | 35 | 2 | 0 | 43 | 22 | 1293 | 0 | 32 | 1267 | 175 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | 1781 | 0 | 1596 | 1781 | 1749 | 0 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 6.2 | 0.0 | 1.2 | 0.1 | 0.0 | 1.7 | 0.4 | 19.4 | 0.0 | 0.6 | 18.4 | 3.2 |
| Cycle Q Clear(g_c), s | 6.2 | 0.0 | 1.2 | 0.1 | 0.0 | 1.7 | 0.4 | 19.4 | 0.0 | 0.6 | 18.4 | 3.2 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.95 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 347 | 0 | 260 | 196 | 0 | 94 | 236 | 1720 | 0 | 254 | 1750 | 964 |
| V/C Ratio(X) | 0.55 | 0.00 | 0.13 | 0.01 | 0.00 | 0.46 | 0.09 | 0.75 | 0.00 | 0.13 | 0.72 | 0.18 |
| Avail Cap(c_a), veh/h | 347 | 0 | 830 | 329 | 0 | 786 | 328 | 2746 | 0 | 331 | 2746 | 1415 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 23.5 | 0.0 | 23.2 | 28.6 | 0.0 | 29.6 | 10.3 | 13.3 | 0.0 | 10.6 | 12.7 | 5.6 |
| Incr Delay (d2), s/veh | 1.8 | 0.0 | 0.2 | 0.0 | 0.0 | 3.5 | 0.2 | 0.7 | 0.0 | 0.2 | 0.6 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.7 | 0.0 | 0.5 | 0.0 | 0.0 | 0.7 | 0.1 | 5.9 | 0.0 | 0.2 | 5.5 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 25.3 | 0.0 | 23.5 | 28.7 | 0.0 | 33.0 | 10.5 | 14.0 | 0.0 | 10.8 | 13.3 | 5.7 |
| LnGrp LOS | C | A | C | C | A | C | B | B | A | B | B | A |
| Approach Vol, veh/h | | 225 | | | 45 | | | 1315 | | | 1474 | |
| Approach Delay, s/veh | | 25.0 | | | 32.8 | | | 13.9 | | | 12.3 | |
| Approach LOS | | C | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.2 | 36.9 | 5.2 | 15.6 | 6.6 | 37.5 | 12.0 | 8.8 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 51.0 | 5.0 | 34.0 | 5.0 | 51.0 | 7.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.6 | 21.4 | 2.1 | 3.2 | 2.4 | 20.4 | 8.2 | 3.7 |
| Green Ext Time (p_c), s | 0.0 | 10.6 | 0.0 | 0.2 | 0.0 | 11.2 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 14.3 |
| HCM 6th LOS | B |

| 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 | 6 | 0 | 0 | 3 | 0 | 2 | 2 | 1309 | 3 | 2 | 1120 | 44 |
| Future Vol, veh/h | 6 | 0 | 0 | 3 | 0 | 2 | 2 | 1309 | 3 | 2 | 1120 | 44 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| 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 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 7 | 0 | 0 | 3 | 0 | 2 | 2 | 1423 | 3 | 2 | 1217 | 48 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 1961 | 2675 | 633 | 2042 | 2698 | 713 | 1265 | 0 | 0 | 1426 | 0 | 0 |
| Stage 1 | 1245 | 1245 | - | 1429 | 1429 | - | - | - | - | - | - | - |
| Stage 2 | 716 | 1430 | - | 613 | 1269 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 38 | 22 | 422 | 33 | 21 | 374 | 545 | - | - | 473 | - | - |
| Stage 1 | 184 | 244 | - | 142 | 199 | - | - | - | - | - | - | - |
| Stage 2 | 387 | 199 | - | 446 | 238 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 38 | 22 | 422 | 33 | 21 | 374 | 545 | - | - | 473 | - | - |
| Mov Cap-2 Maneuver | 38 | 22 | - | 33 | 21 | - | - | - | - | - | - | - |
| Stage 1 | 183 | 243 | - | 141 | 198 | - | - | - | - | - | - | - |
| Stage 2 | 383 | 198 | - | 444 | 237 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 118.4 | 82.2 | 0 | 0 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 545 | - | - | 38 | 52 | 473 | - | - |
| HCM Lane V/C Ratio | 0.004 | - | - | 0.172 | 0.105 | 0.005 | - | - |
| HCM Control Delay (s) | 11.6 | - | - | 118.4 | 82.2 | 12.6 | - | - |
| HCM Lane LOS | B | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0 | - | - | 0.5 | 0.3 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 181.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 5 | 8 | 50 | 38 | 21 | 43 | 136 | 1245 | 63 | 24 | 1029 | 16 |
| Future Vol, veh/h | 5 | 8 | 50 | 38 | 21 | 43 | 136 | 1245 | 63 | 24 | 1029 | 16 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| 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 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 5 | 9 | 54 | 41 | 23 | 47 | 148 | 1353 | 68 | 26 | 1118 | 17 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2163 | 2896 | 568 | 2299 | 2870 | 711 | 1135 | 0 | 0 | 1421 | 0 | 0 |
| Stage 1 | 1179 | 1179 | - | 1683 | 1683 | - | - | - | - | - | - | - |
| Stage 2 | 984 | 1717 | - | 616 | 1187 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | 27 | 16 | 466 | ~ 21 | ~ 16 | 375 | 611 | - | - | 475 | - | - |
| Stage 1 | 202 | 262 | - | 98 | 149 | - | - | - | - | - | - | - |
| Stage 2 | 267 | 143 | - | 445 | 260 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | 11 | 466 | ~ 5 | ~ 11 | 375 | 611 | - | - | 475 | - | - |
| Mov Cap-2 Maneuver | - | 11 | - | ~ 5 | ~ 11 | - | - | - | - | - | - | - |
| Stage 1 | 153 | 248 | - | 74 | 113 | - | - | - | - | - | - | - |
| Stage 2 | 141 | 108 | - | 359 | 246 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | | $ 4753.6 | 1.2 | 0.3 |
| HCM LOS | - | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 611 | - | - | - | 11 | 475 | - | - |
| HCM Lane V/C Ratio | 0.242 | - | - | - | 10.079 | 0.055 | - | - |
| HCM Control Delay (s) | 12.8 | - | - | - | $ 4753.6 | 13 | - | - |
| HCM Lane LOS | B | - | - | - | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.9 | - | - | - | 15.2 | 0.2 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 19 | 22 | 1283 | 19 | 22 | 1164 |
| Future Vol, veh/h | 19 | 22 | 1283 | 19 | 22 | 1164 |
| 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 | - | - | - | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 21 | 24 | 1395 | 21 | 24 | 1265 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2087 | 708 | 0 | 0 | 1416 | 0 |
| Stage 1 | 1406 | - | - | - | - | - |
| Stage 2 | 681 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | 45 | 377 | - | - | 477 | - |
| Stage 1 | 192 | - | - | - | - | - |
| Stage 2 | 464 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 43 | 377 | - | - | 477 | - |
| Mov Cap-2 Maneuver | 138 | - | - | - | - | - |
| Stage 1 | 192 | - | - | - | - | - |
| Stage 2 | 441 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 26.8 | 0 | 0.2 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 209 | 477 | - |
| HCM Lane V/C Ratio | - | - | 0.213 | 0.05 | - |
| HCM Control Delay (s) | - | - | 26.8 | 12.9 | - |
| HCM Lane LOS | - | - | D | B | - |
| HCM 95th %tile Q(veh) | - | - | 0.8 | 0.2 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.5 |

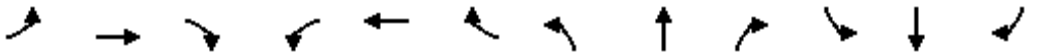
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 39 | 40 | 1262 | 55 | 56 | 1127 |
| Future Vol, veh/h | 39 | 40 | 1262 | 55 | 56 | 1127 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 42 | 43 | 1372 | 60 | 61 | 1225 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2137 | 716 | 0 | 0 | 1432 | 0 |
| Stage 1 | 1402 | - | - | - | - | - |
| Stage 2 | 735 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | ~ 42 | 373 | - | - | 470 | - |
| Stage 1 | 193 | - | - | - | - | - |
| Stage 2 | 435 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 37 | 373 | - | - | 470 | - |
| Mov Cap-2 Maneuver | 131 | - | - | - | - | - |
| Stage 1 | 193 | - | - | - | - | - |
| Stage 2 | 378 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 37.2 | 0 | 0.7 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 195 | 470 | - |
| HCM Lane V/C Ratio | - | - | 0.44 | 0.13 | - |
| HCM Control Delay (s) | - | - | 37.2 | 13.8 | - |
| HCM Lane LOS | - | - | E | B | - |
| HCM 95th %tile Q(veh) | - | - | 2.1 | 0.4 | - |

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 374 | 284 | 424 | 346 | 211 | 61 | 345 | 1486 | 321 | 65 | 1587 | 294 |
| Future Volume (veh/h) | 374 | 284 | 424 | 346 | 211 | 61 | 345 | 1486 | 321 | 65 | 1587 | 294 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 407 | 309 | 0 | 376 | 229 | 66 | 375 | 1615 | 0 | 71 | 1725 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 325 | 432 | | 299 | 255 | 74 | 257 | 1693 | | 136 | 1429 | |
| Arrive On Green | 0.14 | 0.23 | 0.00 | 0.09 | 0.18 | 0.18 | 0.11 | 0.48 | 0.00 | 0.04 | 0.41 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1396 | 402 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 407 | 309 | 0 | 376 | 0 | 295 | 375 | 1615 | 0 | 71 | 1725 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1798 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 17.0 | 19.0 | 0.0 | 11.0 | 0.0 | 20.0 | 14.0 | 55.3 | 0.0 | 2.9 | 51.0 | 0.0 |
| Cycle Q Clear(g_c), s | 17.0 | 19.0 | 0.0 | 11.0 | 0.0 | 20.0 | 14.0 | 55.3 | 0.0 | 2.9 | 51.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.22 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 325 | 432 | | 299 | 0 | 329 | 257 | 1693 | | 136 | 1429 | |
| V/C Ratio(X) | 1.25 | 0.72 | | 1.26 | 0.00 | 0.90 | 1.46 | 0.95 | | 0.52 | 1.21 | |
| Avail Cap(c_a), veh/h | 325 | 509 | | 299 | 0 | 403 | 257 | 1693 | | 142 | 1429 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 37.4 | 44.2 | 0.0 | 46.2 | 0.0 | 49.9 | 40.9 | 30.9 | 0.0 | 30.0 | 36.9 | 0.0 |
| Incr Delay (d2), s/veh | 136.9 | 3.9 | 0.0 | 140.3 | 0.0 | 19.5 | 225.8 | 12.7 | 0.0 | 3.1 | 100.1 | 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(50%),veh/ln | 20.3 | 9.2 | 0.0 | 15.6 | 0.0 | 10.7 | 19.9 | 24.5 | 0.0 | 1.3 | 40.3 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 174.3 | 48.1 | 0.0 | 186.4 | 0.0 | 69.3 | 266.7 | 43.6 | 0.0 | 33.0 | 137.0 | 0.0 |
| LnGrp LOS | F | D | | F | A | E | F | D | | C | F | |
| Approach Vol, veh/h | | 716 | | | 671 | | | 1990 | | | 1796 | |
| Approach Delay, s/veh | | 119.9 | | | 134.9 | | | 85.6 | | | 132.9 | |
| Approach LOS | | F | | | F | | | F | | | F | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 9.6 | 65.4 | 16.0 | 33.8 | 19.0 | 56.0 | 22.0 | 27.8 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 60.0 | 11.0 | 34.0 | 14.0 | 51.0 | 17.0 | 28.0 |
| Max Q Clear Time (g_c+I1), s | 4.9 | 57.3 | 13.0 | 21.0 | 16.0 | 53.0 | 19.0 | 22.0 |
| Green Ext Time (p_c), s | 0.0 | 2.2 | 0.0 | 1.4 | 0.0 | 0.0 | 0.0 | 0.8 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 113.2 |
| HCM 6th LOS | F |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 211 | 0 | 26 | 2 | 0 | 27 | 39 | 1781 | 6 | 29 | 1854 | 238 |
| Future Volume (veh/h) | 211 | 0 | 26 | 2 | 0 | 27 | 39 | 1781 | 6 | 29 | 1854 | 238 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 229 | 0 | 28 | 2 | 0 | 29 | 42 | 1936 | 7 | 32 | 2015 | 259 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 333 | 0 | 261 | 138 | 0 | 66 | 143 | 2118 | 8 | 154 | 2055 | 1131 |
| Arrive On Green | 0.13 | 0.00 | 0.16 | 0.00 | 0.00 | 0.04 | 0.04 | 0.59 | 0.59 | 0.03 | 0.59 | 0.59 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 3574 | 13 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 229 | 0 | 28 | 2 | 0 | 29 | 42 | 947 | 996 | 32 | 2015 | 259 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 1749 | 1838 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 11.4 | 0.0 | 1.4 | 0.1 | 0.0 | 1.7 | 0.9 | 45.8 | 45.9 | 0.7 | 53.4 | 5.3 |
| Cycle Q Clear(g_c), s | 11.4 | 0.0 | 1.4 | 0.1 | 0.0 | 1.7 | 0.9 | 45.8 | 45.9 | 0.7 | 53.4 | 5.3 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.01 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 333 | 0 | 261 | 138 | 0 | 66 | 143 | 1036 | 1090 | 154 | 2055 | 1131 |
| V/C Ratio(X) | 0.69 | 0.00 | 0.11 | 0.01 | 0.00 | 0.44 | 0.29 | 0.91 | 0.91 | 0.21 | 0.98 | 0.23 |
| Avail Cap(c_a), veh/h | 333 | 0 | 649 | 226 | 0 | 532 | 173 | 1036 | 1090 | 194 | 2056 | 1131 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.1 | 0.0 | 33.8 | 43.6 | 0.0 | 44.6 | 23.3 | 17.2 | 17.3 | 19.7 | 19.1 | 4.7 |
| Incr Delay (d2), s/veh | 5.9 | 0.0 | 0.2 | 0.0 | 0.0 | 4.6 | 1.1 | 12.1 | 11.7 | 0.7 | 15.5 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 5.5 | 0.0 | 0.6 | 0.0 | 0.0 | 0.8 | 0.5 | 18.4 | 19.3 | 0.4 | 22.0 | 1.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 42.0 | 0.0 | 34.0 | 43.6 | 0.0 | 49.2 | 24.4 | 29.3 | 29.0 | 20.4 | 34.6 | 4.8 |
| LnGrp LOS | D | A | C | D | A | D | C | C | C | C | C | A |
| Approach Vol, veh/h | | 257 | | | 31 | | | 1985 | | | 2306 | |
| Approach Delay, s/veh | | 41.1 | | | 48.8 | | | 29.0 | | | 31.1 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.9 | 61.5 | 5.3 | 20.7 | 8.4 | 61.0 | 17.0 | 9.0 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 56.0 | 5.0 | 39.0 | 5.0 | 56.0 | 12.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.7 | 47.9 | 2.1 | 3.4 | 2.9 | 55.4 | 13.4 | 3.7 |
| Green Ext Time (p_c), s | 0.0 | 6.6 | 0.0 | 0.1 | 0.0 | 0.5 | 0.0 | 0.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 30.9 |
| HCM 6th LOS | C |

**Notes**

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 277.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 106 | 0 | 19 | 7 | 0 | 4 | 12 | 1613 | 6 | 4 | 1768 | 132 |
| Future Vol, veh/h | 106 | 0 | 19 | 7 | 0 | 4 | 12 | 1613 | 6 | 4 | 1768 | 132 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| 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 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 115 | 0 | 21 | 8 | 0 | 4 | 13 | 1753 | 7 | 4 | 1922 | 143 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2905 | 3788 | 1033 | 2752 | 3856 | 880 | 2065 | 0 | 0 | 1760 | 0 | 0 |
| Stage 1 | 2002 | 2002 | - | 1783 | 1783 | - | - | - | - | - | - | - |
| Stage 2 | 903 | 1786 | - | 969 | 2073 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 7 | 4 | 230 | 9 | 4 | 290 | 267 | - | - | 351 | - | - |
| Stage 1 | ~ 61 | 103 | - | 85 | 133 | - | - | - | - | - | - | - |
| Stage 2 | 299 | 132 | - | 272 | 95 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 7 | 4 | 230 | 8 | 4 | 290 | 267 | - | - | 351 | - | - |
| Mov Cap-2 Maneuver | ~ 7 | 4 | - | 8 | 4 | - | - | - | - | - | - | - |
| Stage 1 | ~ 58 | 102 | - | 81 | 126 | - | - | - | - | - | - | - |
| Stage 2 | 280 | 126 | - | 245 | 94 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, $ | 8097.7 | $ 670.9 | 0.1 | 0 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 267 | - | - | 8 | 12 | 351 | - | - |
| HCM Lane V/C Ratio | 0.049 | - | - | 16.984 | 0.996 | 0.012 | - | - |
| HCM Control Delay (s) | 19.2 | - | - | $ 8097.7 | $ 670.9 | 15.4 | - | - |
| HCM Lane LOS | C | - | - | F | F | C | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 18.7 | 2.1 | 0 | - | - |

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

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 24 | 12 | 119 | 54 | 21 | 39 | 73 | 1550 | 50 | 59 | 1788 | 51 |
| Future Vol, veh/h | 24 | 12 | 119 | 54 | 21 | 39 | 73 | 1550 | 50 | 59 | 1788 | 51 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| 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 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 26 | 13 | 129 | 59 | 23 | 42 | 79 | 1685 | 54 | 64 | 1943 | 55 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 3111 | 3996 | 999 | 2976 | 3996 | 870 | 1998 | 0 | 0 | 1739 | 0 | 0 |
| Stage 1 | 2099 | 2099 | - | 1870 | 1870 | - | - | - | - | - | - | - |
| Stage 2 | 1012 | 1897 | - | 1106 | 2126 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 5 | ~ 3 | 242 | ~ 6 | ~ 3 | 295 | 283 | - | - | 358 | - | - |
| Stage 1 | 53 | 92 | - | 75 | 120 | - | - | - | - | - | - | - |
| Stage 2 | 256 | 116 | - | 224 | 89 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | ~ 2 | 242 | - | ~ 2 | 295 | 283 | - | - | 358 | - | - |
| Mov Cap-2 Maneuver | - | ~ 2 | - | - | ~ 2 | - | - | - | - | - | - | - |
| Stage 1 | 38 | 76 | - | ~ 54 | 87 | - | - | - | - | - | - | - |
| Stage 2 | 117 | 84 | - | 71 | 73 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | | | 1 | 0.5 |
| HCM LOS | - | - | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 283 | - | - | - | - | 358 | - | - |
| HCM Lane V/C Ratio | 0.28 | - | - | - | - | 0.179 | - | - |
| HCM Control Delay (s) | 22.6 | - | - | - | - | 17.2 | - | - |
| HCM Lane LOS | C | - | - | - | - | C | - | - |
| HCM 95th %tile Q(veh) | 1.1 | - | - | - | - | 0.6 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 25 | 30 | 1705 | 25 | 31 | 1877 |
| Future Vol, veh/h | 25 | 30 | 1705 | 25 | 31 | 1877 |
| 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 | - | - | - | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 27 | 33 | 1853 | 27 | 34 | 2040 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2955 | 940 | 0 | 0 | 1880 | 0 |
| Stage 1 | 1867 | - | - | - | - | - |
| Stage 2 | 1088 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | ~ 11 | 265 | - | - | 315 | - |
| Stage 1 | 108 | - | - | - | - | - |
| Stage 2 | 284 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 10 | 265 | - | - | 315 | - |
| Mov Cap-2 Maneuver | 73 | - | - | - | - | - |
| Stage 1 | 108 | - | - | - | - | - |
| Stage 2 | 253 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 60.8 | 0 | 0.3 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 121 | 315 | - |
| HCM Lane V/C Ratio | - | - | 0.494 | 0.107 | - |
| HCM Control Delay (s) | - | - | 60.8 | 17.8 | - |
| HCM Lane LOS | - | - | F | C | - |
| HCM 95th %tile Q(veh) | - | - | 2.3 | 0.4 | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 37 |

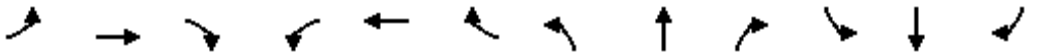
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 106 | 108 | 1622 | 101 | 104 | 1798 |
| Future Vol, veh/h | 106 | 108 | 1622 | 101 | 104 | 1798 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 115 | 117 | 1763 | 110 | 113 | 1954 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3021 | 937 | 0 | 0 | 1873 | 0 |
| Stage 1 | 1818 | - | - | - | - | - |
| Stage 2 | 1203 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | ~ 10 | 266 | - | - | 317 | - |
| Stage 1 | ~ 115 | - | - | - | - | - |
| Stage 2 | 247 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 6 | 266 | - | - | 317 | - |
| Mov Cap-2 Maneuver | ~ 64 | - | - | - | - | - |
| Stage 1 | ~ 115 | - | - | - | - | - |
| Stage 2 | 159 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | $ 652.9 | 0 | 1.2 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 104 | 317 | - |
| HCM Lane V/C Ratio | - | - | 2.237 | 0.357 | - |
| HCM Control Delay (s) | - | - | $ 652.9 | 22.5 | - |
| HCM Lane LOS | - | - | F | C | - |
| HCM 95th %tile Q(veh) | - | - | 20.4 | 1.6 | - |

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 328 | 232 | 347 | 367 | 207 | 88 | 346 | 1536 | 323 | 83 | 1575 | 265 |
| Future Volume (veh/h) | 328 | 232 | 347 | 367 | 207 | 88 | 346 | 1536 | 323 | 83 | 1575 | 265 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 357 | 252 | 0 | 399 | 225 | 96 | 376 | 1670 | 0 | 90 | 1712 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 288 | 458 | | 326 | 246 | 105 | 281 | 1706 | | 133 | 1403 | |
| Arrive On Green | 0.12 | 0.24 | 0.00 | 0.07 | 0.20 | 0.20 | 0.13 | 0.49 | 0.00 | 0.04 | 0.40 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1244 | 531 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 357 | 252 | 0 | 399 | 0 | 321 | 376 | 1670 | 0 | 90 | 1712 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1775 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 15.0 | 14.9 | 0.0 | 9.0 | 0.0 | 22.5 | 16.0 | 59.5 | 0.0 | 3.8 | 51.0 | 0.0 |
| Cycle Q Clear(g_c), s | 15.0 | 14.9 | 0.0 | 9.0 | 0.0 | 22.5 | 16.0 | 59.5 | 0.0 | 3.8 | 51.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.30 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 288 | 458 | | 326 | 0 | 351 | 281 | 1706 | | 133 | 1403 | |
| V/C Ratio(X) | 1.24 | 0.55 | | 1.22 | 0.00 | 0.92 | 1.34 | 0.98 | | 0.68 | 1.22 | |
| Avail Cap(c_a), veh/h | 288 | 500 | | 326 | 0 | 391 | 281 | 1706 | | 133 | 1403 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 38.2 | 41.9 | 0.0 | 48.6 | 0.0 | 50.0 | 42.2 | 31.9 | 0.0 | 31.1 | 38.1 | 0.0 |
| Incr Delay (d2), s/veh | 133.1 | 1.1 | 0.0 | 124.8 | 0.0 | 24.4 | 174.6 | 17.0 | 0.0 | 13.1 | 105.7 | 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(50%),veh/ln | 17.7 | 7.0 | 0.0 | 17.4 | 0.0 | 12.3 | 18.0 | 27.2 | 0.0 | 2.0 | 41.2 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 171.3 | 43.0 | 0.0 | 173.4 | 0.0 | 74.3 | 216.8 | 48.9 | 0.0 | 44.2 | 143.8 | 0.0 |
| LnGrp LOS | F | D | | F | A | E | F | D | | D | F | |
| Approach Vol, veh/h | | 609 | | | 720 | | | 2046 | | | 1802 | |
| Approach Delay, s/veh | | 118.2 | | | 129.2 | | | 79.8 | | | 138.8 | |
| Approach LOS | | F | | | F | | | E | | | F | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.0 | 67.0 | 14.0 | 36.1 | 21.0 | 56.0 | 20.0 | 30.1 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 62.0 | 9.0 | 34.0 | 16.0 | 51.0 | 15.0 | 28.0 |
| Max Q Clear Time (g_c+I1), s | 5.8 | 61.5 | 11.0 | 16.9 | 18.0 | 53.0 | 17.0 | 24.5 |
| Green Ext Time (p_c), s | 0.0 | 0.4 | 0.0 | 1.2 | 0.0 | 0.0 | 0.0 | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 111.7 |
| HCM 6th LOS | F |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 238 | 2 | 49 | 2 | 0 | 40 | 20 | 1738 | 2 | 40 | 1716 | 234 |
| Future Volume (veh/h) | 238 | 2 | 49 | 2 | 0 | 40 | 20 | 1738 | 2 | 40 | 1716 | 234 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 259 | 2 | 53 | 2 | 0 | 43 | 22 | 1889 | 2 | 43 | 1865 | 254 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 293 | 8 | 225 | 163 | 0 | 85 | 151 | 2062 | 2 | 177 | 2060 | 1085 |
| Arrive On Green | 0.10 | 0.15 | 0.15 | 0.00 | 0.00 | 0.05 | 0.02 | 0.58 | 0.58 | 0.04 | 0.59 | 0.59 |
| Sat Flow, veh/h | 1781 | 58 | 1536 | 1781 | 0 | 1585 | 1781 | 3585 | 4 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 259 | 0 | 55 | 2 | 0 | 43 | 22 | 921 | 970 | 43 | 1865 | 254 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1594 | 1781 | 0 | 1585 | 1781 | 1749 | 1840 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 8.0 | 0.0 | 2.6 | 0.1 | 0.0 | 2.2 | 0.4 | 39.7 | 39.8 | 0.8 | 39.4 | 5.1 |
| Cycle Q Clear(g_c), s | 8.0 | 0.0 | 2.6 | 0.1 | 0.0 | 2.2 | 0.4 | 39.7 | 39.8 | 0.8 | 39.4 | 5.1 |
| Prop In Lane | 1.00 | | 0.96 | 1.00 | | 1.00 | 1.00 | | 0.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 293 | 0 | 233 | 163 | 0 | 85 | 151 | 1006 | 1059 | 177 | 2060 | 1085 |
| V/C Ratio(X) | 0.89 | 0.00 | 0.24 | 0.01 | 0.00 | 0.50 | 0.15 | 0.92 | 0.92 | 0.24 | 0.91 | 0.23 |
| Avail Cap(c_a), veh/h | 293 | 0 | 664 | 264 | 0 | 604 | 215 | 1041 | 1095 | 216 | 2081 | 1094 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 35.0 | 0.0 | 31.7 | 37.4 | 0.0 | 38.7 | 16.7 | 16.0 | 16.0 | 17.9 | 15.2 | 5.0 |
| Incr Delay (d2), s/veh | 25.9 | 0.0 | 0.5 | 0.0 | 0.0 | 4.6 | 0.4 | 12.1 | 11.6 | 0.7 | 6.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 8.5 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.2 | 15.7 | 16.4 | 0.4 | 13.8 | 1.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 60.9 | 0.0 | 32.2 | 37.5 | 0.0 | 43.2 | 17.1 | 28.1 | 27.7 | 18.6 | 21.3 | 5.1 |
| LnGrp LOS | E | A | C | D | A | D | B | C | C | B | C | A |
| Approach Vol, veh/h | | 314 | | | 45 | | | 1913 | | | 2162 | |
| Approach Delay, s/veh | | 55.8 | | | 43.0 | | | 27.8 | | | 19.3 | |
| Approach LOS | | E | | | D | | | C | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.2 | 53.3 | 5.2 | 17.3 | 7.0 | 54.5 | 13.0 | 9.5 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 50.0 | 5.0 | 35.0 | 5.0 | 50.0 | 8.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.8 | 41.8 | 2.1 | 4.6 | 2.4 | 41.4 | 10.0 | 4.2 |
| Green Ext Time (p_c), s | 0.0 | 6.6 | 0.0 | 0.3 | 0.0 | 7.1 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 25.8 |
| HCM 6th LOS | C |

**Notes**

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 573.6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 177 | 0 | 25 | 7 | 0 | 5 | 10 | 1662 | 8 | 5 | 1532 | 156 |
| Future Vol, veh/h | 177 | 0 | 25 | 7 | 0 | 5 | 10 | 1662 | 8 | 5 | 1532 | 156 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| 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 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 192 | 0 | 27 | 8 | 0 | 5 | 11 | 1807 | 9 | 5 | 1665 | 170 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2686 | 3598 | 918 | 2677 | 3679 | 908 | 1835 | 0 | 0 | 1816 | 0 | 0 |
| Stage 1 | 1760 | 1760 | - | 1834 | 1834 | - | - | - | - | - | - | - |
| Stage 2 | 926 | 1838 | - | 843 | 1845 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 10 | 5 | 274 | 11 | 5 | 278 | 328 | - | - | 334 | - | - |
| Stage 1 | ~ 88 | 136 | - | 79 | 125 | - | - | - | - | - | - | - |
| Stage 2 | 289 | 125 | - | 325 | 124 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 9 | 5 | 274 | 10 | 5 | 278 | 328 | - | - | 334 | - | - |
| Mov Cap-2 Maneuver | ~ 9 | 5 | - | 10 | 5 | - | - | - | - | - | - | - |
| Stage 1 | ~ 85 | 134 | - | 76 | 121 | - | - | - | - | - | - | - |
| Stage 2 | 274 | 121 | - | 288 | 122 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay | $ 10158.6 | $ 439.8 | 0.1 | 0 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 328 | - | - | 10 | 17 | 334 | - | - |
| HCM Lane V/C Ratio | 0.033 | - | - | 21.957 | 0.767 | 0.016 | - | - |
| HCM Control Delay (s) | 16.4 | - | - | $ 10158.6 | $ 439.8 | 16 | - | - |
| HCM Lane LOS | C | - | - | F | F | C | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 29 | 2 | 0.1 | - | - |

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

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 30 | 29 | 38 | 35 | 13 | 51 | 81 | 1534 | 44 | 62 | 1530 | 53 |
| Future Vol, veh/h | 30 | 29 | 38 | 35 | 13 | 51 | 81 | 1534 | 44 | 62 | 1530 | 53 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| 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 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 33 | 32 | 41 | 38 | 14 | 55 | 88 | 1667 | 48 | 67 | 1663 | 58 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2843 | 3717 | 861 | 2849 | 3722 | 858 | 1721 | 0 | 0 | 1715 | 0 | 0 |
| Stage 1 | 1826 | 1826 | - | 1867 | 1867 | - | - | - | - | - | - | - |
| Stage 2 | 1017 | 1891 | - | 982 | 1855 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 8 | ~ 4 | 299 | ~ 8 | ~ 4 | 300 | 364 | - | - | 366 | - | - |
| Stage 1 | 80 | 126 | - | 75 | 121 | - | - | - | - | - | - | - |
| Stage 2 | 254 | 117 | - | 267 | 122 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | ~ 2 | 299 | - | ~ 2 | 300 | 364 | - | - | 366 | - | - |
| Mov Cap-2 Maneuver | - | ~ 2 | - | - | ~ 2 | - | - | - | - | - | - | - |
| Stage 1 | 61 | 103 | - | 57 | 92 | - | - | - | - | - | - | - |
| Stage 2 | 133 | 89 | - | 130 | 100 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | | | 0.9 | 0.6 |
| HCM LOS | - | - | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 364 | - | - | - | - | 366 | - | - |
| HCM Lane V/C Ratio | 0.242 | - | - | - | - | 0.184 | - | - |
| HCM Control Delay (s) | 18 | - | - | - | - | 17 | - | - |
| HCM Lane LOS | C | - | - | - | - | C | - | - |
| HCM 95th %tile Q(veh) | 0.9 | - | - | - | - | 0.7 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 25 | 31 | 1812 | 25 | 31 | 1679 |
| Future Vol, veh/h | 25 | 31 | 1812 | 25 | 31 | 1679 |
| 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 | - | - | - | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 27 | 34 | 1970 | 27 | 34 | 1825 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2965 | 999 | 0 | 0 | 1997 | 0 |
| Stage 1 | 1984 | - | - | - | - | - |
| Stage 2 | 981 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | ~ 11 | 242 | - | - | 284 | - |
| Stage 1 | 93 | - | - | - | - | - |
| Stage 2 | 324 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 10 | 242 | - | - | 284 | - |
| Mov Cap-2 Maneuver | 67 | - | - | - | - | - |
| Stage 1 | 93 | - | - | - | - | - |
| Stage 2 | 285 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 70.1 | 0 | 0.4 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 112 | 284 | - |
| HCM Lane V/C Ratio | - | - | 0.543 | 0.119 | - |
| HCM Control Delay (s) | - | - | 70.1 | 19.4 | - |
| HCM Lane LOS | - | - | F | C | - |
| HCM 95th %tile Q(veh) | - | - | 2.6 | 0.4 | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 55.9 |

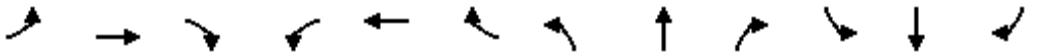
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 114 | 116 | 1721 | 123 | 125 | 1579 |
| Future Vol, veh/h | 114 | 116 | 1721 | 123 | 125 | 1579 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 124 | 126 | 1871 | 134 | 136 | 1716 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 3068 | 1003 | 0 | 0 | 2005 | 0 |
| Stage 1 | 1938 | - | - | - | - | - |
| Stage 2 | 1130 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | ~ 9 | 240 | - | - | 282 | - |
| Stage 1 | ~ 98 | - | - | - | - | - |
| Stage 2 | 270 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 5 | 240 | - | - | 282 | - |
| Mov Cap-2 Maneuver | ~ 55 | - | - | - | - | - |
| Stage 1 | ~ 98 | - | - | - | - | - |
| Stage 2 | 140 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | $ 903.3 | 0 | 2.1 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 90 | 282 | - |
| HCM Lane V/C Ratio | - | - | 2.778 | 0.482 | - |
| HCM Control Delay (s) | - | - | $ 903.3 | 29.1 | - |
| HCM Lane LOS | - | - | F | D | - |
| HCM 95th %tile Q(veh) | - | - | 23.9 | 2.5 | - |

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



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 265 | 171 | 305 | 311 | 140 | 67 | 323 | 1416 | 265 | 40 | 1506 | 217 |
| Future Volume (veh/h) | 265 | 171 | 305 | 311 | 140 | 67 | 323 | 1416 | 265 | 40 | 1506 | 217 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 288 | 186 | 0 | 338 | 152 | 73 | 351 | 1539 | 0 | 43 | 1637 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 281 | 371 | | 296 | 177 | 85 | 313 | 1904 | | 179 | 1519 | |
| Arrive On Green | 0.11 | 0.20 | 0.00 | 0.06 | 0.15 | 0.15 | 0.14 | 0.54 | 0.00 | 0.03 | 0.43 | 0.00 |
| Sat Flow, veh/h | 1781 | 1870 | 1585 | 1781 | 1194 | 573 | 1781 | 3497 | 1585 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 288 | 186 | 0 | 338 | 0 | 225 | 351 | 1539 | 0 | 43 | 1637 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 1870 | 1585 | 1781 | 0 | 1767 | 1781 | 1749 | 1585 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 13.0 | 10.6 | 0.0 | 7.0 | 0.0 | 14.9 | 17.0 | 42.9 | 0.0 | 1.6 | 52.0 | 0.0 |
| Cycle Q Clear(g_c), s | 13.0 | 10.6 | 0.0 | 7.0 | 0.0 | 14.9 | 17.0 | 42.9 | 0.0 | 1.6 | 52.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.32 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 281 | 371 | | 296 | 0 | 262 | 313 | 1904 | | 179 | 1519 | |
| V/C Ratio(X) | 1.02 | 0.50 | | 1.14 | 0.00 | 0.86 | 1.12 | 0.81 | | 0.24 | 1.08 | |
| Avail Cap(c_a), veh/h | 281 | 531 | | 296 | 0 | 413 | 313 | 1904 | | 197 | 1519 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 41.7 | 42.7 | 0.0 | 49.5 | 0.0 | 49.8 | 40.4 | 22.2 | 0.0 | 21.7 | 33.9 | 0.0 |
| Incr Delay (d2), s/veh | 60.0 | 1.0 | 0.0 | 96.5 | 0.0 | 10.3 | 87.8 | 2.7 | 0.0 | 0.7 | 47.3 | 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(50%),veh/ln | 6.7 | 5.0 | 0.0 | 13.4 | 0.0 | 7.2 | 12.3 | 16.6 | 0.0 | 0.7 | 30.4 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 101.6 | 43.8 | 0.0 | 146.0 | 0.0 | 60.0 | 128.1 | 24.9 | 0.0 | 22.4 | 81.1 | 0.0 |
| LnGrp LOS | F | D | | F | A | E | F | C | | C | F | |
| Approach Vol, veh/h | | 474 | | | 563 | | | 1890 | | | 1680 | |
| Approach Delay, s/veh | | 78.9 | | | 111.7 | | | 44.1 | | | 79.6 | |
| Approach LOS | | E | | | F | | | D | | | E | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.8 | 70.2 | 12.0 | 28.8 | 22.0 | 57.0 | 18.0 | 22.8 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 64.0 | 7.0 | 34.0 | 17.0 | 52.0 | 13.0 | 28.0 |
| Max Q Clear Time (g_c+I1), s | 3.6 | 44.9 | 9.0 | 12.6 | 19.0 | 54.0 | 15.0 | 16.9 |
| Green Ext Time (p_c), s | 0.0 | 10.7 | 0.0 | 0.9 | 0.0 | 0.0 | 0.0 | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 68.9 |
| HCM 6th LOS | E |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 190 | 0 | 36 | 4 | 0 | 33 | 30 | 1611 | 10 | 29 | 1692 | 205 |
| Future Volume (veh/h) | 190 | 0 | 36 | 4 | 0 | 33 | 30 | 1611 | 10 | 29 | 1692 | 205 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 207 | 0 | 39 | 4 | 0 | 36 | 33 | 1751 | 11 | 32 | 1839 | 223 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 240 | 0 | 171 | 169 | 0 | 81 | 181 | 2163 | 14 | 207 | 2121 | 1059 |
| Arrive On Green | 0.06 | 0.00 | 0.11 | 0.01 | 0.00 | 0.05 | 0.03 | 0.61 | 0.61 | 0.03 | 0.61 | 0.61 |
| Sat Flow, veh/h | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 3563 | 22 | 1781 | 3497 | 1585 |
| Grp Volume(v), veh/h | 207 | 0 | 39 | 4 | 0 | 36 | 33 | 859 | 903 | 32 | 1839 | 223 |
| Grp Sat Flow(s),veh/h/ln | 1781 | 0 | 1585 | 1781 | 0 | 1585 | 1781 | 1749 | 1837 | 1781 | 1749 | 1585 |
| Q Serve(g_s), s | 5.0 | 0.0 | 1.8 | 0.2 | 0.0 | 1.8 | 0.6 | 30.6 | 30.7 | 0.5 | 35.2 | 4.4 |
| Cycle Q Clear(g_c), s | 5.0 | 0.0 | 1.8 | 0.2 | 0.0 | 1.8 | 0.6 | 30.6 | 30.7 | 0.5 | 35.2 | 4.4 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 0.01 | 1.00 | | 1.00 |
| Lane Grp Cap(c), veh/h | 240 | 0 | 171 | 169 | 0 | 81 | 181 | 1062 | 1115 | 207 | 2121 | 1059 |
| V/C Ratio(X) | 0.86 | 0.00 | 0.23 | 0.02 | 0.00 | 0.44 | 0.18 | 0.81 | 0.81 | 0.15 | 0.87 | 0.21 |
| Avail Cap(c_a), veh/h | 240 | 0 | 628 | 270 | 0 | 628 | 234 | 1148 | 1206 | 261 | 2297 | 1139 |
| 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 | 0.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 35.7 | 0.0 | 32.9 | 36.0 | 0.0 | 37.2 | 14.5 | 12.2 | 12.3 | 12.0 | 13.2 | 5.2 |
| Incr Delay (d2), s/veh | 26.1 | 0.0 | 0.7 | 0.1 | 0.0 | 3.7 | 0.5 | 4.1 | 4.0 | 0.3 | 3.6 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 8.4 | 0.0 | 0.7 | 0.1 | 0.0 | 0.8 | 0.3 | 10.1 | 10.6 | 0.2 | 11.2 | 1.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 61.8 | 0.0 | 33.6 | 36.0 | 0.0 | 40.9 | 15.0 | 16.4 | 16.2 | 12.3 | 16.8 | 5.3 |
| LnGrp LOS | E | A | C | D | A | D | B | B | B | B | B | A |
| Approach Vol, veh/h | | 246 | | | 40 | | | 1795 | | | 2094 | |
| Approach Delay, s/veh | | 57.3 | | | 40.4 | | | 16.3 | | | 15.5 | |
| Approach LOS | | E | | | D | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.6 | 54.0 | 5.4 | 13.7 | 7.6 | 53.9 | 10.0 | 9.1 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.6 | 53.0 | 5.0 | 32.0 | 5.0 | 53.0 | 5.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.5 | 32.7 | 2.2 | 3.8 | 2.6 | 37.2 | 7.0 | 3.8 |
| Green Ext Time (p_c), s | 0.0 | 12.4 | 0.0 | 0.2 | 0.0 | 11.7 | 0.0 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 18.5 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 426.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 171 | 0 | 15 | 7 | 0 | 5 | 17 | 1472 | 8 | 5 | 1529 | 157 |
| Future Vol, veh/h | 171 | 0 | 15 | 7 | 0 | 5 | 17 | 1472 | 8 | 5 | 1529 | 157 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| 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 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 186 | 0 | 16 | 8 | 0 | 5 | 18 | 1600 | 9 | 5 | 1662 | 171 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2594 | 3403 | 917 | 2482 | 3484 | 805 | 1833 | 0 | 0 | 1609 | 0 | 0 |
| Stage 1 | 1758 | 1758 | - | 1641 | 1641 | - | - | - | - | - | - | - |
| Stage 2 | 836 | 1645 | - | 841 | 1843 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 12 | 7 | 274 | 15 | 6 | 325 | 329 | - | - | 402 | - | - |
| Stage 1 | ~ 88 | 137 | - | 104 | 156 | - | - | - | - | - | - | - |
| Stage 2 | 328 | 156 | - | 326 | 124 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | ~ 11 | 7 | 274 | 13 | 6 | 325 | 329 | - | - | 402 | - | - |
| Mov Cap-2 Maneuver | ~ 11 | 7 | - | 13 | 6 | - | - | - | - | - | - | - |
| Stage 1 | ~ 83 | 135 | - | 98 | 147 | - | - | - | - | - | - | - |
| Stage 2 | 305 | 147 | - | 303 | 123 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, $ | 7742.3 | $ 305.2 | 0.2 | 0 |
| HCM LOS | F | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 329 | - | - | 12 | 22 | 402 | - | - |
| HCM Lane V/C Ratio | 0.056 | - | - | 16.848 | 0.593 | 0.014 | - | - |
| HCM Control Delay (s) | 16.6 | - | - | $ 7742.3 | $ 305.2 | 14.1 | - | - |
| HCM Lane LOS | C | - | - | F | F | B | - | - |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 26.6 | 1.7 | 0 | - | - |

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

| 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 | 45 | 10 | 40 | 35 | 6 | 43 | 50 | 1375 | 29 | 53 | 1485 | 57 |
| Future Vol, veh/h | 45 | 10 | 40 | 35 | 6 | 43 | 50 | 1375 | 29 | 53 | 1485 | 57 |
| 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 | - | - | - | - | - | - | 50 | - | - | 50 | - | - |
| 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 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 49 | 11 | 43 | 38 | 7 | 47 | 54 | 1495 | 32 | 58 | 1614 | 62 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2620 | 3396 | 838 | 2548 | 3411 | 764 | 1676 | 0 | 0 | 1527 | 0 | 0 |
| Stage 1 | 1761 | 1761 | - | 1619 | 1619 | - | - | - | - | - | - | - |
| Stage 2 | 859 | 1635 | - | 929 | 1792 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 | 4.14 | - | - | 4.14 | - | - |
| Critical Hdwy Stg 1 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.54 | 5.54 | - | 6.54 | 5.54 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 | 2.22 | - | - | 2.22 | - | - |
| Pot Cap-1 Maneuver | ~ 12 | ~ 7 | 309 | ~ 13 | 7 | 346 | 379 | - | - | 432 | - | - |
| Stage 1 | 87 | 136 | - | 108 | 160 | - | - | - | - | - | - | - |
| Stage 2 | 317 | 157 | - | 288 | 131 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | ~ 5 | 309 | - | ~ 5 | 346 | 379 | - | - | 432 | - | - |
| Mov Cap-2 Maneuver | - | ~ 5 | - | - | ~ 5 | - | - | - | - | - | - | - |
| Stage 1 | 75 | 118 | - | 93 | 137 | - | - | - | - | - | - | - |
| Stage 2 | 224 | 135 | - | 195 | 113 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | | | 0.6 | 0.5 |
| HCM LOS | - | - | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 379 | - | - | - | - | 432 | - | - |
| HCM Lane V/C Ratio | 0.143 | - | - | - | - | 0.133 | - | - |
| HCM Control Delay (s) | 16.1 | - | - | - | - | 14.6 | - | - |
| HCM Lane LOS | C | - | - | - | - | B | - | - |
| HCM 95th %tile Q(veh) | 0.5 | - | - | - | - | 0.5 | - | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.8 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 22 | 29 | 1617 | 23 | 28 | 1681 |
| Future Vol, veh/h | 22 | 29 | 1617 | 23 | 28 | 1681 |
| 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 | - | - | - | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 24 | 32 | 1758 | 25 | 30 | 1827 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2745 | 892 | 0 | 0 | 1783 | 0 |
| Stage 1 | 1771 | - | - | - | - | - |
| Stage 2 | 974 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | ~ 16 | 285 | - | - | 344 | - |
| Stage 1 | 122 | - | - | - | - | - |
| Stage 2 | 327 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 15 | 285 | - | - | 344 | - |
| Mov Cap-2 Maneuver | 85 | - | - | - | - | - |
| Stage 1 | 122 | - | - | - | - | - |
| Stage 2 | 299 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 46.2 | 0 | 0.3 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 141 | 344 | - |
| HCM Lane V/C Ratio | - | - | 0.393 | 0.088 | - |
| HCM Control Delay (s) | - | - | 46.2 | 16.5 | - |
| HCM Lane LOS | - | - | E | C | - |
| HCM 95th %tile Q(veh) | - | - | 1.7 | 0.3 | - |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 42.2 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 114 | 116 | 1524 | 124 | 126 | 1577 |
| Future Vol, veh/h | 114 | 116 | 1524 | 124 | 126 | 1577 |
| 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 | - | - | - | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 124 | 126 | 1657 | 135 | 137 | 1714 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2856 | 896 | 0 | 0 | 1792 | 0 |
| Stage 1 | 1725 | - | - | - | - | - |
| Stage 2 | 1131 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | ~ 13 | 283 | - | - | 341 | - |
| Stage 1 | 129 | - | - | - | - | - |
| Stage 2 | 270 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 8 | 283 | - | - | 341 | - |
| Mov Cap-2 Maneuver | ~ 69 | - | - | - | - | - |
| Stage 1 | 129 | - | - | - | - | - |
| Stage 2 | 161 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | $ 644.7 | 0 | 1.7 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 112 | 341 | - |
| HCM Lane V/C Ratio | - | - | 2.232 | 0.402 | - |
| HCM Control Delay (s) | - | - | $ 644.7 | 22.5 | - |
| HCM Lane LOS | - | - | F | C | - |
| HCM 95th %tile Q(veh) | - | - | 21.6 | 1.9 | - |

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 650 | 0 | 0 | 560 | 23 |
| Future Volume (veh/h) | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 650 | 0 | 0 | 560 | 23 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 677 | 0 | 0 | 583 | 24 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 307 | 0 | 0 | 0 | 8 | 0 | 501 | 2018 | 0 | 588 | 1254 | 52 |
| Arrive On Green | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.58 | 0.00 | 0.00 | 0.37 | 0.37 |
| Sat Flow, veh/h | 1396 | 0 | 0 | 0 | 1870 | 0 | 1781 | 3589 | 0 | 1781 | 3423 | 141 |
| Grp Volume(v), veh/h | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 677 | 0 | 0 | 298 | 309 |
| Grp Sat Flow(s),veh/h/ln | 1396 | 0 | 0 | 0 | 1870 | 0 | 1781 | 1749 | 0 | 1781 | 1749 | 1815 |
| Q Serve(g_s), s | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.4 | 0.0 | 0.0 | 3.1 | 3.1 |
| Cycle Q Clear(g_c), s | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.4 | 0.0 | 0.0 | 3.1 | 3.1 |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.08 |
| Lane Grp Cap(c), veh/h | 307 | 0 | 0 | 0 | 8 | 0 | 501 | 2018 | 0 | 588 | 640 | 665 |
| V/C Ratio(X) | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.34 | 0.00 | 0.00 | 0.46 | 0.47 |
| Avail Cap(c_a), veh/h | 1905 | 0 | 0 | 0 | 2115 | 0 | 1314 | 12159 | 0 | 954 | 5640 | 5855 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 11.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.1 | 2.6 | 0.0 | 0.0 | 5.8 | 5.8 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.5 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 11.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.1 | 2.7 | 0.0 | 0.0 | 6.3 | 6.3 |
| LnGrp LOS | B | A | A | A | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 3 | | | 0 | | | 678 | | | 607 | |
| Approach Delay, s/veh | | 11.9 | | | 0.0 | | | 2.7 | | | 6.3 | |
| Approach LOS | | B | | | | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 0.0 | 18.8 | | 5.1 | 5.0 | 13.7 | | 5.1 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 5.0 | 83.0 | | 27.0 | 11.0 | 77.0 | | 27.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 0.0 | 4.4 | | 2.1 | 2.0 | 5.1 | | 0.0 | | | | |
| Green Ext Time (p_c), s | 0.0 | 4.8 | | 0.0 | 0.0 | 3.6 | | 0.0 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 4.4 |
| HCM 6th LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 2 | 4 | 26 | 20 | 11 | 22 | 71 | 616 | 33 | 12 | 512 | 8 |
| Future Volume (veh/h) | 2 | 4 | 26 | 20 | 11 | 22 | 71 | 616 | 33 | 12 | 512 | 8 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 2 | 4 | 28 | 21 | 12 | 23 | 76 | 655 | 35 | 13 | 545 | 9 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 141 | 19 | 122 | 227 | 31 | 59 | 546 | 1242 | 66 | 445 | 1077 | 18 |
| Arrive On Green | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.08 | 0.37 | 0.37 | 0.02 | 0.31 | 0.31 |
| Sat Flow, veh/h | 82 | 209 | 1362 | 603 | 345 | 661 | 1781 | 3377 | 180 | 1781 | 3521 | 58 |
| Grp Volume(v), veh/h | 34 | 0 | 0 | 56 | 0 | 0 | 76 | 339 | 351 | 13 | 271 | 283 |
| Grp Sat Flow(s),veh/h/ln | 1654 | 0 | 0 | 1608 | 0 | 0 | 1781 | 1749 | 1808 | 1781 | 1749 | 1830 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.8 | 4.3 | 4.3 | 0.1 | 3.6 | 3.6 |
| Cycle Q Clear(g_c), s | 0.5 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.8 | 4.3 | 4.3 | 0.1 | 3.6 | 3.6 |
| Prop In Lane | 0.06 | | 0.82 | 0.37 | | 0.41 | 1.00 | | 0.10 | 1.00 | | 0.03 |
| Lane Grp Cap(c), veh/h | 281 | 0 | 0 | 317 | 0 | 0 | 546 | 643 | 665 | 445 | 535 | 560 |
| V/C Ratio(X) | 0.12 | 0.00 | 0.00 | 0.18 | 0.00 | 0.00 | 0.14 | 0.53 | 0.53 | 0.03 | 0.51 | 0.51 |
| Avail Cap(c_a), veh/h | 2156 | 0 | 0 | 2131 | 0 | 0 | 1341 | 4227 | 4371 | 1039 | 3921 | 4104 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 12.1 | 0.0 | 0.0 | 12.2 | 0.0 | 0.0 | 5.9 | 7.1 | 7.1 | 6.7 | 8.1 | 8.1 |
| Incr Delay (d2), s/veh | 0.2 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.1 | 0.7 | 0.7 | 0.0 | 0.7 | 0.7 |
| 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(50%),veh/ln | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.1 | 0.6 | 0.6 | 0.0 | 0.7 | 0.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 12.3 | 0.0 | 0.0 | 12.5 | 0.0 | 0.0 | 6.0 | 7.7 | 7.7 | 6.7 | 8.9 | 8.8 |
| LnGrp LOS | B | A | A | B | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 34 | | | 56 | | | 766 | | | 567 | |
| Approach Delay, s/veh | | 12.3 | | | 12.5 | | | 7.6 | | | 8.8 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.5 | 15.5 | | 7.6 | 7.3 | 13.7 | | 7.6 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 10.0 | 69.0 | | 36.0 | 15.0 | 64.0 | | 36.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.1 | 6.3 | | 2.5 | 2.8 | 5.6 | | 2.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 4.1 | | 0.1 | 0.1 | 3.1 | | 0.2 | | | | |

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 55 | 0 | 10 | 0 | 0 | 0 | 6 | 783 | 0 | 0 | 861 | 69 |
| Future Volume (veh/h) | 55 | 0 | 10 | 0 | 0 | 0 | 6 | 783 | 0 | 0 | 861 | 69 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 57 | 0 | 10 | 0 | 0 | 0 | 6 | 816 | 0 | 0 | 897 | 72 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 287 | 0 | 15 | 0 | 130 | 0 | 388 | 2194 | 0 | 537 | 1533 | 123 |
| Arrive On Green | 0.07 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.01 | 0.63 | 0.00 | 0.00 | 0.47 | 0.47 |
| Sat Flow, veh/h | 1225 | 0 | 215 | 0 | 1870 | 0 | 1781 | 3589 | 0 | 1781 | 3279 | 263 |
| Grp Volume(v), veh/h | 67 | 0 | 0 | 0 | 0 | 0 | 6 | 816 | 0 | 0 | 478 | 491 |
| Grp Sat Flow(s),veh/h/ln | 1440 | 0 | 0 | 0 | 1870 | 0 | 1781 | 1749 | 0 | 1781 | 1749 | 1793 |
| Q Serve(g_s), s | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 3.7 | 0.0 | 0.0 | 6.6 | 6.6 |
| Cycle Q Clear(g_c), s | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 3.7 | 0.0 | 0.0 | 6.6 | 6.6 |
| Prop In Lane | 0.85 | | 0.15 | 0.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.15 |
| Lane Grp Cap(c), veh/h | 302 | 0 | 0 | 0 | 130 | 0 | 388 | 2194 | 0 | 537 | 818 | 838 |
| V/C Ratio(X) | 0.22 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.37 | 0.00 | 0.00 | 0.59 | 0.59 |
| Avail Cap(c_a), veh/h | 1599 | 0 | 0 | 0 | 1815 | 0 | 751 | 8272 | 0 | 801 | 4030 | 4133 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.7 | 3.0 | 0.0 | 0.0 | 6.4 | 6.4 |
| Incr Delay (d2), s/veh | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.7 | 0.7 |
| 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(50%),veh/ln | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.7 | 3.1 | 0.0 | 0.0 | 7.1 | 7.1 |
| LnGrp LOS | B | A | A | A | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 67 | | | 0 | | | 822 | | | 969 | |
| Approach Delay, s/veh | | 15.3 | | | 0.0 | | | 3.1 | | | 7.1 | |
| Approach LOS | | B | | | | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.0 | 25.7 | | 7.3 | 5.3 | 20.4 | | 7.3 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 5.0 | 78.0 | | 32.0 | 7.0 | 76.0 | | 32.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 10.0 | 5.7 | | 3.5 | 2.1 | 8.6 | | 0.0 | | | | |
| Green Ext Time (p_c), s | 0.0 | 6.1 | | 0.3 | 0.0 | 6.8 | | 0.0 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 5.6 |
| HCM 6th LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 12 | 6 | 62 | 28 | 11 | 20 | 38 | 748 | 26 | 30 | 869 | 26 |
| Future Volume (veh/h) | 12 | 6 | 62 | 28 | 11 | 20 | 38 | 748 | 26 | 30 | 869 | 26 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 12 | 6 | 65 | 29 | 11 | 21 | 40 | 779 | 27 | 31 | 905 | 27 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 133 | 19 | 133 | 218 | 45 | 60 | 419 | 1506 | 52 | 452 | 1484 | 44 |
| Arrive On Green | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.05 | 0.44 | 0.44 | 0.04 | 0.43 | 0.43 |
| Sat Flow, veh/h | 166 | 180 | 1249 | 651 | 419 | 562 | 1781 | 3448 | 119 | 1781 | 3467 | 103 |
| Grp Volume(v), veh/h | 83 | 0 | 0 | 61 | 0 | 0 | 40 | 395 | 411 | 31 | 456 | 476 |
| Grp Sat Flow(s),veh/h/ln | 1594 | 0 | 0 | 1632 | 0 | 0 | 1781 | 1749 | 1819 | 1781 | 1749 | 1822 |
| Q Serve(g_s), s | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 5.9 | 5.9 | 0.3 | 7.2 | 7.2 |
| Cycle Q Clear(g_c), s | 1.7 | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 | 0.4 | 5.9 | 5.9 | 0.3 | 7.2 | 7.2 |
| Prop In Lane | 0.14 | | 0.78 | 0.48 | | 0.34 | 1.00 | | 0.07 | 1.00 | | 0.06 |
| Lane Grp Cap(c), veh/h | 285 | 0 | 0 | 322 | 0 | 0 | 419 | 764 | 794 | 452 | 748 | 780 |
| V/C Ratio(X) | 0.29 | 0.00 | 0.00 | 0.19 | 0.00 | 0.00 | 0.10 | 0.52 | 0.52 | 0.07 | 0.61 | 0.61 |
| Avail Cap(c_a), veh/h | 1654 | 0 | 0 | 1623 | 0 | 0 | 786 | 3573 | 3717 | 735 | 3475 | 3621 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.0 | 0.0 | 0.0 | 14.8 | 0.0 | 0.0 | 5.8 | 7.3 | 7.3 | 5.7 | 7.9 | 7.9 |
| Incr Delay (d2), s/veh | 0.6 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.1 | 0.5 | 0.5 | 0.1 | 0.8 | 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(50%),veh/ln | 0.5 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.1 | 1.0 | 1.1 | 0.1 | 1.3 | 1.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 15.6 | 0.0 | 0.0 | 15.1 | 0.0 | 0.0 | 5.9 | 7.9 | 7.8 | 5.7 | 8.7 | 8.7 |
| LnGrp LOS | B | A | A | B | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 83 | | | 61 | | | 846 | | | 963 | |
| Approach Delay, s/veh | | 15.6 | | | 15.1 | | | 7.8 | | | 8.6 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.3 | 20.6 | | 8.8 | 6.6 | 20.3 | | 8.8 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 7.3 | 73.0 | | 35.0 | 9.0 | 71.0 | | 35.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.3 | 7.9 | | 3.7 | 2.4 | 9.2 | | 3.1 | | | | |
| Green Ext Time (p_c), s | 0.0 | 5.0 | | 0.4 | 0.0 | 6.1 | | 0.3 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 8.7 |
| HCM 6th LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 92 | 0 | 13 | 0 | 0 | 0 | 5 | 797 | 0 | 0 | 734 | 81 |
| Future Volume (veh/h) | 92 | 0 | 13 | 0 | 0 | 0 | 5 | 797 | 0 | 0 | 734 | 81 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 98 | 0 | 14 | 0 | 0 | 0 | 5 | 848 | 0 | 0 | 781 | 86 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 335 | 0 | 18 | 0 | 187 | 0 | 390 | 2064 | 0 | 507 | 1361 | 150 |
| Arrive On Green | 0.10 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 | 0.01 | 0.59 | 0.00 | 0.00 | 0.43 | 0.43 |
| Sat Flow, veh/h | 1257 | 0 | 180 | 0 | 1870 | 0 | 1781 | 3589 | 0 | 1781 | 3177 | 350 |
| Grp Volume(v), veh/h | 112 | 0 | 0 | 0 | 0 | 0 | 5 | 848 | 0 | 0 | 430 | 437 |
| Grp Sat Flow(s),veh/h/ln | 1437 | 0 | 0 | 0 | 1870 | 0 | 1781 | 1749 | 0 | 1781 | 1749 | 1778 |
| Q Serve(g_s), s | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.2 | 0.0 | 0.0 | 6.0 | 6.0 |
| Cycle Q Clear(g_c), s | 2.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.2 | 0.0 | 0.0 | 6.0 | 6.0 |
| Prop In Lane | 0.87 | | 0.12 | 0.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.20 |
| Lane Grp Cap(c), veh/h | 353 | 0 | 0 | 0 | 187 | 0 | 390 | 2064 | 0 | 507 | 749 | 762 |
| V/C Ratio(X) | 0.32 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.41 | 0.00 | 0.00 | 0.57 | 0.57 |
| Avail Cap(c_a), veh/h | 1811 | 0 | 0 | 0 | 2086 | 0 | 764 | 8017 | 0 | 777 | 3900 | 3965 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.1 | 3.6 | 0.0 | 0.0 | 7.0 | 7.0 |
| Incr Delay (d2), s/veh | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.7 | 0.7 |
| 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(50%),veh/ln | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 1.0 | 1.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 14.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.1 | 3.7 | 0.0 | 0.0 | 7.7 | 7.7 |
| LnGrp LOS | B | A | A | A | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 112 | | | 0 | | | 853 | | | 867 | |
| Approach Delay, s/veh | | 14.7 | | | 0.0 | | | 3.7 | | | 7.7 | |
| Approach LOS | | B | | | | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.0 | 24.1 | | 8.2 | 5.2 | 18.8 | | 8.2 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 5.0 | 74.0 | | 36.0 | 7.0 | 72.0 | | 36.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 10.0 | 6.2 | | 4.5 | 2.0 | 8.0 | | 0.0 | | | | |
| Green Ext Time (p_c), s | 0.0 | 6.5 | | 0.6 | 0.0 | 5.8 | | 0.0 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 6.3 |
| HCM 6th LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 15 | 15 | 20 | 18 | 7 | 26 | 42 | 727 | 23 | 32 | 730 | 27 |
| Future Volume (veh/h) | 15 | 15 | 20 | 18 | 7 | 26 | 42 | 727 | 23 | 32 | 730 | 27 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 17 | 17 | 22 | 20 | 8 | 29 | 47 | 808 | 26 | 36 | 811 | 30 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 181 | 56 | 63 | 193 | 29 | 80 | 451 | 1425 | 46 | 444 | 1381 | 51 |
| Arrive On Green | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.05 | 0.41 | 0.41 | 0.04 | 0.40 | 0.40 |
| Sat Flow, veh/h | 422 | 579 | 648 | 488 | 302 | 818 | 1781 | 3458 | 111 | 1781 | 3439 | 127 |
| Grp Volume(v), veh/h | 56 | 0 | 0 | 57 | 0 | 0 | 47 | 409 | 425 | 36 | 412 | 429 |
| Grp Sat Flow(s),veh/h/ln | 1649 | 0 | 0 | 1608 | 0 | 0 | 1781 | 1749 | 1821 | 1781 | 1749 | 1818 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 6.0 | 6.0 | 0.4 | 6.2 | 6.2 |
| Cycle Q Clear(g_c), s | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.5 | 6.0 | 6.0 | 0.4 | 6.2 | 6.2 |
| Prop In Lane | 0.30 | | 0.39 | 0.35 | | 0.51 | 1.00 | | 0.06 | 1.00 | | 0.07 |
| Lane Grp Cap(c), veh/h | 300 | 0 | 0 | 302 | 0 | 0 | 451 | 720 | 750 | 444 | 702 | 730 |
| V/C Ratio(X) | 0.19 | 0.00 | 0.00 | 0.19 | 0.00 | 0.00 | 0.10 | 0.57 | 0.57 | 0.08 | 0.59 | 0.59 |
| Avail Cap(c_a), veh/h | 1756 | 0 | 0 | 1710 | 0 | 0 | 943 | 3711 | 3864 | 901 | 3659 | 3803 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.1 | 0.0 | 0.0 | 14.1 | 0.0 | 0.0 | 5.7 | 7.5 | 7.5 | 5.8 | 7.8 | 7.8 |
| Incr Delay (d2), s/veh | 0.3 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.1 | 0.7 | 0.7 | 0.1 | 0.8 | 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(50%),veh/ln | 0.3 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.1 | 1.0 | 1.1 | 0.1 | 1.1 | 1.2 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 14.4 | 0.0 | 0.0 | 14.4 | 0.0 | 0.0 | 5.8 | 8.3 | 8.2 | 5.9 | 8.6 | 8.6 |
| LnGrp LOS | B | A | A | B | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 56 | | | 57 | | | 881 | | | 877 | |
| Approach Delay, s/veh | | 14.4 | | | 14.4 | | | 8.1 | | | 8.5 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.4 | 18.8 | | 8.3 | 6.8 | 18.4 | | 8.3 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 10.0 | 71.0 | | 34.0 | 11.0 | 70.0 | | 34.0 |
| Max Q Clear Time (g_c+I1), s | 2.4 | 8.0 | | 3.0 | 2.5 | 8.2 | | 3.0 |
| Green Ext Time (p_c), s | 0.0 | 5.2 | | 0.2 | 0.0 | 5.3 | | 0.2 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | 8.7 | |
| HCM 6th LOS | A | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 89 | 0 | 8 | 0 | 0 | 0 | 9 | 697 | 0 | 0 | 732 | 82 |
| Future Volume (veh/h) | 89 | 0 | 8 | 0 | 0 | 0 | 9 | 697 | 0 | 0 | 732 | 82 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 94 | 0 | 8 | 0 | 0 | 0 | 9 | 734 | 0 | 0 | 771 | 86 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 339 | 0 | 10 | 0 | 174 | 0 | 402 | 2078 | 0 | 539 | 1351 | 151 |
| Arrive On Green | 0.09 | 0.00 | 0.09 | 0.00 | 0.00 | 0.00 | 0.01 | 0.59 | 0.00 | 0.00 | 0.43 | 0.43 |
| Sat Flow, veh/h | 1317 | 0 | 112 | 0 | 1870 | 0 | 1781 | 3589 | 0 | 1781 | 3172 | 354 |
| Grp Volume(v), veh/h | 102 | 0 | 0 | 0 | 0 | 0 | 9 | 734 | 0 | 0 | 425 | 432 |
| Grp Sat Flow(s),veh/h/ln | 1429 | 0 | 0 | 0 | 1870 | 0 | 1781 | 1749 | 0 | 1781 | 1749 | 1777 |
| Q Serve(g_s), s | 2.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 3.4 | 0.0 | 0.0 | 5.9 | 5.9 |
| Cycle Q Clear(g_c), s | 2.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 3.4 | 0.0 | 0.0 | 5.9 | 5.9 |
| Prop In Lane | 0.92 | | 0.08 | 0.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.20 |
| Lane Grp Cap(c), veh/h | 349 | 0 | 0 | 0 | 174 | 0 | 402 | 2078 | 0 | 539 | 745 | 757 |
| V/C Ratio(X) | 0.29 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.35 | 0.00 | 0.00 | 0.57 | 0.57 |
| Avail Cap(c_a), veh/h | 1825 | 0 | 0 | 0 | 2105 | 0 | 826 | 8091 | 0 | 811 | 3882 | 3944 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 3.3 | 0.0 | 0.0 | 7.0 | 7.0 |
| Incr Delay (d2), s/veh | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.7 | 0.7 |
| 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(50%),veh/ln | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 1.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 14.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.0 | 3.4 | 0.0 | 0.0 | 7.7 | 7.6 |
| LnGrp LOS | B | A | A | A | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 102 | | | 0 | | | 743 | | | 857 | |
| Approach Delay, s/veh | | 14.6 | | | 0.0 | | | 3.5 | | | 7.7 | |
| Approach LOS | | B | | | | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.0 | 24.0 | | 8.0 | 5.4 | 18.6 | | 8.0 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 5.0 | 74.0 | | 36.0 | 8.0 | 71.0 | | 36.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 0.0 | 5.4 | | 4.2 | 2.1 | 7.9 | | 0.0 | | | | |
| Green Ext Time (p_c), s | 0.0 | 5.3 | | 0.6 | 0.0 | 5.7 | | 0.0 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 6.2 |
| HCM 6th LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 23 | 5 | 21 | 18 | 3 | 22 | 26 | 643 | 15 | 27 | 706 | 29 |
| Future Volume (veh/h) | 23 | 5 | 21 | 18 | 3 | 22 | 26 | 643 | 15 | 27 | 706 | 29 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 24 | 5 | 22 | 19 | 3 | 23 | 27 | 677 | 16 | 28 | 743 | 31 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 239 | 15 | 62 | 225 | 13 | 74 | 446 | 1351 | 32 | 475 | 1327 | 55 |
| Arrive On Green | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.03 | 0.39 | 0.39 | 0.03 | 0.39 | 0.39 |
| Sat Flow, veh/h | 735 | 166 | 684 | 642 | 140 | 817 | 1781 | 3492 | 83 | 1781 | 3421 | 143 |
| Grp Volume(v), veh/h | 51 | 0 | 0 | 45 | 0 | 0 | 27 | 339 | 354 | 28 | 380 | 394 |
| Grp Sat Flow(s),veh/h/ln | 1586 | 0 | 0 | 1598 | 0 | 0 | 1781 | 1749 | 1826 | 1781 | 1749 | 1815 |
| Q Serve(g_s), s | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 4.5 | 4.5 | 0.3 | 5.2 | 5.2 |
| Cycle Q Clear(g_c), s | 0.8 | 0.0 | 0.0 | 0.7 | 0.0 | 0.0 | 0.3 | 4.5 | 4.5 | 0.3 | 5.2 | 5.2 |
| Prop In Lane | 0.47 | | 0.43 | 0.42 | | 0.51 | 1.00 | | 0.05 | 1.00 | | 0.08 |
| Lane Grp Cap(c), veh/h | 316 | 0 | 0 | 312 | 0 | 0 | 446 | 677 | 706 | 475 | 678 | 704 |
| V/C Ratio(X) | 0.16 | 0.00 | 0.00 | 0.14 | 0.00 | 0.00 | 0.06 | 0.50 | 0.50 | 0.06 | 0.56 | 0.56 |
| Avail Cap(c_a), veh/h | 1892 | 0 | 0 | 1890 | 0 | 0 | 907 | 4036 | 4214 | 935 | 4036 | 4189 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 13.1 | 0.0 | 0.0 | 13.0 | 0.0 | 0.0 | 5.7 | 7.2 | 7.2 | 5.6 | 7.4 | 7.4 |
| Incr Delay (d2), s/veh | 0.2 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.1 | 0.6 | 0.6 | 0.1 | 0.7 | 0.7 |
| 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(50%),veh/ln | 0.3 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 | 0.0 | 0.8 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 13.3 | 0.0 | 0.0 | 13.2 | 0.0 | 0.0 | 5.8 | 7.7 | 7.7 | 5.6 | 8.1 | 8.1 |
| LnGrp LOS | B | A | A | B | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 51 | | | 45 | | | 720 | | | 802 | |
| Approach Delay, s/veh | | 13.3 | | | 13.2 | | | 7.7 | | | 8.0 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.1 | 16.9 | | 7.8 | 6.0 | 16.9 | | 7.8 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 9.0 | 71.0 | | 35.0 | 9.0 | 71.0 | | 35.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.3 | 6.5 | | 2.8 | 2.3 | 7.2 | | 2.7 | | | | |
| Green Ext Time (p_c), s | 0.0 | 4.1 | | 0.2 | 0.0 | 4.7 | | 0.2 | | | | |

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 728 | 0 | 0 | 627 | 26 |
| Future Volume (veh/h) | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 728 | 0 | 0 | 627 | 26 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 758 | 0 | 0 | 653 | 27 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 295 | 0 | 0 | 0 | 8 | 0 | 485 | 2078 | 0 | 573 | 1341 | 55 |
| Arrive On Green | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.59 | 0.00 | 0.00 | 0.39 | 0.39 |
| Sat Flow, veh/h | 1417 | 0 | 0 | 0 | 1870 | 0 | 1781 | 3589 | 0 | 1781 | 3423 | 141 |
| Grp Volume(v), veh/h | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 758 | 0 | 0 | 333 | 347 |
| Grp Sat Flow(s),veh/h/ln | 1418 | 0 | 0 | 0 | 1870 | 0 | 1781 | 1749 | 0 | 1781 | 1749 | 1815 |
| Q Serve(g_s), s | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.8 | 0.0 | 0.0 | 3.6 | 3.6 |
| Cycle Q Clear(g_c), s | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 2.8 | 0.0 | 0.0 | 3.6 | 3.6 |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.08 |
| Lane Grp Cap(c), veh/h | 295 | 0 | 0 | 0 | 8 | 0 | 485 | 2078 | 0 | 573 | 685 | 711 |
| V/C Ratio(X) | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.36 | 0.00 | 0.00 | 0.49 | 0.49 |
| Avail Cap(c_a), veh/h | 1827 | 0 | 0 | 0 | 2029 | 0 | 1265 | 11664 | 0 | 924 | 5410 | 5616 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 12.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.1 | 2.6 | 0.0 | 0.0 | 5.7 | 5.7 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.5 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 12.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.1 | 2.7 | 0.0 | 0.0 | 6.2 | 6.2 |
| LnGrp LOS | B | A | A | A | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 3 | | | 0 | | | 759 | | | 680 | |
| Approach Delay, s/veh | | 12.4 | | | 0.0 | | | 2.7 | | | 6.2 | |
| Approach LOS | | B | | | | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.0 | 19.8 | | 5.1 | 5.0 | 14.8 | | 5.1 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 83.0 | | 27.0 | 11.0 | 77.0 | | 27.0 |
| Max Q Clear Time (g_c+I1), s | 2.0 | 4.8 | | 2.1 | 2.0 | 5.6 | | 0.0 |
| Green Ext Time (p_c), s | 0.0 | 5.6 | | 0.0 | 0.0 | 4.2 | | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 4.4 |
| HCM 6th LOS | | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 2 | 4 | 29 | 22 | 12 | 25 | 80 | 690 | 37 | 13 | 573 | 9 |
| Future Volume (veh/h) | 2 | 4 | 29 | 22 | 12 | 25 | 80 | 690 | 37 | 13 | 573 | 9 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 2 | 4 | 31 | 23 | 13 | 27 | 85 | 734 | 39 | 14 | 610 | 10 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 132 | 19 | 129 | 216 | 33 | 65 | 536 | 1321 | 70 | 426 | 1145 | 19 |
| Arrive On Green | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.08 | 0.39 | 0.39 | 0.02 | 0.33 | 0.33 |
| Sat Flow, veh/h | 68 | 198 | 1374 | 567 | 352 | 689 | 1781 | 3378 | 179 | 1781 | 3521 | 58 |
| Grp Volume(v), veh/h | 37 | 0 | 0 | 63 | 0 | 0 | 85 | 380 | 393 | 14 | 303 | 317 |
| Grp Sat Flow(s),veh/h/ln | 1640 | 0 | 0 | 1609 | 0 | 0 | 1781 | 1749 | 1808 | 1781 | 1749 | 1830 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.9 | 5.1 | 5.1 | 0.2 | 4.3 | 4.3 |
| Cycle Q Clear(g_c), s | 0.6 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.9 | 5.1 | 5.1 | 0.2 | 4.3 | 4.3 |
| Prop In Lane | 0.05 | | 0.84 | 0.37 | | 0.43 | 1.00 | | 0.10 | 1.00 | | 0.03 |
| Lane Grp Cap(c), veh/h | 280 | 0 | 0 | 314 | 0 | 0 | 536 | 684 | 707 | 426 | 569 | 595 |
| V/C Ratio(X) | 0.13 | 0.00 | 0.00 | 0.20 | 0.00 | 0.00 | 0.16 | 0.56 | 0.56 | 0.03 | 0.53 | 0.53 |
| Avail Cap(c_a), veh/h | 1980 | 0 | 0 | 1960 | 0 | 0 | 1270 | 4109 | 4250 | 924 | 3762 | 3938 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 12.7 | 0.0 | 0.0 | 12.9 | 0.0 | 0.0 | 5.9 | 7.2 | 7.2 | 6.7 | 8.3 | 8.3 |
| Incr Delay (d2), s/veh | 0.2 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.1 | 0.7 | 0.7 | 0.0 | 0.8 | 0.7 |
| 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(50%),veh/ln | 0.2 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.1 | 0.8 | 0.8 | 0.0 | 0.8 | 0.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 12.9 | 0.0 | 0.0 | 13.2 | 0.0 | 0.0 | 6.0 | 7.9 | 7.8 | 6.8 | 9.1 | 9.1 |
| LnGrp LOS | B | A | A | B | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 37 | | | 63 | | | 858 | | | 634 | |
| Approach Delay, s/veh | | 12.9 | | | 13.2 | | | 7.7 | | | 9.0 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.6 | 16.8 | | 7.8 | 7.6 | 14.8 | | 7.8 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 9.6 | 71.0 | | 35.0 | 15.0 | 65.0 | | 35.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.2 | 7.1 | | 2.6 | 2.9 | 6.3 | | 3.0 | | | | |
| Green Ext Time (p_c), s | 0.0 | 4.7 | | 0.1 | 0.1 | 3.5 | | 0.3 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 8.5 |
| HCM 6th LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 62 | 0 | 11 | 0 | 0 | 0 | 7 | 877 | 0 | 0 | 964 | 77 |
| Future Volume (veh/h) | 62 | 0 | 11 | 0 | 0 | 0 | 7 | 877 | 0 | 0 | 964 | 77 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 65 | 0 | 11 | 0 | 0 | 0 | 7 | 914 | 0 | 0 | 1004 | 80 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 276 | 0 | 15 | 0 | 138 | 0 | 362 | 2268 | 0 | 510 | 1642 | 131 |
| Arrive On Green | 0.07 | 0.00 | 0.07 | 0.00 | 0.00 | 0.00 | 0.01 | 0.65 | 0.00 | 0.00 | 0.50 | 0.50 |
| Sat Flow, veh/h | 1231 | 0 | 208 | 0 | 1870 | 0 | 1781 | 3589 | 0 | 1781 | 3281 | 261 |
| Grp Volume(v), veh/h | 76 | 0 | 0 | 0 | 0 | 0 | 7 | 914 | 0 | 0 | 535 | 549 |
| Grp Sat Flow(s),veh/h/ln | 1440 | 0 | 0 | 0 | 1870 | 0 | 1781 | 1749 | 0 | 1781 | 1749 | 1794 |
| Q Serve(g_s), s | 1.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 4.5 | 0.0 | 0.0 | 7.9 | 7.9 |
| Cycle Q Clear(g_c), s | 1.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 4.5 | 0.0 | 0.0 | 7.9 | 7.9 |
| Prop In Lane | 0.86 | | 0.14 | 0.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.15 |
| Lane Grp Cap(c), veh/h | 292 | 0 | 0 | 0 | 138 | 0 | 362 | 2268 | 0 | 510 | 875 | 898 |
| V/C Ratio(X) | 0.26 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.40 | 0.00 | 0.00 | 0.61 | 0.61 |
| Avail Cap(c_a), veh/h | 1384 | 0 | 0 | 0 | 1557 | 0 | 692 | 7764 | 0 | 753 | 3785 | 3882 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 16.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.8 | 3.0 | 0.0 | 0.0 | 6.5 | 6.5 |
| Incr Delay (d2), s/veh | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.7 | 0.7 |
| 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(50%),veh/ln | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.3 | 1.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 16.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.8 | 3.1 | 0.0 | 0.0 | 7.2 | 7.2 |
| LnGrp LOS | B | A | A | A | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 76 | | | 0 | | | 921 | | | 1084 | |
| Approach Delay, s/veh | | 16.8 | | | 0.0 | | | 3.1 | | | 7.2 | |
| Approach LOS | | B | | | | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.0 | 28.4 | | 7.7 | 5.3 | 23.0 | | 7.7 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 5.0 | 80.0 | | 30.0 | 7.0 | 78.0 | | 30.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 10.0 | 6.5 | | 3.9 | 2.1 | 9.9 | | 0.0 | | | | |
| Green Ext Time (p_c), s | 0.0 | 7.2 | | 0.4 | 0.0 | 8.1 | | 0.0 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 5.7 |
| HCM 6th LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 13 | 7 | 69 | 31 | 12 | 22 | 43 | 838 | 29 | 34 | 973 | 29 |
| Future Volume (veh/h) | 13 | 7 | 69 | 31 | 12 | 22 | 43 | 838 | 29 | 34 | 973 | 29 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 14 | 7 | 72 | 32 | 12 | 23 | 45 | 873 | 30 | 35 | 1014 | 30 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 125 | 20 | 131 | 206 | 45 | 60 | 401 | 1616 | 56 | 435 | 1593 | 47 |
| Arrive On Green | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.11 | 0.05 | 0.47 | 0.47 | 0.04 | 0.46 | 0.46 |
| Sat Flow, veh/h | 171 | 190 | 1239 | 655 | 427 | 566 | 1781 | 3450 | 119 | 1781 | 3468 | 103 |
| Grp Volume(v), veh/h | 93 | 0 | 0 | 67 | 0 | 0 | 45 | 443 | 460 | 35 | 511 | 533 |
| Grp Sat Flow(s),veh/h/ln | 1601 | 0 | 0 | 1648 | 0 | 0 | 1781 | 1749 | 1819 | 1781 | 1749 | 1822 |
| Q Serve(g_s), s | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 7.0 | 7.0 | 0.4 | 8.7 | 8.7 |
| Cycle Q Clear(g_c), s | 2.1 | 0.0 | 0.0 | 1.3 | 0.0 | 0.0 | 0.5 | 7.0 | 7.0 | 0.4 | 8.7 | 8.7 |
| Prop In Lane | 0.15 | | 0.77 | 0.48 | | 0.34 | 1.00 | | 0.07 | 1.00 | | 0.06 |
| Lane Grp Cap(c), veh/h | 276 | 0 | 0 | 311 | 0 | 0 | 401 | 819 | 852 | 435 | 803 | 837 |
| V/C Ratio(X) | 0.34 | 0.00 | 0.00 | 0.22 | 0.00 | 0.00 | 0.11 | 0.54 | 0.54 | 0.08 | 0.64 | 0.64 |
| Avail Cap(c_a), veh/h | 1479 | 0 | 0 | 1450 | 0 | 0 | 725 | 3325 | 3460 | 683 | 3235 | 3371 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 16.5 | 0.0 | 0.0 | 16.2 | 0.0 | 0.0 | 5.9 | 7.4 | 7.4 | 5.6 | 8.0 | 8.0 |
| Incr Delay (d2), s/veh | 0.7 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.1 | 0.6 | 0.5 | 0.1 | 0.8 | 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(50%),veh/ln | 0.7 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.1 | 1.3 | 1.3 | 0.1 | 1.7 | 1.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 17.2 | 0.0 | 0.0 | 16.5 | 0.0 | 0.0 | 6.0 | 7.9 | 7.9 | 5.6 | 8.9 | 8.8 |
| LnGrp LOS | B | A | A | B | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 93 | | | 67 | | | 948 | | | 1079 | |
| Approach Delay, s/veh | | 17.2 | | | 16.5 | | | 7.8 | | | 8.8 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.6 | 23.2 | | 9.1 | 6.9 | 22.9 | | 9.1 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 7.6 | 74.0 | | 34.0 | 9.0 | 72.0 | | 34.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.4 | 9.0 | | 4.1 | 2.5 | 10.7 | | 3.3 | | | | |
| Green Ext Time (p_c), s | 0.0 | 5.8 | | 0.5 | 0.0 | 7.2 | | 0.3 | | | | |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 8.9 |
| HCM 6th LOS | | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 103 | 0 | 15 | 0 | 0 | 0 | 6 | 893 | 0 | 0 | 822 | 91 |
| Future Volume (veh/h) | 103 | 0 | 15 | 0 | 0 | 0 | 6 | 893 | 0 | 0 | 822 | 91 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 110 | 0 | 16 | 0 | 0 | 0 | 6 | 950 | 0 | 0 | 874 | 97 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 334 | 0 | 21 | 0 | 215 | 0 | 361 | 2113 | 0 | 476 | 1446 | 160 |
| Arrive On Green | 0.12 | 0.00 | 0.12 | 0.00 | 0.00 | 0.00 | 0.01 | 0.60 | 0.00 | 0.00 | 0.46 | 0.46 |
| Sat Flow, veh/h | 1254 | 0 | 182 | 0 | 1870 | 0 | 1781 | 3589 | 0 | 1781 | 3174 | 352 |
| Grp Volume(v), veh/h | 126 | 0 | 0 | 0 | 0 | 0 | 6 | 950 | 0 | 0 | 482 | 489 |
| Grp Sat Flow(s),veh/h/ln | 1437 | 0 | 0 | 0 | 1870 | 0 | 1781 | 1749 | 0 | 1781 | 1749 | 1777 |
| Q Serve(g_s), s | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 5.3 | 0.0 | 0.0 | 7.4 | 7.4 |
| Cycle Q Clear(g_c), s | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 5.3 | 0.0 | 0.0 | 7.4 | 7.4 |
| Prop In Lane | 0.87 | | 0.13 | 0.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.20 |
| Lane Grp Cap(c), veh/h | 355 | 0 | 0 | 0 | 215 | 0 | 361 | 2113 | 0 | 476 | 797 | 810 |
| V/C Ratio(X) | 0.36 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.45 | 0.00 | 0.00 | 0.60 | 0.60 |
| Avail Cap(c_a), veh/h | 1602 | 0 | 0 | 0 | 1839 | 0 | 696 | 7367 | 0 | 721 | 3585 | 3644 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.4 | 3.8 | 0.0 | 0.0 | 7.3 | 7.3 |
| Incr Delay (d2), s/veh | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.7 | 0.7 |
| 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(50%),veh/ln | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 1.4 | 1.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.4 | 4.0 | 0.0 | 0.0 | 8.0 | 8.0 |
| LnGrp LOS | B | A | A | A | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 126 | | | 0 | | | 956 | | | 971 | |
| Approach Delay, s/veh | | 15.9 | | | 0.0 | | | 4.0 | | | 8.0 | |
| Approach LOS | | B | | | | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.0 | 26.5 | | 9.1 | 5.3 | 21.2 | | 9.1 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 5.0 | 75.0 | | 35.0 | 7.0 | 73.0 | | 35.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 10.0 | 7.3 | | 5.0 | 2.1 | 9.4 | | 0.0 | | | | |
| Green Ext Time (p_c), s | 0.0 | 7.6 | | 0.7 | 0.0 | 6.9 | | 0.0 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 6.6 |
| HCM 6th LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 17 | 17 | 22 | 20 | 8 | 29 | 47 | 814 | 26 | 36 | 818 | 30 |
| Future Volume (veh/h) | 17 | 17 | 22 | 20 | 8 | 29 | 47 | 814 | 26 | 36 | 818 | 30 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 19 | 19 | 24 | 22 | 9 | 32 | 52 | 904 | 29 | 40 | 909 | 33 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 171 | 60 | 63 | 181 | 32 | 81 | 434 | 1524 | 49 | 426 | 1481 | 54 |
| Arrive On Green | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.06 | 0.44 | 0.44 | 0.05 | 0.43 | 0.43 |
| Sat Flow, veh/h | 410 | 602 | 640 | 469 | 325 | 819 | 1781 | 3458 | 111 | 1781 | 3442 | 125 |
| Grp Volume(v), veh/h | 62 | 0 | 0 | 63 | 0 | 0 | 52 | 457 | 476 | 40 | 462 | 480 |
| Grp Sat Flow(s),veh/h/ln | 1652 | 0 | 0 | 1612 | 0 | 0 | 1781 | 1749 | 1821 | 1781 | 1749 | 1818 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 7.2 | 7.2 | 0.4 | 7.4 | 7.4 |
| Cycle Q Clear(g_c), s | 1.2 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 0.6 | 7.2 | 7.2 | 0.4 | 7.4 | 7.4 |
| Prop In Lane | 0.31 | | 0.39 | 0.35 | | 0.51 | 1.00 | | 0.06 | 1.00 | | 0.07 |
| Lane Grp Cap(c), veh/h | 293 | 0 | 0 | 294 | 0 | 0 | 434 | 771 | 803 | 426 | 752 | 782 |
| V/C Ratio(X) | 0.21 | 0.00 | 0.00 | 0.21 | 0.00 | 0.00 | 0.12 | 0.59 | 0.59 | 0.09 | 0.61 | 0.61 |
| Avail Cap(c_a), veh/h | 1623 | 0 | 0 | 1582 | 0 | 0 | 777 | 3480 | 3624 | 788 | 3480 | 3619 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.2 | 0.0 | 0.0 | 15.2 | 0.0 | 0.0 | 5.7 | 7.7 | 7.7 | 5.8 | 8.0 | 8.0 |
| Incr Delay (d2), s/veh | 0.4 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.1 | 0.7 | 0.7 | 0.1 | 0.8 | 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(50%),veh/ln | 0.4 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.1 | 1.3 | 1.3 | 0.1 | 1.4 | 1.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 15.6 | 0.0 | 0.0 | 15.6 | 0.0 | 0.0 | 5.9 | 8.4 | 8.4 | 5.9 | 8.8 | 8.8 |
| LnGrp LOS | B | A | A | B | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 62 | | | 63 | | | 985 | | | 982 | |
| Approach Delay, s/veh | | 15.6 | | | 15.6 | | | 8.2 | | | 8.7 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.7 | 20.9 | | 8.6 | 7.0 | 20.6 | | 8.6 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 9.0 | 72.0 | | 34.0 | 9.0 | 72.0 | | 34.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.4 | 9.2 | | 3.2 | 2.6 | 9.4 | | 3.2 | | | | |
| Green Ext Time (p_c), s | 0.0 | 6.1 | | 0.3 | 0.0 | 6.2 | | 0.3 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 8.9 |
| HCM 6th LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 100 | 0 | 9 | 0 | 0 | 0 | 10 | 781 | 0 | 0 | 820 | 92 |
| Future Volume (veh/h) | 100 | 0 | 9 | 0 | 0 | 0 | 10 | 781 | 0 | 0 | 820 | 92 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 105 | 0 | 9 | 0 | 0 | 0 | 11 | 822 | 0 | 0 | 863 | 97 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 333 | 0 | 12 | 0 | 192 | 0 | 378 | 2138 | 0 | 513 | 1439 | 162 |
| Arrive On Green | 0.10 | 0.00 | 0.10 | 0.00 | 0.00 | 0.00 | 0.01 | 0.61 | 0.00 | 0.00 | 0.45 | 0.45 |
| Sat Flow, veh/h | 1317 | 0 | 113 | 0 | 1870 | 0 | 1781 | 3589 | 0 | 1781 | 3169 | 356 |
| Grp Volume(v), veh/h | 114 | 0 | 0 | 0 | 0 | 0 | 11 | 822 | 0 | 0 | 476 | 484 |
| Grp Sat Flow(s),veh/h/ln | 1429 | 0 | 0 | 0 | 1870 | 0 | 1781 | 1749 | 0 | 1781 | 1749 | 1777 |
| Q Serve(g_s), s | 2.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 4.2 | 0.0 | 0.0 | 7.1 | 7.1 |
| Cycle Q Clear(g_c), s | 2.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 4.2 | 0.0 | 0.0 | 7.1 | 7.1 |
| Prop In Lane | 0.92 | | 0.08 | 0.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.20 |
| Lane Grp Cap(c), veh/h | 345 | 0 | 0 | 0 | 192 | 0 | 378 | 2138 | 0 | 513 | 794 | 807 |
| V/C Ratio(X) | 0.33 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.38 | 0.00 | 0.00 | 0.60 | 0.60 |
| Avail Cap(c_a), veh/h | 1669 | 0 | 0 | 0 | 1925 | 0 | 708 | 7397 | 0 | 763 | 3599 | 3656 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.2 | 3.5 | 0.0 | 0.0 | 7.2 | 7.2 |
| Incr Delay (d2), s/veh | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.7 | 0.7 |
| 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(50%),veh/ln | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 1.3 | 1.3 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 15.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 5.2 | 3.6 | 0.0 | 0.0 | 7.9 | 7.9 |
| LnGrp LOS | B | A | A | A | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 114 | | | 0 | | | 833 | | | 960 | |
| Approach Delay, s/veh | | 15.9 | | | 0.0 | | | 3.6 | | | 7.9 | |
| Approach LOS | | B | | | | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.0 | 26.4 | | 8.6 | 5.5 | 20.9 | | 8.6 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 5.0 | 74.0 | | 36.0 | 7.0 | 72.0 | | 36.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 10.0 | 6.2 | | 4.7 | 2.1 | 9.1 | | 0.0 | | | | |
| Green Ext Time (p_c), s | 0.0 | 6.2 | | 0.6 | 0.0 | 6.7 | | 0.0 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 6.5 |
| HCM 6th LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 26 | 6 | 24 | 20 | 3 | 25 | 29 | 720 | 17 | 30 | 791 | 32 |
| Future Volume (veh/h) | 26 | 6 | 24 | 20 | 3 | 25 | 29 | 720 | 17 | 30 | 791 | 32 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 27 | 6 | 25 | 21 | 3 | 26 | 31 | 758 | 18 | 32 | 833 | 34 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 225 | 21 | 65 | 211 | 16 | 79 | 429 | 1443 | 34 | 460 | 1419 | 58 |
| Arrive On Green | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.04 | 0.41 | 0.41 | 0.04 | 0.41 | 0.41 |
| Sat Flow, veh/h | 688 | 216 | 684 | 598 | 169 | 831 | 1781 | 3492 | 83 | 1781 | 3424 | 140 |
| Grp Volume(v), veh/h | 58 | 0 | 0 | 50 | 0 | 0 | 31 | 380 | 396 | 32 | 425 | 442 |
| Grp Sat Flow(s),veh/h/ln | 1588 | 0 | 0 | 1598 | 0 | 0 | 1781 | 1749 | 1826 | 1781 | 1749 | 1816 |
| Q Serve(g_s), s | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 5.4 | 5.4 | 0.3 | 6.2 | 6.2 |
| Cycle Q Clear(g_c), s | 1.0 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.3 | 5.4 | 5.4 | 0.3 | 6.2 | 6.2 |
| Prop In Lane | 0.47 | | 0.43 | 0.42 | | 0.52 | 1.00 | | 0.05 | 1.00 | | 0.08 |
| Lane Grp Cap(c), veh/h | 310 | 0 | 0 | 306 | 0 | 0 | 429 | 723 | 755 | 460 | 725 | 752 |
| V/C Ratio(X) | 0.19 | 0.00 | 0.00 | 0.16 | 0.00 | 0.00 | 0.07 | 0.53 | 0.53 | 0.07 | 0.59 | 0.59 |
| Avail Cap(c_a), veh/h | 1713 | 0 | 0 | 1708 | 0 | 0 | 846 | 3803 | 3970 | 876 | 3803 | 3948 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 14.0 | 0.0 | 0.0 | 14.0 | 0.0 | 0.0 | 5.7 | 7.3 | 7.3 | 5.5 | 7.5 | 7.5 |
| Incr Delay (d2), s/veh | 0.3 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.1 | 0.6 | 0.6 | 0.1 | 0.8 | 0.7 |
| 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(50%),veh/ln | 0.3 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.9 | 0.9 | 0.0 | 1.0 | 1.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 14.3 | 0.0 | 0.0 | 14.2 | 0.0 | 0.0 | 5.8 | 7.9 | 7.8 | 5.6 | 8.3 | 8.2 |
| LnGrp LOS | B | A | A | B | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 58 | | | 50 | | | 807 | | | 899 | |
| Approach Delay, s/veh | | 14.3 | | | 14.2 | | | 7.8 | | | 8.2 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.3 | 18.7 | | 8.1 | 6.2 | 18.7 | | 8.1 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 9.3 | 72.0 | | 34.0 | 9.0 | 72.0 | | 34.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.3 | 7.4 | | 3.0 | 2.3 | 8.2 | | 2.9 | | | | |
| Green Ext Time (p_c), s | 0.0 | 4.7 | | 0.3 | 0.0 | 5.5 | | 0.2 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 8.3 |
| HCM 6th LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 265 | 209 | 244 | 225 | 232 | 71 | 300 | 985 | 136 | 56 | 943 | 188 |
| Future Volume (veh/h) | 265 | 209 | 244 | 225 | 232 | 71 | 300 | 985 | 136 | 56 | 943 | 188 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 288 | 227 | 0 | 245 | 252 | 77 | 326 | 1071 | 0 | 61 | 1025 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 389 | 439 | | 342 | 304 | 93 | 431 | 1876 | | 82 | 1480 | |
| Arrive On Green | 0.11 | 0.23 | 0.00 | 0.10 | 0.22 | 0.22 | 0.12 | 0.37 | 0.00 | 0.05 | 0.29 | 0.00 |
| Sat Flow, veh/h | 3456 | 1870 | 1585 | 3456 | 1375 | 420 | 3456 | 5191 | 0 | 1781 | 5191 | 0 |
| Grp Volume(v), veh/h | 288 | 227 | 0 | 245 | 0 | 329 | 326 | 1071 | 0 | 61 | 1025 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1585 | 1728 | 0 | 1795 | 1728 | 1675 | 0 | 1781 | 1675 | 0 |
| Q Serve(g_s), s | 6.5 | 8.6 | 0.0 | 5.6 | 0.0 | 14.2 | 7.4 | 13.8 | 0.0 | 2.7 | 14.6 | 0.0 |
| Cycle Q Clear(g_c), s | 6.5 | 8.6 | 0.0 | 5.6 | 0.0 | 14.2 | 7.4 | 13.8 | 0.0 | 2.7 | 14.6 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.23 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 389 | 439 | | 342 | 0 | 397 | 431 | 1876 | | 82 | 1480 | |
| V/C Ratio(X) | 0.74 | 0.52 | | 0.72 | 0.00 | 0.83 | 0.76 | 0.57 | | 0.74 | 0.69 | |
| Avail Cap(c_a), veh/h | 683 | 808 | | 640 | 0 | 753 | 768 | 3102 | | 220 | 2606 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 34.8 | 27.0 | 0.0 | 35.4 | 0.0 | 30.1 | 34.3 | 20.2 | 0.0 | 38.2 | 25.3 | 0.0 |
| Incr Delay (d2), s/veh | 2.8 | 0.9 | 0.0 | 2.8 | 0.0 | 4.5 | 2.7 | 0.3 | 0.0 | 12.4 | 0.6 | 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(50%),veh/ln | 2.8 | 3.8 | 0.0 | 2.4 | 0.0 | 6.3 | 3.1 | 4.8 | 0.0 | 1.4 | 5.4 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 37.6 | 27.9 | 0.0 | 38.2 | 0.0 | 34.5 | 37.0 | 20.5 | 0.0 | 50.5 | 25.9 | 0.0 |
| LnGrp LOS | D | C | | D | A | C | D | C | | D | C | |
| Approach Vol, veh/h | | 515 | | | 574 | | | 1397 | | | 1086 | |
| Approach Delay, s/veh | | 33.3 | | | 36.1 | | | 24.3 | | | 27.3 | |
| Approach LOS | | C | | | D | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.7 | 35.2 | 13.0 | 24.0 | 15.1 | 28.9 | 14.1 | 22.9 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 10.0 | 50.0 | 15.0 | 35.0 | 18.0 | 42.0 | 16.0 | 34.0 |
| Max Q Clear Time (g_c+I1), s | 4.7 | 15.8 | 7.6 | 10.6 | 9.4 | 16.6 | 8.5 | 16.2 |
| Green Ext Time (p_c), s | 0.0 | 8.3 | 0.5 | 1.2 | 0.7 | 7.2 | 0.6 | 1.8 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 28.4 |
| HCM 6th LOS | C |

Notes

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 1248 | 0 | 0 | 1075 | 44 |
| Future Volume (veh/h) | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 1248 | 0 | 0 | 1075 | 44 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 1357 | 0 | 0 | 1168 | 48 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 218 | 0 | 0 | 0 | 18 | 0 | 363 | 2471 | 0 | 418 | 1923 | 79 |
| Arrive On Green | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.71 | 0.00 | 0.00 | 0.56 | 0.56 |
| Sat Flow, veh/h | 1418 | 0 | 0 | 0 | 1870 | 0 | 1781 | 3589 | 0 | 1781 | 3423 | 141 |
| Grp Volume(v), veh/h | 7 | 0 | 0 | 0 | 0 | 0 | 2 | 1357 | 0 | 0 | 596 | 620 |
| Grp Sat Flow(s),veh/h/ln | 1418 | 0 | 0 | 0 | 1870 | 0 | 1781 | 1749 | 0 | 1781 | 1749 | 1815 |
| Q Serve(g_s), s | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.5 | 0.0 | 0.0 | 8.0 | 8.0 |
| Cycle Q Clear(g_c), s | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 6.5 | 0.0 | 0.0 | 8.0 | 8.0 |
| Prop In Lane | 1.00 | | 0.00 | 0.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.08 |
| Lane Grp Cap(c), veh/h | 218 | 0 | 0 | 0 | 18 | 0 | 363 | 2471 | 0 | 418 | 982 | 1020 |
| V/C Ratio(X) | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 | 0.55 | 0.00 | 0.00 | 0.61 | 0.61 |
| Avail Cap(c_a), veh/h | 1292 | 0 | 0 | 0 | 1434 | 0 | 611 | 8246 | 0 | 666 | 4123 | 4280 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 17.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 | 2.5 | 0.0 | 0.0 | 5.1 | 5.1 |
| Incr Delay (d2), s/veh | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.6 | 0.6 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.8 | 0.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 17.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.0 | 2.7 | 0.0 | 0.0 | 5.7 | 5.7 |
| LnGrp LOS | B | A | A | A | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 7 | | | 0 | | | 1359 | | | 1216 | |
| Approach Delay, s/veh | | 17.4 | | | 0.0 | | | 2.7 | | | 5.7 | |
| Approach LOS | | B | | | | | | A | | | A | |

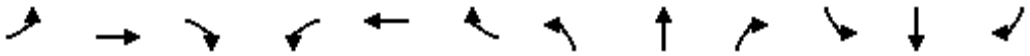
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.0 | 29.9 | | 5.3 | 5.1 | 24.8 | | 5.3 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 5.0 | 83.0 | | 27.0 | 5.0 | 83.0 | | 27.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 10.0 | 8.5 | | 2.2 | 2.0 | 10.0 | | 0.0 | | | | |
| Green Ext Time (p_c), s | 0.0 | 13.7 | | 0.0 | 0.0 | 9.8 | | 0.0 | | | | |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 4.2 |
| HCM 6th LOS | | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 4 | 8 | 50 | 38 | 21 | 42 | 136 | 1183 | 63 | 23 | 983 | 15 |
| Future Volume (veh/h) | 4 | 8 | 50 | 38 | 21 | 42 | 136 | 1183 | 63 | 23 | 983 | 15 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 4 | 9 | 54 | 41 | 23 | 46 | 148 | 1286 | 68 | 25 | 1068 | 16 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 85 | 28 | 138 | 156 | 46 | 71 | 452 | 1867 | 99 | 315 | 1736 | 26 |
| Arrive On Green | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.09 | 0.55 | 0.55 | 0.03 | 0.49 | 0.49 |
| Sat Flow, veh/h | 53 | 267 | 1329 | 507 | 440 | 681 | 1781 | 3379 | 178 | 1781 | 3527 | 53 |
| Grp Volume(v), veh/h | 67 | 0 | 0 | 110 | 0 | 0 | 148 | 665 | 689 | 25 | 529 | 555 |
| Grp Sat Flow(s),veh/h/ln | 1649 | 0 | 0 | 1627 | 0 | 0 | 1781 | 1749 | 1809 | 1781 | 1749 | 1831 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 | 1.8 | 13.1 | 13.2 | 0.3 | 10.5 | 10.5 |
| Cycle Q Clear(g_c), s | 1.8 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 1.8 | 13.1 | 13.2 | 0.3 | 10.5 | 10.5 |
| Prop In Lane | 0.06 | | 0.81 | 0.37 | | 0.42 | 1.00 | | 0.10 | 1.00 | | 0.03 |
| Lane Grp Cap(c), veh/h | 251 | 0 | 0 | 273 | 0 | 0 | 452 | 966 | 1000 | 315 | 861 | 901 |
| V/C Ratio(X) | 0.27 | 0.00 | 0.00 | 0.40 | 0.00 | 0.00 | 0.33 | 0.69 | 0.69 | 0.08 | 0.62 | 0.62 |
| Avail Cap(c_a), veh/h | 1156 | 0 | 0 | 1137 | 0 | 0 | 888 | 2853 | 2951 | 448 | 2451 | 2566 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 20.0 | 0.0 | 0.0 | 20.5 | 0.0 | 0.0 | 6.2 | 7.7 | 7.7 | 6.7 | 8.8 | 8.8 |
| Incr Delay (d2), s/veh | 0.6 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.4 | 0.9 | 0.9 | 0.1 | 0.7 | 0.7 |
| 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(50%),veh/ln | 0.6 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.3 | 2.5 | 2.6 | 0.1 | 2.4 | 2.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 20.6 | 0.0 | 0.0 | 21.4 | 0.0 | 0.0 | 6.6 | 8.6 | 8.6 | 6.8 | 9.6 | 9.5 |
| LnGrp LOS | C | A | A | C | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 67 | | | 110 | | | 1502 | | | 1109 | |
| Approach Delay, s/veh | | 20.6 | | | 21.4 | | | 8.4 | | | 9.5 | |
| Approach LOS | | C | | | C | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.4 | 31.4 | | 10.0 | 9.3 | 28.5 | | 10.0 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 5.0 | 78.0 | | 32.0 | 16.0 | 67.0 | | 32.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.3 | 15.2 | | 3.8 | 3.8 | 12.5 | | 5.0 | | | | |
| Green Ext Time (p_c), s | 0.0 | 11.3 | | 0.3 | 0.3 | 7.6 | | 0.5 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 9.6 |
| HCM 6th LOS | A |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 374 | 284 | 409 | 344 | 211 | 61 | 330 | 1377 | 319 | 65 | 1482 | 294 |
| Future Volume (veh/h) | 374 | 284 | 409 | 344 | 211 | 61 | 330 | 1377 | 319 | 65 | 1482 | 294 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 407 | 309 | 0 | 374 | 229 | 66 | 359 | 1497 | 0 | 71 | 1611 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 476 | 377 | | 424 | 260 | 75 | 415 | 2260 | | 91 | 1914 | |
| Arrive On Green | 0.14 | 0.20 | 0.00 | 0.12 | 0.19 | 0.19 | 0.12 | 0.45 | 0.00 | 0.05 | 0.38 | 0.00 |
| Sat Flow, veh/h | 3456 | 1870 | 1585 | 3456 | 1396 | 402 | 3456 | 5191 | 0 | 1781 | 5191 | 0 |
| Grp Volume(v), veh/h | 407 | 309 | 0 | 374 | 0 | 295 | 359 | 1497 | 0 | 71 | 1611 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1585 | 1728 | 0 | 1798 | 1728 | 1675 | 0 | 1781 | 1675 | 0 |
| Q Serve(g_s), s | 13.2 | 18.0 | 0.0 | 12.2 | 0.0 | 18.2 | 11.7 | 26.7 | 0.0 | 4.5 | 33.4 | 0.0 |
| Cycle Q Clear(g_c), s | 13.2 | 18.0 | 0.0 | 12.2 | 0.0 | 18.2 | 11.7 | 26.7 | 0.0 | 4.5 | 33.4 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.22 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 476 | 377 | | 424 | 0 | 335 | 415 | 2260 | | 91 | 1914 | |
| V/C Ratio(X) | 0.86 | 0.82 | | 0.88 | 0.00 | 0.88 | 0.87 | 0.66 | | 0.78 | 0.84 | |
| Avail Cap(c_a), veh/h | 575 | 557 | | 424 | 0 | 456 | 424 | 2376 | | 125 | 2112 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 48.1 | 43.6 | 0.0 | 49.3 | 0.0 | 45.2 | 49.4 | 24.6 | 0.0 | 53.6 | 32.2 | 0.0 |
| Incr Delay (d2), s/veh | 10.5 | 6.1 | 0.0 | 19.2 | 0.0 | 13.9 | 16.7 | 0.7 | 0.0 | 19.2 | 3.0 | 0.0 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.3 | 8.9 | 0.0 | 6.3 | 0.0 | 9.3 | 5.8 | 10.0 | 0.0 | 2.4 | 13.2 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 58.6 | 49.7 | 0.0 | 68.5 | 0.0 | 59.1 | 66.1 | 25.3 | 0.0 | 72.7 | 35.2 | 0.0 |
| LnGrp LOS | E | D | | E | A | E | E | C | | E | D | |
| Approach Vol, veh/h | | 716 | | | 669 | | | 1856 | | | 1682 | |
| Approach Delay, s/veh | | 54.8 | | | 64.4 | | | 33.2 | | | 36.8 | |
| Approach LOS | | D | | | E | | | C | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.8 | 56.4 | 19.0 | 28.0 | 18.7 | 48.5 | 20.7 | 26.3 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 54.0 | 14.0 | 34.0 | 14.0 | 48.0 | 19.0 | 29.0 |
| Max Q Clear Time (g_c+I1), s | 6.5 | 28.7 | 14.2 | 20.0 | 13.7 | 35.4 | 15.2 | 20.2 |
| Green Ext Time (p_c), s | 0.0 | 11.5 | 0.0 | 1.4 | 0.1 | 8.1 | 0.6 | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 41.8 |
| HCM 6th LOS | D |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 106 | 0 | 19 | 0 | 0 | 0 | 12 | 1503 | 0 | 0 | 1653 | 132 |
| Future Volume (veh/h) | 106 | 0 | 19 | 0 | 0 | 0 | 12 | 1503 | 0 | 0 | 1653 | 132 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 115 | 0 | 21 | 0 | 0 | 0 | 13 | 1634 | 0 | 0 | 1797 | 143 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 222 | 0 | 26 | 0 | 221 | 0 | 182 | 2671 | 0 | 258 | 2264 | 178 |
| Arrive On Green | 0.12 | 0.00 | 0.12 | 0.00 | 0.00 | 0.00 | 0.02 | 0.76 | 0.00 | 0.00 | 0.69 | 0.69 |
| Sat Flow, veh/h | 1218 | 0 | 223 | 0 | 1870 | 0 | 1781 | 3589 | 0 | 1781 | 3285 | 258 |
| Grp Volume(v), veh/h | 136 | 0 | 0 | 0 | 0 | 0 | 13 | 1634 | 0 | 0 | 945 | 995 |
| Grp Sat Flow(s),veh/h/ln | 1441 | 0 | 0 | 0 | 1870 | 0 | 1781 | 1749 | 0 | 1781 | 1749 | 1794 |
| Q Serve(g_s), s | 7.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 17.5 | 0.0 | 0.0 | 30.9 | 32.7 |
| Cycle Q Clear(g_c), s | 7.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 17.5 | 0.0 | 0.0 | 30.9 | 32.7 |
| Prop In Lane | 0.85 | | 0.15 | 0.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.14 |
| Lane Grp Cap(c), veh/h | 249 | 0 | 0 | 0 | 221 | 0 | 182 | 2671 | 0 | 258 | 1205 | 1236 |
| V/C Ratio(X) | 0.55 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.07 | 0.61 | 0.00 | 0.00 | 0.78 | 0.80 |
| Avail Cap(c_a), veh/h | 539 | 0 | 0 | 0 | 597 | 0 | 259 | 3432 | 0 | 362 | 1716 | 1761 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.7 | 4.4 | 0.0 | 0.0 | 8.9 | 9.2 |
| Incr Delay (d2), s/veh | 1.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | 1.6 | 1.9 |
| 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(50%),veh/ln | 2.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 3.1 | 0.0 | 0.0 | 8.2 | 9.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 38.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.9 | 4.7 | 0.0 | 0.0 | 10.5 | 11.0 |
| LnGrp LOS | D | A | A | A | A | A | B | A | A | A | B | B |
| Approach Vol, veh/h | | 136 | | | 0 | | | 1647 | | | 1940 | |
| Approach Delay, s/veh | | 38.2 | | | 0.0 | | | 4.7 | | | 10.8 | |
| Approach LOS | | D | | | | | | A | | | B | |

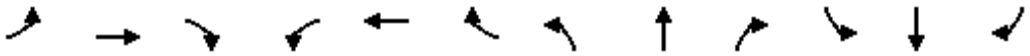
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.0 | 69.6 | | 15.0 | 6.3 | 63.3 | | 15.0 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 83.0 | | 27.0 | 5.0 | 83.0 | | 27.0 |
| Max Q Clear Time (g_c+I1), s | 10.0 | 19.5 | | 9.8 | 2.2 | 34.7 | | 0.0 |
| Green Ext Time (p_c), s | 0.0 | 19.2 | | 0.6 | 0.0 | 23.6 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 9.1 |
| HCM 6th LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 23 | 12 | 119 | 54 | 21 | 38 | 73 | 1436 | 50 | 58 | 1668 | 50 |
| Future Volume (veh/h) | 23 | 12 | 119 | 54 | 21 | 38 | 73 | 1436 | 50 | 58 | 1668 | 50 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 25 | 13 | 129 | 59 | 23 | 41 | 79 | 1561 | 54 | 63 | 1813 | 54 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 69 | 28 | 165 | 136 | 53 | 63 | 235 | 2244 | 77 | 278 | 2242 | 67 |
| Arrive On Green | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.05 | 0.65 | 0.65 | 0.05 | 0.65 | 0.65 |
| Sat Flow, veh/h | 161 | 217 | 1284 | 573 | 415 | 494 | 1781 | 3449 | 119 | 1781 | 3468 | 103 |
| Grp Volume(v), veh/h | 167 | 0 | 0 | 123 | 0 | 0 | 79 | 789 | 826 | 63 | 910 | 957 |
| Grp Sat Flow(s),veh/h/ln | 1662 | 0 | 0 | 1481 | 0 | 0 | 1781 | 1749 | 1819 | 1781 | 1749 | 1822 |
| Q Serve(g_s), s | 1.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 24.5 | 24.8 | 1.0 | 32.8 | 33.4 |
| Cycle Q Clear(g_c), s | 8.1 | 0.0 | 0.0 | 6.6 | 0.0 | 0.0 | 1.2 | 24.5 | 24.8 | 1.0 | 32.8 | 33.4 |
| Prop In Lane | 0.15 | | 0.77 | 0.48 | | 0.33 | 1.00 | | 0.07 | 1.00 | | 0.06 |
| Lane Grp Cap(c), veh/h | 262 | 0 | 0 | 252 | 0 | 0 | 235 | 1138 | 1184 | 278 | 1131 | 1178 |
| V/C Ratio(X) | 0.64 | 0.00 | 0.00 | 0.49 | 0.00 | 0.00 | 0.34 | 0.69 | 0.70 | 0.23 | 0.81 | 0.81 |
| Avail Cap(c_a), veh/h | 610 | 0 | 0 | 573 | 0 | 0 | 272 | 1597 | 1662 | 343 | 1618 | 1686 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.0 | 0.0 | 0.0 | 35.2 | 0.0 | 0.0 | 13.7 | 9.5 | 9.5 | 8.6 | 11.1 | 11.2 |
| Incr Delay (d2), s/veh | 2.6 | 0.0 | 0.0 | 1.5 | 0.0 | 0.0 | 0.8 | 0.8 | 0.8 | 0.4 | 2.0 | 2.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.4 | 0.0 | 0.0 | 2.4 | 0.0 | 0.0 | 0.7 | 6.8 | 7.1 | 0.3 | 9.4 | 9.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 38.6 | 0.0 | 0.0 | 36.6 | 0.0 | 0.0 | 14.6 | 10.3 | 10.3 | 9.0 | 13.1 | 13.3 |
| LnGrp LOS | D | A | A | D | A | A | B | B | B | A | B | B |
| Approach Vol, veh/h | | 167 | | | 123 | | | 1694 | | | 1930 | |
| Approach Delay, s/veh | | 38.6 | | | 36.6 | | | 10.5 | | | 13.1 | |
| Approach LOS | | D | | | D | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.9 | 60.6 | | 15.9 | 9.2 | 60.2 | | 15.9 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 7.0 | 78.0 | | 30.0 | 6.0 | 79.0 | | 30.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 3.0 | 26.8 | | 10.1 | 3.2 | 35.4 | | 8.6 | | | | |
| Green Ext Time (p_c), s | 0.0 | 15.5 | | 0.8 | 0.0 | 19.9 | | 0.6 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 13.8 |
| HCM 6th LOS | B |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 328 | 232 | 330 | 365 | 207 | 88 | 330 | 1419 | 321 | 83 | 1450 | 265 |
| Future Volume (veh/h) | 328 | 232 | 330 | 365 | 207 | 88 | 330 | 1419 | 321 | 83 | 1450 | 265 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 357 | 252 | 0 | 397 | 225 | 96 | 359 | 1542 | 0 | 90 | 1576 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 421 | 367 | | 453 | 256 | 109 | 416 | 2176 | | 111 | 1883 | |
| Arrive On Green | 0.12 | 0.20 | 0.00 | 0.13 | 0.21 | 0.21 | 0.12 | 0.43 | 0.00 | 0.06 | 0.37 | 0.00 |
| Sat Flow, veh/h | 3456 | 1870 | 1585 | 3456 | 1244 | 531 | 3456 | 5191 | 0 | 1781 | 5191 | 0 |
| Grp Volume(v), veh/h | 357 | 252 | 0 | 397 | 0 | 321 | 359 | 1542 | 0 | 90 | 1576 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1585 | 1728 | 0 | 1775 | 1728 | 1675 | 0 | 1781 | 1675 | 0 |
| Q Serve(g_s), s | 11.4 | 14.1 | 0.0 | 12.7 | 0.0 | 19.8 | 11.5 | 28.3 | 0.0 | 5.6 | 32.2 | 0.0 |
| Cycle Q Clear(g_c), s | 11.4 | 14.1 | 0.0 | 12.7 | 0.0 | 19.8 | 11.5 | 28.3 | 0.0 | 5.6 | 32.2 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.30 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 421 | 367 | | 453 | 0 | 365 | 416 | 2176 | | 111 | 1883 | |
| V/C Ratio(X) | 0.85 | 0.69 | | 0.88 | 0.00 | 0.88 | 0.86 | 0.71 | | 0.81 | 0.84 | |
| Avail Cap(c_a), veh/h | 490 | 564 | | 460 | 0 | 519 | 429 | 2407 | | 111 | 2095 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 48.5 | 42.1 | 0.0 | 48.1 | 0.0 | 43.4 | 48.7 | 26.1 | 0.0 | 52.2 | 32.1 | 0.0 |
| Incr Delay (d2), s/veh | 11.6 | 2.3 | 0.0 | 17.1 | 0.0 | 11.9 | 16.1 | 0.9 | 0.0 | 35.4 | 2.9 | 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(50%),veh/ln | 5.5 | 6.7 | 0.0 | 6.5 | 0.0 | 9.7 | 5.7 | 10.7 | 0.0 | 3.5 | 12.7 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 60.1 | 44.3 | 0.0 | 65.1 | 0.0 | 55.4 | 64.8 | 27.0 | 0.0 | 87.6 | 35.0 | 0.0 |
| LnGrp LOS | E | D | | E | A | E | E | C | | F | C | |
| Approach Vol, veh/h | | 609 | | | 718 | | | 1901 | | | 1666 | |
| Approach Delay, s/veh | | 53.6 | | | 60.8 | | | 34.1 | | | 37.8 | |
| Approach LOS | | D | | | E | | | C | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 12.0 | 53.8 | 19.8 | 27.2 | 18.6 | 47.3 | 18.8 | 28.2 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 7.0 | 54.0 | 15.0 | 34.0 | 14.0 | 47.0 | 16.0 | 33.0 |
| Max Q Clear Time (g_c+I1), s | 7.6 | 30.3 | 14.7 | 16.1 | 13.5 | 34.2 | 13.4 | 21.8 |
| Green Ext Time (p_c), s | 0.0 | 11.6 | 0.0 | 1.2 | 0.1 | 8.0 | 0.3 | 1.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 41.7 |
| HCM 6th LOS | D |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 177 | 0 | 25 | 0 | 0 | 0 | 10 | 1530 | 0 | 0 | 1409 | 156 |
| Future Volume (veh/h) | 177 | 0 | 25 | 0 | 0 | 0 | 10 | 1530 | 0 | 0 | 1409 | 156 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 192 | 0 | 27 | 0 | 0 | 0 | 11 | 1663 | 0 | 0 | 1532 | 170 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 315 | 0 | 32 | 0 | 343 | 0 | 186 | 2422 | 0 | 215 | 1960 | 215 |
| Arrive On Green | 0.18 | 0.00 | 0.18 | 0.00 | 0.00 | 0.00 | 0.01 | 0.69 | 0.00 | 0.00 | 0.62 | 0.62 |
| Sat Flow, veh/h | 1259 | 0 | 177 | 0 | 1870 | 0 | 1781 | 3589 | 0 | 1781 | 3178 | 349 |
| Grp Volume(v), veh/h | 219 | 0 | 0 | 0 | 0 | 0 | 11 | 1663 | 0 | 0 | 836 | 866 |
| Grp Sat Flow(s),veh/h/ln | 1436 | 0 | 0 | 0 | 1870 | 0 | 1781 | 1749 | 0 | 1781 | 1749 | 1778 |
| Q Serve(g_s), s | 11.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 22.5 | 0.0 | 0.0 | 28.2 | 29.3 |
| Cycle Q Clear(g_c), s | 11.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 22.5 | 0.0 | 0.0 | 28.2 | 29.3 |
| Prop In Lane | 0.88 | | 0.12 | 0.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.20 |
| Lane Grp Cap(c), veh/h | 347 | 0 | 0 | 0 | 343 | 0 | 186 | 2422 | 0 | 215 | 1079 | 1097 |
| V/C Ratio(X) | 0.63 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.06 | 0.69 | 0.00 | 0.00 | 0.77 | 0.79 |
| Avail Cap(c_a), veh/h | 583 | 0 | 0 | 0 | 650 | 0 | 273 | 3562 | 0 | 324 | 1781 | 1811 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.1 | 7.3 | 0.0 | 0.0 | 11.3 | 11.5 |
| Incr Delay (d2), s/veh | 1.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.4 | 0.0 | 0.0 | 1.2 | 1.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 5.4 | 0.0 | 0.0 | 8.4 | 8.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 33.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.3 | 7.6 | 0.0 | 0.0 | 12.5 | 12.8 |
| LnGrp LOS | C | A | A | A | A | A | B | A | A | A | B | B |
| Approach Vol, veh/h | | 219 | | | 0 | | | 1674 | | | 1702 | |
| Approach Delay, s/veh | | 33.6 | | | 0.0 | | | 7.6 | | | 12.7 | |
| Approach LOS | | C | | | | | | A | | | B | |

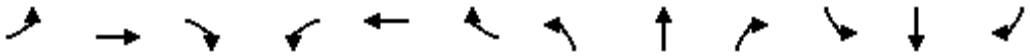
| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.0 | 60.8 | | 19.8 | 6.1 | 54.7 | | 19.8 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 82.0 | | 28.0 | 5.0 | 82.0 | | 28.0 |
| Max Q Clear Time (g_c+I1), s | 10.0 | 24.5 | | 13.8 | 2.2 | 31.3 | | 0.0 |
| Green Ext Time (p_c), s | 0.0 | 19.5 | | 1.0 | 0.0 | 18.3 | | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 11.6 |
| HCM 6th LOS | | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 29 | 29 | 38 | 35 | 13 | 50 | 81 | 1396 | 44 | 61 | 1402 | 52 |
| Future Volume (veh/h) | 29 | 29 | 38 | 35 | 13 | 50 | 81 | 1396 | 44 | 61 | 1402 | 52 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 32 | 32 | 41 | 38 | 14 | 54 | 88 | 1517 | 48 | 66 | 1524 | 57 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 115 | 60 | 63 | 126 | 31 | 81 | 319 | 2099 | 66 | 313 | 2057 | 77 |
| Arrive On Green | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.06 | 0.61 | 0.61 | 0.05 | 0.60 | 0.60 |
| Sat Flow, veh/h | 409 | 635 | 669 | 495 | 330 | 857 | 1781 | 3460 | 109 | 1781 | 3438 | 128 |
| Grp Volume(v), veh/h | 105 | 0 | 0 | 106 | 0 | 0 | 88 | 765 | 800 | 66 | 773 | 808 |
| Grp Sat Flow(s),veh/h/ln | 1713 | 0 | 0 | 1682 | 0 | 0 | 1781 | 1749 | 1821 | 1781 | 1749 | 1818 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 1.1 | 18.8 | 19.0 | 0.8 | 19.6 | 19.8 |
| Cycle Q Clear(g_c), s | 3.4 | 0.0 | 0.0 | 3.5 | 0.0 | 0.0 | 1.1 | 18.8 | 19.0 | 0.8 | 19.6 | 19.8 |
| Prop In Lane | 0.30 | | 0.39 | 0.36 | | 0.51 | 1.00 | | 0.06 | 1.00 | | 0.07 |
| Lane Grp Cap(c), veh/h | 238 | 0 | 0 | 239 | 0 | 0 | 319 | 1061 | 1104 | 313 | 1046 | 1087 |
| V/C Ratio(X) | 0.44 | 0.00 | 0.00 | 0.44 | 0.00 | 0.00 | 0.28 | 0.72 | 0.72 | 0.21 | 0.74 | 0.74 |
| Avail Cap(c_a), veh/h | 855 | 0 | 0 | 833 | 0 | 0 | 467 | 2219 | 2310 | 418 | 2162 | 2247 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 26.8 | 0.0 | 0.0 | 26.8 | 0.0 | 0.0 | 8.1 | 8.5 | 8.5 | 7.3 | 8.9 | 8.9 |
| Incr Delay (d2), s/veh | 1.3 | 0.0 | 0.0 | 1.3 | 0.0 | 0.0 | 0.5 | 0.9 | 0.9 | 0.3 | 1.0 | 1.0 |
| 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(50%),veh/ln | 1.4 | 0.0 | 0.0 | 1.4 | 0.0 | 0.0 | 0.2 | 4.3 | 4.5 | 0.2 | 4.6 | 4.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 28.1 | 0.0 | 0.0 | 28.1 | 0.0 | 0.0 | 8.5 | 9.4 | 9.4 | 7.6 | 9.9 | 10.0 |
| LnGrp LOS | C | A | A | C | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 105 | | | 106 | | | 1653 | | | 1647 | |
| Approach Delay, s/veh | | 28.1 | | | 28.1 | | | 9.4 | | | 9.9 | |
| Approach LOS | | C | | | C | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.4 | 42.3 | | 10.8 | 8.9 | 41.8 | | 10.8 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 7.0 | 78.0 | | 30.0 | 9.0 | 76.0 | | 30.0 |
| Max Q Clear Time (g_c+I1), s | 2.8 | 21.0 | | 5.4 | 3.1 | 21.8 | | 5.5 |
| Green Ext Time (p_c), s | 0.0 | 14.8 | | 0.5 | 0.1 | 15.0 | | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 10.7 |
| HCM 6th LOS | B |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 265 | 171 | 288 | 309 | 140 | 67 | 307 | 1298 | 263 | 40 | 1379 | 217 |
| Future Volume (veh/h) | 265 | 171 | 288 | 309 | 140 | 67 | 307 | 1298 | 263 | 40 | 1379 | 217 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 288 | 186 | 0 | 336 | 152 | 73 | 334 | 1411 | 0 | 43 | 1499 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 377 | 272 | | 417 | 187 | 90 | 411 | 2417 | | 64 | 2001 | |
| Arrive On Green | 0.11 | 0.15 | 0.00 | 0.12 | 0.16 | 0.16 | 0.12 | 0.48 | 0.00 | 0.04 | 0.40 | 0.00 |
| Sat Flow, veh/h | 3456 | 1870 | 1585 | 3456 | 1194 | 573 | 3456 | 5191 | 0 | 1781 | 5191 | 0 |
| Grp Volume(v), veh/h | 288 | 186 | 0 | 336 | 0 | 225 | 334 | 1411 | 0 | 43 | 1499 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1585 | 1728 | 0 | 1767 | 1728 | 1675 | 0 | 1781 | 1675 | 0 |
| Q Serve(g_s), s | 7.5 | 8.7 | 0.0 | 8.7 | 0.0 | 11.3 | 8.7 | 18.7 | 0.0 | 2.2 | 23.6 | 0.0 |
| Cycle Q Clear(g_c), s | 7.5 | 8.7 | 0.0 | 8.7 | 0.0 | 11.3 | 8.7 | 18.7 | 0.0 | 2.2 | 23.6 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.32 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 377 | 272 | | 417 | 0 | 277 | 411 | 2417 | | 64 | 2001 | |
| V/C Ratio(X) | 0.76 | 0.68 | | 0.81 | 0.00 | 0.81 | 0.81 | 0.58 | | 0.67 | 0.75 | |
| Avail Cap(c_a), veh/h | 637 | 690 | | 525 | 0 | 594 | 487 | 3108 | | 97 | 2672 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 39.9 | 37.4 | 0.0 | 39.5 | 0.0 | 37.5 | 39.6 | 17.3 | 0.0 | 43.9 | 23.8 | 0.0 |
| Incr Delay (d2), s/veh | 3.3 | 3.0 | 0.0 | 7.2 | 0.0 | 5.7 | 8.7 | 0.2 | 0.0 | 11.2 | 0.8 | 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(50%),veh/ln | 3.3 | 4.1 | 0.0 | 4.0 | 0.0 | 5.2 | 4.0 | 6.4 | 0.0 | 1.1 | 8.6 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 43.2 | 40.4 | 0.0 | 46.7 | 0.0 | 43.2 | 48.3 | 17.5 | 0.0 | 55.1 | 24.6 | 0.0 |
| LnGrp LOS | D | D | | D | A | D | D | B | | E | C | |
| Approach Vol, veh/h | | 474 | | | 561 | | | 1745 | | | 1542 | |
| Approach Delay, s/veh | | 42.1 | | | 45.3 | | | 23.4 | | | 25.5 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.3 | 49.3 | 16.1 | 18.4 | 16.0 | 41.7 | 15.0 | 19.5 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 57.0 | 14.0 | 34.0 | 13.0 | 49.0 | 17.0 | 31.0 |
| Max Q Clear Time (g_c+I1), s | 4.2 | 20.7 | 10.7 | 10.7 | 10.7 | 25.6 | 9.5 | 13.3 |
| Green Ext Time (p_c), s | 0.0 | 12.2 | 0.4 | 0.9 | 0.3 | 11.1 | 0.6 | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 29.0 |
| HCM 6th LOS | C |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 171 | 0 | 15 | 0 | 0 | 0 | 17 | 1338 | 0 | 0 | 1405 | 157 |
| Future Volume (veh/h) | 171 | 0 | 15 | 0 | 0 | 0 | 17 | 1338 | 0 | 0 | 1405 | 157 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 186 | 0 | 16 | 0 | 0 | 0 | 18 | 1454 | 0 | 0 | 1527 | 171 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 313 | 0 | 19 | 0 | 321 | 0 | 202 | 2457 | 0 | 273 | 1964 | 218 |
| Arrive On Green | 0.17 | 0.00 | 0.17 | 0.00 | 0.00 | 0.00 | 0.02 | 0.70 | 0.00 | 0.00 | 0.62 | 0.62 |
| Sat Flow, veh/h | 1316 | 0 | 113 | 0 | 1870 | 0 | 1781 | 3589 | 0 | 1781 | 3174 | 352 |
| Grp Volume(v), veh/h | 202 | 0 | 0 | 0 | 0 | 0 | 18 | 1454 | 0 | 0 | 834 | 864 |
| Grp Sat Flow(s),veh/h/ln | 1429 | 0 | 0 | 0 | 1870 | 0 | 1781 | 1749 | 0 | 1781 | 1749 | 1777 |
| Q Serve(g_s), s | 10.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 16.8 | 0.0 | 0.0 | 27.5 | 28.6 |
| Cycle Q Clear(g_c), s | 10.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 16.8 | 0.0 | 0.0 | 27.5 | 28.6 |
| Prop In Lane | 0.92 | | 0.08 | 0.00 | | 0.00 | 1.00 | | 0.00 | 1.00 | | 0.20 |
| Lane Grp Cap(c), veh/h | 332 | 0 | 0 | 0 | 321 | 0 | 202 | 2457 | 0 | 273 | 1082 | 1100 |
| V/C Ratio(X) | 0.61 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.09 | 0.59 | 0.00 | 0.00 | 0.77 | 0.79 |
| Avail Cap(c_a), veh/h | 574 | 0 | 0 | 0 | 637 | 0 | 278 | 3663 | 0 | 383 | 1832 | 1862 |
| 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 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 31.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.8 | 6.0 | 0.0 | 0.0 | 11.0 | 11.2 |
| Incr Delay (d2), s/veh | 1.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | 1.2 | 1.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 8.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 3.8 | 0.0 | 0.0 | 8.1 | 8.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 33.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 11.0 | 6.2 | 0.0 | 0.0 | 12.2 | 12.5 |
| LnGrp LOS | C | A | A | A | A | A | B | A | A | A | B | B |
| Approach Vol, veh/h | | 202 | | | 0 | | | 1472 | | | 1698 | |
| Approach Delay, s/veh | | 33.5 | | | 0.0 | | | 6.3 | | | 12.4 | |
| Approach LOS | | C | | | | | | A | | | B | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 10.0 | 60.7 | | 18.6 | 6.6 | 54.0 | | 18.6 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 83.0 | | 27.0 | 5.0 | 83.0 | | 27.0 |
| Max Q Clear Time (g_c+I1), s | 10.0 | 18.8 | | 12.8 | 2.3 | 30.6 | | 0.0 |
| Green Ext Time (p_c), s | 0.0 | 15.4 | | 0.9 | 0.0 | 18.4 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.0 |
| HCM 6th LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 44 | 10 | 40 | 35 | 6 | 42 | 50 | 1235 | 29 | 52 | 1356 | 56 |
| Future Volume (veh/h) | 44 | 10 | 40 | 35 | 6 | 42 | 50 | 1235 | 29 | 52 | 1356 | 56 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 48 | 11 | 43 | 38 | 7 | 46 | 54 | 1342 | 32 | 57 | 1474 | 61 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 157 | 25 | 66 | 144 | 23 | 80 | 312 | 2067 | 49 | 351 | 2032 | 84 |
| Arrive On Green | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.05 | 0.59 | 0.59 | 0.05 | 0.59 | 0.59 |
| Sat Flow, veh/h | 685 | 271 | 697 | 582 | 246 | 846 | 1781 | 3491 | 83 | 1781 | 3423 | 141 |
| Grp Volume(v), veh/h | 102 | 0 | 0 | 91 | 0 | 0 | 54 | 672 | 702 | 57 | 751 | 784 |
| Grp Sat Flow(s),veh/h/ln | 1653 | 0 | 0 | 1674 | 0 | 0 | 1781 | 1749 | 1826 | 1781 | 1749 | 1815 |
| Q Serve(g_s), s | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 14.6 | 14.6 | 0.7 | 17.5 | 17.7 |
| Cycle Q Clear(g_c), s | 3.2 | 0.0 | 0.0 | 2.8 | 0.0 | 0.0 | 0.6 | 14.6 | 14.6 | 0.7 | 17.5 | 17.7 |
| Prop In Lane | 0.47 | | 0.42 | 0.42 | | 0.51 | 1.00 | | 0.05 | 1.00 | | 0.08 |
| Lane Grp Cap(c), veh/h | 248 | 0 | 0 | 247 | 0 | 0 | 312 | 1035 | 1081 | 351 | 1038 | 1078 |
| V/C Ratio(X) | 0.41 | 0.00 | 0.00 | 0.37 | 0.00 | 0.00 | 0.17 | 0.65 | 0.65 | 0.16 | 0.72 | 0.73 |
| Avail Cap(c_a), veh/h | 887 | 0 | 0 | 888 | 0 | 0 | 409 | 2411 | 2518 | 445 | 2411 | 2503 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 24.9 | 0.0 | 0.0 | 24.8 | 0.0 | 0.0 | 7.0 | 7.7 | 7.7 | 5.9 | 8.3 | 8.3 |
| Incr Delay (d2), s/veh | 1.1 | 0.0 | 0.0 | 0.9 | 0.0 | 0.0 | 0.3 | 0.7 | 0.7 | 0.2 | 1.0 | 1.0 |
| 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(50%),veh/ln | 1.3 | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 | 0.1 | 3.2 | 3.3 | 0.1 | 3.8 | 4.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 26.0 | 0.0 | 0.0 | 25.7 | 0.0 | 0.0 | 7.3 | 8.4 | 8.4 | 6.1 | 9.3 | 9.3 |
| LnGrp LOS | C | A | A | C | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 102 | | | 91 | | | 1428 | | | 1592 | |
| Approach Delay, s/veh | | 26.0 | | | 25.7 | | | 8.4 | | | 9.2 | |
| Approach LOS | | C | | | C | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.0 | 38.9 | | 10.4 | 7.9 | 39.0 | | 10.4 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 6.0 | 79.0 | | 30.0 | 6.0 | 79.0 | | 30.0 |
| Max Q Clear Time (g_c+I1), s | 2.7 | 16.6 | | 5.2 | 2.6 | 19.7 | | 4.8 |
| Green Ext Time (p_c), s | 0.0 | 11.5 | | 0.5 | 0.0 | 14.3 | | 0.4 |

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 3 | 0 | 0 | 3 | 0 | 2 | 1 | 789 | 3 | 2 | 672 | 26 |
| Future Volume (veh/h) | 3 | 0 | 0 | 3 | 0 | 2 | 1 | 789 | 3 | 2 | 672 | 26 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 3 | 0 | 0 | 3 | 0 | 2 | 1 | 822 | 3 | 2 | 700 | 27 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 280 | 0 | 0 | 221 | 0 | 7 | 485 | 1562 | 6 | 449 | 1506 | 58 |
| Arrive On Green | 0.01 | 0.00 | 0.00 | 0.01 | 0.00 | 0.01 | 0.00 | 0.44 | 0.44 | 0.00 | 0.44 | 0.44 |
| Sat Flow, veh/h | 1516 | 0 | 0 | 919 | 0 | 613 | 1781 | 3574 | 13 | 1781 | 3433 | 132 |
| Grp Volume(v), veh/h | 3 | 0 | 0 | 5 | 0 | 0 | 1 | 402 | 423 | 2 | 356 | 371 |
| Grp Sat Flow(s),veh/h/ln | 1516 | 0 | 0 | 1532 | 0 | 0 | 1781 | 1749 | 1838 | 1781 | 1749 | 1817 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 4.6 | 4.6 | 0.0 | 3.9 | 3.9 |
| Cycle Q Clear(g_c), s | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 4.6 | 4.6 | 0.0 | 3.9 | 3.9 |
| Prop In Lane | 1.00 | | 0.00 | 0.60 | | 0.40 | 1.00 | | 0.01 | 1.00 | | 0.07 |
| Lane Grp Cap(c), veh/h | 280 | 0 | 0 | 227 | 0 | 0 | 485 | 764 | 804 | 449 | 767 | 797 |
| V/C Ratio(X) | 0.01 | 0.00 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.53 | 0.53 | 0.00 | 0.46 | 0.47 |
| Avail Cap(c_a), veh/h | 1664 | 0 | 0 | 1675 | 0 | 0 | 1065 | 5059 | 5318 | 1029 | 5059 | 5256 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 13.4 | 0.0 | 0.0 | 13.4 | 0.0 | 0.0 | 4.6 | 5.6 | 5.6 | 4.7 | 5.4 | 5.4 |
| Incr Delay (d2), s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 0.5 | 0.0 | 0.4 | 0.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.5 | 0.0 | 0.4 | 0.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 13.4 | 0.0 | 0.0 | 13.4 | 0.0 | 0.0 | 4.6 | 6.2 | 6.2 | 4.7 | 5.8 | 5.8 |
| LnGrp LOS | B | A | A | B | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 3 | | | 5 | | | 826 | | | 729 | |
| Approach Delay, s/veh | | 13.4 | | | 13.4 | | | 6.2 | | | 5.8 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.1 | 16.9 | | 5.3 | 5.0 | 17.0 | | 5.3 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 9.3 | 79.0 | | 27.0 | 9.0 | 79.0 | | 27.0 |
| Max Q Clear Time (g_c+I1), s | 2.0 | 6.6 | | 2.0 | 2.0 | 5.9 | | 2.1 |
| Green Ext Time (p_c), s | 0.0 | 5.3 | | 0.0 | 0.0 | 4.5 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 6.0 |
| HCM 6th LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 3 | 4 | 29 | 22 | 12 | 26 | 80 | 752 | 37 | 14 | 619 | 10 |
| Future Volume (veh/h) | 3 | 4 | 29 | 22 | 12 | 26 | 80 | 752 | 37 | 14 | 619 | 10 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 3 | 4 | 31 | 23 | 13 | 28 | 85 | 800 | 39 | 15 | 659 | 11 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 132 | 19 | 125 | 206 | 34 | 66 | 528 | 1396 | 68 | 414 | 1224 | 20 |
| Arrive On Green | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.08 | 0.41 | 0.41 | 0.02 | 0.35 | 0.35 |
| Sat Flow, veh/h | 98 | 203 | 1336 | 545 | 360 | 704 | 1781 | 3394 | 165 | 1781 | 3520 | 59 |
| Grp Volume(v), veh/h | 38 | 0 | 0 | 64 | 0 | 0 | 85 | 412 | 427 | 15 | 327 | 343 |
| Grp Sat Flow(s),veh/h/ln | 1637 | 0 | 0 | 1609 | 0 | 0 | 1781 | 1749 | 1811 | 1781 | 1749 | 1830 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.9 | 5.7 | 5.7 | 0.2 | 4.7 | 4.7 |
| Cycle Q Clear(g_c), s | 0.7 | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 | 0.9 | 5.7 | 5.7 | 0.2 | 4.7 | 4.7 |
| Prop In Lane | 0.08 | | 0.82 | 0.36 | | 0.44 | 1.00 | | 0.09 | 1.00 | | 0.03 |
| Lane Grp Cap(c), veh/h | 276 | 0 | 0 | 306 | 0 | 0 | 528 | 719 | 745 | 414 | 608 | 636 |
| V/C Ratio(X) | 0.14 | 0.00 | 0.00 | 0.21 | 0.00 | 0.00 | 0.16 | 0.57 | 0.57 | 0.04 | 0.54 | 0.54 |
| Avail Cap(c_a), veh/h | 1892 | 0 | 0 | 1877 | 0 | 0 | 1114 | 3935 | 4075 | 887 | 3713 | 3886 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 13.3 | 0.0 | 0.0 | 13.4 | 0.0 | 0.0 | 5.8 | 7.2 | 7.2 | 6.6 | 8.3 | 8.3 |
| Incr Delay (d2), s/veh | 0.2 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.1 | 0.7 | 0.7 | 0.0 | 0.7 | 0.7 |
| 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(50%),veh/ln | 0.2 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.1 | 0.9 | 0.9 | 0.0 | 0.9 | 0.9 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 13.5 | 0.0 | 0.0 | 13.8 | 0.0 | 0.0 | 5.9 | 7.9 | 7.8 | 6.6 | 9.0 | 9.0 |
| LnGrp LOS | B | A | A | B | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 38 | | | 64 | | | 924 | | | 685 | |
| Approach Delay, s/veh | | 13.5 | | | 13.8 | | | 7.7 | | | 8.9 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.6 | 18.0 | | 8.0 | 7.6 | 16.0 | | 8.0 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 9.6 | 71.0 | | 35.0 | 13.0 | 67.0 | | 35.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.2 | 7.7 | | 2.7 | 2.9 | 6.7 | | 3.1 | | | | |
| Green Ext Time (p_c), s | 0.0 | 5.3 | | 0.2 | 0.1 | 3.9 | | 0.3 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 8.5 |
| HCM 6th LOS | A |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 19 | 23 | 760 | 19 | 22 | 698 |
| Future Vol, veh/h | 19 | 23 | 760 | 19 | 22 | 698 |
| 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 | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 21 | 25 | 826 | 21 | 24 | 759 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1265 | 424 | 0 | 0 | 847 | 0 |
| Stage 1 | 837 | - | - | - | - | - |
| Stage 2 | 428 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | 161 | 579 | - | - | 786 | - |
| Stage 1 | 385 | - | - | - | - | - |
| Stage 2 | 625 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 156 | 579 | - | - | 786 | - |
| Mov Cap-2 Maneuver | 281 | - | - | - | - | - |
| Stage 1 | 385 | - | - | - | - | - |
| Stage 2 | 606 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 14.8 | 0 | 0.3 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 281 | 579 | 786 | - |
| HCM Lane V/C Ratio | - | - | 0.073 | 0.043 | 0.03 | - |
| HCM Control Delay (s) | - | - | 18.8 | 11.5 | 9.7 | - |
| HCM Lane LOS | - | - | C | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.2 | 0.1 | 0.1 | - |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 39 | 40 | 739 | 55 | 56 | 661 |
| Future Volume (veh/h) | 39 | 40 | 739 | 55 | 56 | 661 |
| 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 | 1841 | 1870 | 1870 | 1841 |
| Adj Flow Rate, veh/h | 42 | 43 | 803 | 60 | 61 | 718 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 4 | 2 | 2 | 4 |
| Cap, veh/h | 67 | 69 | 1369 | 102 | 471 | 2188 |
| Arrive On Green | 0.08 | 0.08 | 0.42 | 0.42 | 0.06 | 0.63 |
| Sat Flow, veh/h | 820 | 839 | 3391 | 246 | 1781 | 3589 |
| Grp Volume(v), veh/h | 86 | 0 | 426 | 437 | 61 | 718 |
| Grp Sat Flow(s),veh/h/ln | 1678 | 0 | 1749 | 1796 | 1781 | 1749 |
| Q Serve(g_s), s | 1.7 | 0.0 | 6.4 | 6.4 | 0.6 | 3.3 |
| Cycle Q Clear(g_c), s | 1.7 | 0.0 | 6.4 | 6.4 | 0.6 | 3.3 |
| Prop In Lane | 0.49 | 0.50 | | 0.14 | 1.00 | |
| Lane Grp Cap(c), veh/h | 137 | 0 | 726 | 746 | 471 | 2188 |
| V/C Ratio(X) | 0.63 | 0.00 | 0.59 | 0.59 | 0.13 | 0.33 |
| Avail Cap(c_a), veh/h | 1572 | 0 | 3634 | 3733 | 982 | 9008 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.2 | 0.0 | 7.7 | 7.7 | 4.9 | 3.0 |
| Incr Delay (d2), s/veh | 4.7 | 0.0 | 0.8 | 0.7 | 0.1 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.7 | 0.0 | 1.3 | 1.3 | 0.1 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 19.8 | 0.0 | 8.5 | 8.5 | 5.1 | 3.1 |
| LnGrp LOS | B | A | A | A | A | A |
| Approach Vol, veh/h | 86 | | 863 | | | 779 |
| Approach Delay, s/veh | 19.8 | | 8.5 | | | 3.3 |
| Approach LOS | B | | A | | | A |

| Timer - Assigned Phs | 1 | 2 | | | 6 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.2 | 19.2 | | | 26.4 | 7.8 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 12.0 | 71.0 | | | 88.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.6 | 8.4 | | | 5.3 | 3.7 |
| Green Ext Time (p_c), s | 0.1 | 5.7 | | | 5.2 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 6.7 |
| HCM 6th LOS | A |

**Notes**

User approved volume balancing among the lanes for turning movement.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 62 | 0 | 11 | 7 | 0 | 4 | 7 | 987 | 6 | 4 | 1079 | 77 |
| Future Volume (veh/h) | 62 | 0 | 11 | 7 | 0 | 4 | 7 | 987 | 6 | 4 | 1079 | 77 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 65 | 0 | 11 | 7 | 0 | 4 | 7 | 1028 | 6 | 4 | 1124 | 80 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 266 | 0 | 16 | 215 | 17 | 47 | 335 | 1917 | 11 | 383 | 1768 | 126 |
| Arrive On Green | 0.08 | 0.00 | 0.08 | 0.08 | 0.00 | 0.08 | 0.01 | 0.54 | 0.54 | 0.01 | 0.53 | 0.53 |
| Sat Flow, veh/h | 1250 | 0 | 212 | 852 | 215 | 610 | 1781 | 3565 | 21 | 1781 | 3311 | 236 |
| Grp Volume(v), veh/h | 76 | 0 | 0 | 11 | 0 | 0 | 7 | 504 | 530 | 4 | 593 | 611 |
| Grp Sat Flow(s),veh/h/ln | 1462 | 0 | 0 | 1677 | 0 | 0 | 1781 | 1749 | 1837 | 1781 | 1749 | 1798 |
| Q Serve(g_s), s | 1.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 7.4 | 7.4 | 0.0 | 9.5 | 9.5 |
| Cycle Q Clear(g_c), s | 2.0 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.1 | 7.4 | 7.4 | 0.0 | 9.5 | 9.5 |
| Prop In Lane | 0.86 | | 0.14 | 0.64 | | 0.36 | 1.00 | | 0.01 | 1.00 | | 0.13 |
| Lane Grp Cap(c), veh/h | 282 | 0 | 0 | 279 | 0 | 0 | 335 | 940 | 988 | 383 | 933 | 960 |
| V/C Ratio(X) | 0.27 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.02 | 0.54 | 0.54 | 0.01 | 0.64 | 0.64 |
| Avail Cap(c_a), veh/h | 1259 | 0 | 0 | 1276 | 0 | 0 | 634 | 3447 | 3621 | 688 | 3447 | 3545 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 17.7 | 0.0 | 0.0 | 16.9 | 0.0 | 0.0 | 5.3 | 5.9 | 5.9 | 4.9 | 6.5 | 6.5 |
| Incr Delay (d2), s/veh | 0.5 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.5 | 0.5 | 0.0 | 0.7 | 0.7 |
| 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(50%),veh/ln | 0.6 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 1.2 | 1.3 | 0.0 | 1.6 | 1.6 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 18.2 | 0.0 | 0.0 | 17.0 | 0.0 | 0.0 | 5.3 | 6.4 | 6.4 | 4.9 | 7.2 | 7.2 |
| LnGrp LOS | B | A | A | B | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 76 | | | 11 | | | 1041 | | | 1208 | |
| Approach Delay, s/veh | | 18.2 | | | 17.0 | | | 6.4 | | | 7.2 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.2 | 26.3 | | 8.1 | 5.4 | 26.1 | | 8.1 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 7.0 | 78.0 | | 30.0 | 7.0 | 78.0 | | 30.0 |
| Max Q Clear Time (g_c+I1), s | 2.0 | 9.4 | | 4.0 | 2.1 | 11.5 | | 2.2 |
| Green Ext Time (p_c), s | 0.0 | 7.4 | | 0.4 | 0.0 | 9.6 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 7.3 |
| HCM 6th LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 14 | 7 | 69 | 31 | 12 | 23 | 43 | 952 | 29 | 35 | 1093 | 30 |
| Future Volume (veh/h) | 14 | 7 | 69 | 31 | 12 | 23 | 43 | 952 | 29 | 35 | 1093 | 30 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 15 | 7 | 72 | 32 | 12 | 24 | 45 | 992 | 30 | 36 | 1139 | 31 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 117 | 19 | 124 | 190 | 43 | 59 | 377 | 1747 | 53 | 411 | 1726 | 47 |
| Arrive On Green | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.05 | 0.50 | 0.50 | 0.04 | 0.50 | 0.50 |
| Sat Flow, veh/h | 183 | 193 | 1231 | 650 | 424 | 586 | 1781 | 3466 | 105 | 1781 | 3478 | 95 |
| Grp Volume(v), veh/h | 94 | 0 | 0 | 68 | 0 | 0 | 45 | 501 | 521 | 36 | 573 | 597 |
| Grp Sat Flow(s),veh/h/ln | 1608 | 0 | 0 | 1660 | 0 | 0 | 1781 | 1749 | 1822 | 1781 | 1749 | 1824 |
| Q Serve(g_s), s | 0.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 8.4 | 8.4 | 0.4 | 10.4 | 10.4 |
| Cycle Q Clear(g_c), s | 2.3 | 0.0 | 0.0 | 1.5 | 0.0 | 0.0 | 0.5 | 8.4 | 8.4 | 0.4 | 10.4 | 10.4 |
| Prop In Lane | 0.16 | | 0.77 | 0.47 | | 0.35 | 1.00 | | 0.06 | 1.00 | | 0.05 |
| Lane Grp Cap(c), veh/h | 260 | 0 | 0 | 292 | 0 | 0 | 377 | 882 | 919 | 411 | 868 | 905 |
| V/C Ratio(X) | 0.36 | 0.00 | 0.00 | 0.23 | 0.00 | 0.00 | 0.12 | 0.57 | 0.57 | 0.09 | 0.66 | 0.66 |
| Avail Cap(c_a), veh/h | 1360 | 0 | 0 | 1336 | 0 | 0 | 585 | 3058 | 3186 | 633 | 3058 | 3189 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 18.1 | 0.0 | 0.0 | 17.8 | 0.0 | 0.0 | 5.9 | 7.3 | 7.3 | 5.5 | 8.0 | 8.0 |
| Incr Delay (d2), s/veh | 0.8 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.1 | 0.6 | 0.6 | 0.1 | 0.9 | 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(50%),veh/ln | 0.8 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.1 | 1.6 | 1.6 | 0.1 | 2.0 | 2.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 19.0 | 0.0 | 0.0 | 18.2 | 0.0 | 0.0 | 6.0 | 7.9 | 7.8 | 5.5 | 8.8 | 8.8 |
| LnGrp LOS | B | A | A | B | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 94 | | | 68 | | | 1067 | | | 1206 | |
| Approach Delay, s/veh | | 19.0 | | | 18.2 | | | 7.8 | | | 8.7 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.7 | 26.3 | | 9.3 | 7.1 | 26.0 | | 9.3 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 7.0 | 74.0 | | 34.0 | 7.0 | 74.0 | | 34.0 |
| Max Q Clear Time (g_c+I1), s | 2.4 | 10.4 | | 4.3 | 2.5 | 12.4 | | 3.5 |
| Green Ext Time (p_c), s | 0.0 | 7.0 | | 0.5 | 0.0 | 8.6 | | 0.3 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 9.0 |
| HCM 6th LOS | A |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 25 | 30 | 1035 | 25 | 31 | 1133 |
| Future Vol, veh/h | 25 | 30 | 1035 | 25 | 31 | 1133 |
| 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 | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 27 | 33 | 1125 | 27 | 34 | 1232 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1823 | 576 | 0 | 0 | 1152 | 0 |
| Stage 1 | 1139 | - | - | - | - | - |
| Stage 2 | 684 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | 69 | 460 | - | - | 602 | - |
| Stage 1 | 267 | - | - | - | - | - |
| Stage 2 | 462 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 65 | 460 | - | - | 602 | - |
| Mov Cap-2 Maneuver | 179 | - | - | - | - | - |
| Stage 1 | 267 | - | - | - | - | - |
| Stage 2 | 436 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 20.4 | 0 | 0.3 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 179 | 460 | 602 | - |
| HCM Lane V/C Ratio | - | - | 0.152 | 0.071 | 0.056 | - |
| HCM Control Delay (s) | - | - | 28.7 | 13.4 | 11.3 | - |
| HCM Lane LOS | - | - | D | B | B | - |
| HCM 95th %tile Q(veh) | - | - | 0.5 | 0.2 | 0.2 | - |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 106 | 108 | 952 | 101 | 104 | 1054 |
| Future Volume (veh/h) | 106 | 108 | 952 | 101 | 104 | 1054 |
| 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 | 1841 | 1870 | 1870 | 1841 |
| Adj Flow Rate, veh/h | 115 | 117 | 1035 | 110 | 113 | 1146 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 4 | 2 | 2 | 4 |
| Cap, veh/h | 147 | 150 | 1475 | 157 | 372 | 2215 |
| Arrive On Green | 0.18 | 0.18 | 0.46 | 0.46 | 0.08 | 0.63 |
| Sat Flow, veh/h | 828 | 842 | 3282 | 339 | 1781 | 3589 |
| Grp Volume(v), veh/h | 233 | 0 | 567 | 578 | 113 | 1146 |
| Grp Sat Flow(s),veh/h/ln | 1677 | 0 | 1749 | 1780 | 1781 | 1749 |
| Q Serve(g_s), s | 7.0 | 0.0 | 13.7 | 13.7 | 1.5 | 9.5 |
| Cycle Q Clear(g_c), s | 7.0 | 0.0 | 13.7 | 13.7 | 1.5 | 9.5 |
| Prop In Lane | 0.49 | 0.50 | | 0.19 | 1.00 | |
| Lane Grp Cap(c), veh/h | 299 | 0 | 809 | 823 | 372 | 2215 |
| V/C Ratio(X) | 0.78 | 0.00 | 0.70 | 0.70 | 0.30 | 0.52 |
| Avail Cap(c_a), veh/h | 1044 | 0 | 2342 | 2384 | 606 | 5740 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 20.8 | 0.0 | 11.3 | 11.3 | 8.1 | 5.3 |
| Incr Delay (d2), s/veh | 4.4 | 0.0 | 1.1 | 1.1 | 0.5 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 2.9 | 0.0 | 3.9 | 4.0 | 0.4 | 1.6 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 25.2 | 0.0 | 12.5 | 12.4 | 8.5 | 5.5 |
| LnGrp LOS | C | A | B | B | A | A |
| Approach Vol, veh/h | 233 | | 1145 | | | 1259 |
| Approach Delay, s/veh | 25.2 | | 12.4 | | | 5.8 |
| Approach LOS | C | | B | | | A |

| Timer - Assigned Phs | 1 | 2 | | | 6 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 9.1 | 29.5 | | | 38.6 | 14.4 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 11.0 | 71.0 | | | 87.0 | 33.0 |
| Max Q Clear Time (g_c+I1), s | 3.5 | 15.7 | | | 11.5 | 9.0 |
| Green Ext Time (p_c), s | 0.1 | 8.8 | | | 10.2 | 0.7 |

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

**Notes**

User approved volume balancing among the lanes for turning movement.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 103 | 0 | 15 | 7 | 0 | 5 | 6 | 1025 | 8 | 5 | 945 | 91 |
| Future Volume (veh/h) | 103 | 0 | 15 | 7 | 0 | 5 | 6 | 1025 | 8 | 5 | 945 | 91 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 110 | 0 | 16 | 7 | 0 | 5 | 6 | 1090 | 9 | 5 | 1005 | 97 |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 321 | 0 | 22 | 230 | 32 | 84 | 331 | 1755 | 14 | 333 | 1586 | 153 |
| Arrive On Green | 0.12 | 0.00 | 0.12 | 0.12 | 0.00 | 0.12 | 0.01 | 0.49 | 0.49 | 0.01 | 0.49 | 0.49 |
| Sat Flow, veh/h | 1266 | 0 | 184 | 718 | 270 | 706 | 1781 | 3555 | 29 | 1781 | 3222 | 311 |
| Grp Volume(v), veh/h | 126 | 0 | 0 | 12 | 0 | 0 | 6 | 536 | 563 | 5 | 545 | 557 |
| Grp Sat Flow(s),veh/h/ln | 1450 | 0 | 0 | 1693 | 0 | 0 | 1781 | 1749 | 1835 | 1781 | 1749 | 1785 |
| Q Serve(g_s), s | 3.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 8.8 | 8.8 | 0.1 | 9.1 | 9.1 |
| Cycle Q Clear(g_c), s | 3.3 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.1 | 8.8 | 8.8 | 0.1 | 9.1 | 9.1 |
| Prop In Lane | 0.87 | | 0.13 | 0.58 | | 0.42 | 1.00 | | 0.02 | 1.00 | | 0.17 |
| Lane Grp Cap(c), veh/h | 343 | 0 | 0 | 346 | 0 | 0 | 331 | 863 | 906 | 333 | 861 | 879 |
| V/C Ratio(X) | 0.37 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.02 | 0.62 | 0.62 | 0.02 | 0.63 | 0.63 |
| Avail Cap(c_a), veh/h | 1409 | 0 | 0 | 1440 | 0 | 0 | 634 | 3286 | 3449 | 638 | 3286 | 3354 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 16.7 | 0.0 | 0.0 | 15.4 | 0.0 | 0.0 | 6.0 | 7.3 | 7.3 | 5.9 | 7.4 | 7.4 |
| Incr Delay (d2), s/veh | 0.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 0.7 | 0.0 | 0.8 | 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(50%),veh/ln | 1.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 1.7 | 1.8 | 0.0 | 1.8 | 1.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 17.4 | 0.0 | 0.0 | 15.4 | 0.0 | 0.0 | 6.0 | 8.0 | 8.0 | 6.0 | 8.2 | 8.1 |
| LnGrp LOS | B | A | A | B | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 126 | | | 12 | | | 1105 | | | 1107 | |
| Approach Delay, s/veh | | 17.4 | | | 15.4 | | | 8.0 | | | 8.1 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.3 | 24.4 | | 9.7 | 5.3 | 24.4 | | 9.7 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 7.3 | 74.0 | | 34.0 | 7.0 | 74.0 | | 34.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.1 | 10.8 | | 5.3 | 2.1 | 11.1 | | 2.2 | | | | |
| Green Ext Time (p_c), s | 0.0 | 8.2 | | 0.7 | 0.0 | 8.3 | | 0.0 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 8.6 |
| HCM 6th LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 18 | 17 | 22 | 20 | 8 | 30 | 47 | 952 | 26 | 37 | 946 | 31 |
| Future Volume (veh/h) | 18 | 17 | 22 | 20 | 8 | 30 | 47 | 952 | 26 | 37 | 946 | 31 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 20 | 19 | 24 | 22 | 9 | 33 | 52 | 1058 | 29 | 41 | 1051 | 34 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 159 | 57 | 60 | 165 | 31 | 79 | 405 | 1676 | 46 | 395 | 1635 | 53 |
| Arrive On Green | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.05 | 0.48 | 0.48 | 0.05 | 0.47 | 0.47 |
| Sat Flow, veh/h | 422 | 603 | 630 | 455 | 329 | 834 | 1781 | 3477 | 95 | 1781 | 3457 | 112 |
| Grp Volume(v), veh/h | 63 | 0 | 0 | 64 | 0 | 0 | 52 | 532 | 555 | 41 | 532 | 553 |
| Grp Sat Flow(s),veh/h/ln | 1655 | 0 | 0 | 1617 | 0 | 0 | 1781 | 1749 | 1824 | 1781 | 1749 | 1821 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.6 | 9.0 | 9.0 | 0.5 | 9.2 | 9.2 |
| Cycle Q Clear(g_c), s | 1.3 | 0.0 | 0.0 | 1.4 | 0.0 | 0.0 | 0.6 | 9.0 | 9.0 | 0.5 | 9.2 | 9.2 |
| Prop In Lane | 0.32 | | 0.38 | 0.34 | | 0.52 | 1.00 | | 0.05 | 1.00 | | 0.06 |
| Lane Grp Cap(c), veh/h | 276 | 0 | 0 | 275 | 0 | 0 | 405 | 843 | 879 | 395 | 827 | 861 |
| V/C Ratio(X) | 0.23 | 0.00 | 0.00 | 0.23 | 0.00 | 0.00 | 0.13 | 0.63 | 0.63 | 0.10 | 0.64 | 0.64 |
| Avail Cap(c_a), veh/h | 1396 | 0 | 0 | 1363 | 0 | 0 | 666 | 3344 | 3487 | 627 | 3300 | 3435 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 16.9 | 0.0 | 0.0 | 16.9 | 0.0 | 0.0 | 5.7 | 7.7 | 7.7 | 5.7 | 7.9 | 7.9 |
| Incr Delay (d2), s/veh | 0.4 | 0.0 | 0.0 | 0.4 | 0.0 | 0.0 | 0.1 | 0.8 | 0.8 | 0.1 | 0.8 | 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(50%),veh/ln | 0.5 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 | 0.1 | 1.6 | 1.7 | 0.1 | 1.7 | 1.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 17.3 | 0.0 | 0.0 | 17.3 | 0.0 | 0.0 | 5.9 | 8.5 | 8.4 | 5.8 | 8.8 | 8.7 |
| LnGrp LOS | B | A | A | B | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 63 | | | 64 | | | 1139 | | | 1126 | |
| Approach Delay, s/veh | | 17.3 | | | 17.3 | | | 8.3 | | | 8.7 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.8 | 24.2 | | 8.8 | 7.2 | 23.8 | | 8.8 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 7.0 | 76.0 | | 32.0 | 8.0 | 75.0 | | 32.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.5 | 11.0 | | 3.3 | 2.6 | 11.2 | | 3.4 | | | | |
| Green Ext Time (p_c), s | 0.0 | 7.7 | | 0.3 | 0.0 | 7.6 | | 0.3 | | | | |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 9.0 |
| HCM 6th LOS | A |

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

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 25 | 31 | 1101 | 25 | 31 | 1027 |
| Future Vol, veh/h | 25 | 31 | 1101 | 25 | 31 | 1027 |
| 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 | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 27 | 34 | 1197 | 27 | 34 | 1116 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1837 | 612 | 0 | 0 | 1224 | 0 |
| Stage 1 | 1211 | - | - | - | - | - |
| Stage 2 | 626 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | 67 | 436 | - | - | 565 | - |
| Stage 1 | 245 | - | - | - | - | - |
| Stage 2 | 495 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 63 | 436 | - | - | 565 | - |
| Mov Cap-2 Maneuver | 172 | - | - | - | - | - |
| Stage 1 | 245 | - | - | - | - | - |
| Stage 2 | 465 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 21 | 0 | 0.3 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 172 | 436 | 565 | - |
| HCM Lane V/C Ratio | - | - | 0.158 | 0.077 | 0.06 | - |
| HCM Control Delay (s) | - | - | 29.8 | 13.9 | 11.8 | - |
| HCM Lane LOS | - | - | D | B | B | - |
| HCM 95th %tile Q(veh) | - | - | 0.5 | 0.2 | 0.2 | - |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 114 | 116 | 1010 | 123 | 125 | 927 |
| Future Volume (veh/h) | 114 | 116 | 1010 | 123 | 125 | 927 |
| 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 | 1841 | 1870 | 1870 | 1841 |
| Adj Flow Rate, veh/h | 124 | 126 | 1098 | 134 | 136 | 1008 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 4 | 2 | 2 | 4 |
| Cap, veh/h | 155 | 157 | 1512 | 184 | 349 | 2248 |
| Arrive On Green | 0.19 | 0.19 | 0.48 | 0.48 | 0.08 | 0.64 |
| Sat Flow, veh/h | 829 | 842 | 3230 | 382 | 1781 | 3589 |
| Grp Volume(v), veh/h | 251 | 0 | 611 | 621 | 136 | 1008 |
| Grp Sat Flow(s),veh/h/ln | 1677 | 0 | 1749 | 1772 | 1781 | 1749 |
| Q Serve(g_s), s | 8.4 | 0.0 | 16.4 | 16.4 | 2.0 | 8.5 |
| Cycle Q Clear(g_c), s | 8.4 | 0.0 | 16.4 | 16.4 | 2.0 | 8.5 |
| Prop In Lane | 0.49 | 0.50 | | 0.22 | 1.00 | |
| Lane Grp Cap(c), veh/h | 314 | 0 | 843 | 854 | 349 | 2248 |
| V/C Ratio(X) | 0.80 | 0.00 | 0.73 | 0.73 | 0.39 | 0.45 |
| Avail Cap(c_a), veh/h | 913 | 0 | 2023 | 2050 | 669 | 5235 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 22.8 | 0.0 | 12.1 | 12.1 | 9.4 | 5.3 |
| Incr Delay (d2), s/veh | 4.7 | 0.0 | 1.2 | 1.2 | 0.7 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.5 | 0.0 | 4.9 | 5.0 | 0.5 | 1.7 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 27.6 | 0.0 | 13.3 | 13.3 | 10.1 | 5.4 |
| LnGrp LOS | C | A | B | B | B | A |
| Approach Vol, veh/h | 251 | | 1232 | | | 1144 |
| Approach Delay, s/veh | 27.6 | | 13.3 | | | 6.0 |
| Approach LOS | C | | B | | | A |

| Timer - Assigned Phs | 1 | 2 | | | 6 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 9.5 | 33.3 | | | 42.8 | 16.0 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 15.0 | 68.0 | | | 88.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 4.0 | 18.4 | | | 10.5 | 10.4 |
| Green Ext Time (p_c), s | 0.2 | 9.9 | | | 8.3 | 0.8 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.5 |
| HCM 6th LOS | B |

Notes

User approved volume balancing among the lanes for turning movement.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 100 | 0 | 9 | 7 | 0 | 5 | 10 | 915 | 8 | 5 | 944 | 92 |
| Future Volume (veh/h) | 100 | 0 | 9 | 7 | 0 | 5 | 10 | 915 | 8 | 5 | 944 | 92 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 105 | 0 | 9 | 7 | 0 | 5 | 11 | 963 | 8 | 5 | 994 | 97 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 321 | 0 | 12 | 222 | 31 | 76 | 348 | 1772 | 15 | 379 | 1580 | 154 |
| Arrive On Green | 0.11 | 0.00 | 0.11 | 0.11 | 0.00 | 0.11 | 0.01 | 0.50 | 0.50 | 0.01 | 0.49 | 0.49 |
| Sat Flow, veh/h | 1331 | 0 | 114 | 696 | 293 | 707 | 1781 | 3555 | 30 | 1781 | 3219 | 314 |
| Grp Volume(v), veh/h | 114 | 0 | 0 | 12 | 0 | 0 | 11 | 474 | 497 | 5 | 540 | 551 |
| Grp Sat Flow(s),veh/h/ln | 1445 | 0 | 0 | 1696 | 0 | 0 | 1781 | 1749 | 1835 | 1781 | 1749 | 1784 |
| Q Serve(g_s), s | 2.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 7.2 | 7.2 | 0.1 | 8.8 | 8.8 |
| Cycle Q Clear(g_c), s | 2.9 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.1 | 7.2 | 7.2 | 0.1 | 8.8 | 8.8 |
| Prop In Lane | 0.92 | | 0.08 | 0.58 | | 0.42 | 1.00 | | 0.02 | 1.00 | | 0.18 |
| Lane Grp Cap(c), veh/h | 333 | 0 | 0 | 329 | 0 | 0 | 348 | 872 | 915 | 379 | 858 | 876 |
| V/C Ratio(X) | 0.34 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.03 | 0.54 | 0.54 | 0.01 | 0.63 | 0.63 |
| Avail Cap(c_a), veh/h | 1432 | 0 | 0 | 1468 | 0 | 0 | 645 | 3345 | 3511 | 689 | 3345 | 3413 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 16.7 | 0.0 | 0.0 | 15.5 | 0.0 | 0.0 | 5.8 | 6.7 | 6.7 | 5.5 | 7.3 | 7.3 |
| Incr Delay (d2), s/veh | 0.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.5 | 0.5 | 0.0 | 0.8 | 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(50%),veh/ln | 0.9 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 1.3 | 1.4 | 0.0 | 1.7 | 1.7 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 17.3 | 0.0 | 0.0 | 15.6 | 0.0 | 0.0 | 5.8 | 7.2 | 7.2 | 5.5 | 8.0 | 8.0 |
| LnGrp LOS | B | A | A | B | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 114 | | | 12 | | | 982 | | | 1096 | |
| Approach Delay, s/veh | | 17.3 | | | 15.6 | | | 7.2 | | | 8.0 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.3 | 24.3 | | 9.1 | 5.6 | 24.0 | | 9.1 | | | | |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 | | | | |
| Max Green Setting (Gmax), s | 7.3 | 74.0 | | 34.0 | 7.0 | 74.0 | | 34.0 | | | | |
| Max Q Clear Time (g_c+I1), s | 2.1 | 9.2 | | 4.9 | 2.1 | 10.8 | | 2.2 | | | | |
| Green Ext Time (p_c), s | 0.0 | 6.7 | | 0.6 | 0.0 | 8.2 | | 0.0 | | | | |

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 27 | 6 | 24 | 20 | 3 | 26 | 29 | 860 | 17 | 31 | 920 | 33 |
| Future Volume (veh/h) | 27 | 6 | 24 | 20 | 3 | 26 | 29 | 860 | 17 | 31 | 920 | 33 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 28 | 6 | 25 | 21 | 3 | 27 | 31 | 905 | 18 | 33 | 968 | 35 |
| Peak Hour Factor | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 210 | 21 | 62 | 193 | 17 | 78 | 401 | 1591 | 32 | 428 | 1568 | 57 |
| Arrive On Green | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.04 | 0.45 | 0.45 | 0.04 | 0.46 | 0.46 |
| Sat Flow, veh/h | 688 | 228 | 673 | 571 | 183 | 848 | 1781 | 3507 | 70 | 1781 | 3443 | 124 |
| Grp Volume(v), veh/h | 59 | 0 | 0 | 51 | 0 | 0 | 31 | 451 | 472 | 33 | 492 | 511 |
| Grp Sat Flow(s),veh/h/ln | 1589 | 0 | 0 | 1601 | 0 | 0 | 1781 | 1749 | 1828 | 1781 | 1749 | 1818 |
| Q Serve(g_s), s | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 6.9 | 6.9 | 0.3 | 7.7 | 7.7 |
| Cycle Q Clear(g_c), s | 1.1 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.3 | 6.9 | 6.9 | 0.3 | 7.7 | 7.7 |
| Prop In Lane | 0.47 | | 0.42 | 0.41 | | 0.53 | 1.00 | | 0.04 | 1.00 | | 0.07 |
| Lane Grp Cap(c), veh/h | 294 | 0 | 0 | 289 | 0 | 0 | 401 | 793 | 829 | 428 | 797 | 828 |
| V/C Ratio(X) | 0.20 | 0.00 | 0.00 | 0.18 | 0.00 | 0.00 | 0.08 | 0.57 | 0.57 | 0.08 | 0.62 | 0.62 |
| Avail Cap(c_a), veh/h | 1568 | 0 | 0 | 1566 | 0 | 0 | 730 | 3531 | 3692 | 753 | 3531 | 3672 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 15.4 | 0.0 | 0.0 | 15.3 | 0.0 | 0.0 | 5.6 | 7.3 | 7.3 | 5.4 | 7.5 | 7.5 |
| Incr Delay (d2), s/veh | 0.3 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.1 | 0.6 | 0.6 | 0.1 | 0.8 | 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(50%),veh/ln | 0.4 | 0.0 | 0.0 | 0.3 | 0.0 | 0.0 | 0.1 | 1.2 | 1.2 | 0.1 | 1.3 | 1.4 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 15.7 | 0.0 | 0.0 | 15.6 | 0.0 | 0.0 | 5.7 | 7.9 | 7.9 | 5.5 | 8.2 | 8.2 |
| LnGrp LOS | B | A | A | B | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 59 | | | 51 | | | 954 | | | 1036 | |
| Approach Delay, s/veh | | 15.7 | | | 15.6 | | | 7.8 | | | 8.1 | |
| Approach LOS | | B | | | B | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.4 | 21.4 | | 8.3 | 6.3 | 21.5 | | 8.3 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 73.0 | | 34.0 | 8.0 | 73.0 | | 34.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 8.9 | | 3.1 | 2.3 | 9.7 | | 3.0 |
| Green Ext Time (p_c), s | 0.0 | 6.0 | | 0.3 | 0.0 | 6.8 | | 0.2 |

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

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 22 | 29 | 989 | 23 | 28 | 1031 |
| Future Vol, veh/h | 22 | 29 | 989 | 23 | 28 | 1031 |
| 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 | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 24 | 32 | 1075 | 25 | 30 | 1121 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 1709 | 550 | 0 | 0 | 1100 | 0 |
| Stage 1 | 1088 | - | - | - | - | - |
| Stage 2 | 621 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | 82 | 479 | - | - | 630 | - |
| Stage 1 | 284 | - | - | - | - | - |
| Stage 2 | 498 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 78 | 479 | - | - | 630 | - |
| Mov Cap-2 Maneuver | 195 | - | - | - | - | - |
| Stage 1 | 284 | - | - | - | - | - |
| Stage 2 | 474 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 18.6 | 0 | 0.3 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 195 | 479 | 630 | - |
| HCM Lane V/C Ratio | - | - | 0.123 | 0.066 | 0.048 | - |
| HCM Control Delay (s) | - | - | 26 | 13 | 11 | - |
| HCM Lane LOS | - | - | D | B | B | - |
| HCM 95th %tile Q(veh) | - | - | 0.4 | 0.2 | 0.2 | - |

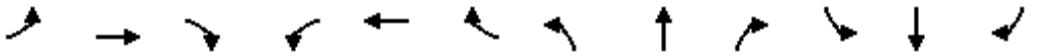
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 114 | 116 | 896 | 124 | 126 | 927 |
| Future Volume (veh/h) | 114 | 116 | 896 | 124 | 126 | 927 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 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 | 1841 | 1870 | 1870 | 1841 |
| Adj Flow Rate, veh/h | 124 | 126 | 974 | 135 | 137 | 1008 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 4 | 2 | 2 | 4 |
| Cap, veh/h | 157 | 160 | 1383 | 192 | 378 | 2179 |
| Arrive On Green | 0.19 | 0.19 | 0.45 | 0.45 | 0.08 | 0.62 |
| Sat Flow, veh/h | 829 | 842 | 3177 | 427 | 1781 | 3589 |
| Grp Volume(v), veh/h | 251 | 0 | 552 | 557 | 137 | 1008 |
| Grp Sat Flow(s),veh/h/ln | 1677 | 0 | 1749 | 1764 | 1781 | 1749 |
| Q Serve(g_s), s | 7.6 | 0.0 | 13.6 | 13.6 | 1.9 | 8.2 |
| Cycle Q Clear(g_c), s | 7.6 | 0.0 | 13.6 | 13.6 | 1.9 | 8.2 |
| Prop In Lane | 0.49 | 0.50 | | 0.24 | 1.00 | |
| Lane Grp Cap(c), veh/h | 319 | 0 | 784 | 791 | 378 | 2179 |
| V/C Ratio(X) | 0.79 | 0.00 | 0.70 | 0.70 | 0.36 | 0.46 |
| Avail Cap(c_a), veh/h | 1066 | 0 | 2189 | 2208 | 699 | 5620 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 20.6 | 0.0 | 11.9 | 11.9 | 8.6 | 5.3 |
| Incr Delay (d2), s/veh | 4.3 | 0.0 | 1.2 | 1.2 | 0.6 | 0.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.2 | 0.0 | 4.0 | 4.0 | 0.5 | 1.5 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 25.0 | 0.0 | 13.1 | 13.1 | 9.1 | 5.5 |
| LnGrp LOS | C | A | B | B | A | A |
| Approach Vol, veh/h | 251 | | 1109 | | | 1145 |
| Approach Delay, s/veh | 25.0 | | 13.1 | | | 5.9 |
| Approach LOS | C | | B | | | A |

| Timer - Assigned Phs | 1 | 2 | | | 6 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 9.3 | 29.0 | | | 38.3 | 15.2 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 14.0 | 67.0 | | | 86.0 | 34.0 |
| Max Q Clear Time (g_c+I1), s | 3.9 | 15.6 | | | 10.2 | 9.6 |
| Green Ext Time (p_c), s | 0.2 | 8.4 | | | 8.3 | 0.8 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.0 |
| HCM 6th LOS | B |

**Notes**

User approved volume balancing among the lanes for turning movement.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 265 | 209 | 252 | 226 | 232 | 71 | 306 | 1028 | 137 | 56 | 1000 | 188 |
| Future Volume (veh/h) | 265 | 209 | 252 | 226 | 232 | 71 | 306 | 1028 | 137 | 56 | 1000 | 188 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 288 | 227 | 0 | 246 | 252 | 77 | 333 | 1117 | 0 | 61 | 1087 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 382 | 434 | | 337 | 301 | 92 | 431 | 1950 | | 80 | 1549 | |
| Arrive On Green | 0.11 | 0.23 | 0.00 | 0.10 | 0.22 | 0.22 | 0.12 | 0.39 | 0.00 | 0.05 | 0.31 | 0.00 |
| Sat Flow, veh/h | 3456 | 1870 | 1585 | 3456 | 1375 | 420 | 3456 | 5191 | 0 | 1781 | 5191 | 0 |
| Grp Volume(v), veh/h | 288 | 227 | 0 | 246 | 0 | 329 | 333 | 1117 | 0 | 61 | 1087 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1585 | 1728 | 0 | 1795 | 1728 | 1675 | 0 | 1781 | 1675 | 0 |
| Q Serve(g_s), s | 6.8 | 8.9 | 0.0 | 5.8 | 0.0 | 14.8 | 7.9 | 14.8 | 0.0 | 2.9 | 16.1 | 0.0 |
| Cycle Q Clear(g_c), s | 6.8 | 8.9 | 0.0 | 5.8 | 0.0 | 14.8 | 7.9 | 14.8 | 0.0 | 2.9 | 16.1 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.23 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 382 | 434 | | 337 | 0 | 393 | 431 | 1950 | | 80 | 1549 | |
| V/C Ratio(X) | 0.75 | 0.52 | | 0.73 | 0.00 | 0.84 | 0.77 | 0.57 | | 0.76 | 0.70 | |
| Avail Cap(c_a), veh/h | 615 | 754 | | 574 | 0 | 702 | 696 | 3098 | | 211 | 2681 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 36.4 | 28.3 | 0.0 | 37.0 | 0.0 | 31.5 | 35.7 | 20.3 | 0.0 | 39.8 | 25.7 | 0.0 |
| Incr Delay (d2), s/veh | 3.0 | 1.0 | 0.0 | 3.0 | 0.0 | 4.7 | 3.0 | 0.3 | 0.0 | 13.6 | 0.6 | 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(50%),veh/ln | 2.9 | 4.0 | 0.0 | 2.5 | 0.0 | 6.6 | 3.3 | 5.2 | 0.0 | 1.5 | 5.9 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 39.4 | 29.3 | 0.0 | 40.0 | 0.0 | 36.2 | 38.7 | 20.6 | 0.0 | 53.4 | 26.3 | 0.0 |
| LnGrp LOS | D | C | | D | A | D | D | C | | D | C | |
| Approach Vol, veh/h | | 515 | | | 575 | | | 1450 | | | 1148 | |
| Approach Delay, s/veh | | 35.0 | | | 37.9 | | | 24.7 | | | 27.8 | |
| Approach LOS | | C | | | D | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.8 | 37.7 | 13.2 | 24.6 | 15.5 | 31.0 | 14.3 | 23.5 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 10.0 | 52.0 | 14.0 | 34.0 | 17.0 | 45.0 | 15.0 | 33.0 |
| Max Q Clear Time (g_c+I1), s | 4.9 | 16.8 | 7.8 | 10.9 | 9.9 | 18.1 | 8.8 | 16.8 |
| Green Ext Time (p_c), s | 0.0 | 8.8 | 0.4 | 1.2 | 0.7 | 7.9 | 0.5 | 1.7 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 29.2 |
| HCM 6th LOS | C |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 6 | 0 | 0 | 3 | 0 | 2 | 2 | 1309 | 3 | 2 | 1120 | 44 |
| Future Volume (veh/h) | 6 | 0 | 0 | 3 | 0 | 2 | 2 | 1309 | 3 | 2 | 1120 | 44 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 7 | 0 | 0 | 3 | 0 | 2 | 2 | 1423 | 3 | 2 | 1217 | 48 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 198 | 0 | 0 | 154 | 0 | 10 | 358 | 2213 | 5 | 317 | 2120 | 84 |
| Arrive On Green | 0.02 | 0.00 | 0.00 | 0.02 | 0.00 | 0.02 | 0.00 | 0.62 | 0.62 | 0.00 | 0.62 | 0.62 |
| Sat Flow, veh/h | 1479 | 0 | 0 | 942 | 0 | 628 | 1781 | 3580 | 8 | 1781 | 3430 | 135 |
| Grp Volume(v), veh/h | 7 | 0 | 0 | 5 | 0 | 0 | 2 | 695 | 731 | 2 | 620 | 645 |
| Grp Sat Flow(s),veh/h/ln | 1479 | 0 | 0 | 1570 | 0 | 0 | 1781 | 1749 | 1839 | 1781 | 1749 | 1816 |
| Q Serve(g_s), s | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 10.4 | 10.4 | 0.0 | 8.7 | 8.7 |
| Cycle Q Clear(g_c), s | 0.2 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 10.4 | 10.4 | 0.0 | 8.7 | 8.7 |
| Prop In Lane | 1.00 | | 0.00 | 0.60 | | 0.40 | 1.00 | | 0.00 | 1.00 | | 0.07 |
| Lane Grp Cap(c), veh/h | 198 | 0 | 0 | 164 | 0 | 0 | 358 | 1081 | 1137 | 317 | 1081 | 1123 |
| V/C Ratio(X) | 0.04 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.01 | 0.64 | 0.64 | 0.01 | 0.57 | 0.57 |
| Avail Cap(c_a), veh/h | 1101 | 0 | 0 | 1109 | 0 | 0 | 569 | 3517 | 3700 | 528 | 3517 | 3654 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 20.1 | 0.0 | 0.0 | 20.0 | 0.0 | 0.0 | 3.9 | 5.0 | 5.0 | 4.3 | 4.7 | 4.7 |
| Incr Delay (d2), s/veh | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.6 | 0.6 | 0.0 | 0.5 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 1.2 | 0.0 | 0.9 | 1.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 20.1 | 0.0 | 0.0 | 20.1 | 0.0 | 0.0 | 3.9 | 5.6 | 5.6 | 4.3 | 5.1 | 5.1 |
| LnGrp LOS | C | A | A | C | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 7 | | | 5 | | | 1428 | | | 1267 | |
| Approach Delay, s/veh | | 20.1 | | | 20.1 | | | 5.6 | | | 5.1 | |
| Approach LOS | | C | | | C | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.1 | 30.5 | | 5.6 | 5.1 | 30.5 | | 5.6 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 83.0 | | 27.0 | 5.0 | 83.0 | | 27.0 |
| Max Q Clear Time (g_c+I1), s | 2.0 | 12.4 | | 2.2 | 2.0 | 10.7 | | 2.1 |
| Green Ext Time (p_c), s | 0.0 | 13.1 | | 0.0 | 0.0 | 10.5 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 5.5 |
| HCM 6th LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 5 | 8 | 50 | 38 | 21 | 43 | 136 | 1245 | 63 | 24 | 1029 | 16 |
| Future Volume (veh/h) | 5 | 8 | 50 | 38 | 21 | 43 | 136 | 1245 | 63 | 24 | 1029 | 16 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 | 1.00 | | 1.00 |
| Parking Bus, Adj | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach | | No | | | No | | | No | | | No | |
| Adj Sat Flow, veh/h/ln | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 5 | 9 | 54 | 41 | 23 | 47 | 148 | 1353 | 68 | 26 | 1118 | 17 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 83 | 29 | 136 | 149 | 46 | 71 | 439 | 1931 | 97 | 303 | 1811 | 28 |
| Arrive On Green | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.10 | 0.09 | 0.57 | 0.57 | 0.03 | 0.51 | 0.51 |
| Sat Flow, veh/h | 65 | 275 | 1311 | 497 | 442 | 690 | 1781 | 3389 | 170 | 1781 | 3526 | 54 |
| Grp Volume(v), veh/h | 68 | 0 | 0 | 111 | 0 | 0 | 148 | 697 | 724 | 26 | 554 | 581 |
| Grp Sat Flow(s),veh/h/ln | 1651 | 0 | 0 | 1629 | 0 | 0 | 1781 | 1749 | 1810 | 1781 | 1749 | 1831 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 1.2 | 0.0 | 0.0 | 1.8 | 14.4 | 14.5 | 0.3 | 11.4 | 11.4 |
| Cycle Q Clear(g_c), s | 2.0 | 0.0 | 0.0 | 3.2 | 0.0 | 0.0 | 1.8 | 14.4 | 14.5 | 0.3 | 11.4 | 11.4 |
| Prop In Lane | 0.07 | | 0.79 | 0.37 | | 0.42 | 1.00 | | 0.09 | 1.00 | | 0.03 |
| Lane Grp Cap(c), veh/h | 248 | 0 | 0 | 266 | 0 | 0 | 439 | 996 | 1031 | 303 | 898 | 940 |
| V/C Ratio(X) | 0.27 | 0.00 | 0.00 | 0.42 | 0.00 | 0.00 | 0.34 | 0.70 | 0.70 | 0.09 | 0.62 | 0.62 |
| Avail Cap(c_a), veh/h | 1090 | 0 | 0 | 1074 | 0 | 0 | 813 | 2694 | 2789 | 425 | 2349 | 2459 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 21.2 | 0.0 | 0.0 | 21.7 | 0.0 | 0.0 | 6.3 | 7.8 | 7.8 | 6.8 | 8.8 | 8.8 |
| Incr Delay (d2), s/veh | 0.6 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 0.5 | 0.9 | 0.9 | 0.1 | 0.7 | 0.7 |
| 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(50%),veh/ln | 0.7 | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 | 0.3 | 2.9 | 3.0 | 0.1 | 2.7 | 2.8 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 21.8 | 0.0 | 0.0 | 22.8 | 0.0 | 0.0 | 6.7 | 8.7 | 8.7 | 6.9 | 9.5 | 9.4 |
| LnGrp LOS | C | A | A | C | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 68 | | | 111 | | | 1569 | | | 1161 | |
| Approach Delay, s/veh | | 21.8 | | | 22.8 | | | 8.5 | | | 9.4 | |
| Approach LOS | | C | | | C | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 6.5 | 33.8 | | 10.2 | 9.4 | 31.0 | | 10.2 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 78.0 | | 32.0 | 15.0 | 68.0 | | 32.0 |
| Max Q Clear Time (g_c+I1), s | 2.3 | 16.5 | | 4.0 | 3.8 | 13.4 | | 5.2 |
| Green Ext Time (p_c), s | 0.0 | 12.3 | | 0.3 | 0.3 | 8.1 | | 0.5 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 9.7 |
| HCM 6th LOS | | A |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 19 | 22 | 1283 | 19 | 22 | 1164 |
| Future Vol, veh/h | 19 | 22 | 1283 | 19 | 22 | 1164 |
| 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 | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 21 | 24 | 1395 | 21 | 24 | 1265 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2087 | 708 | 0 | 0 | 1416 | 0 |
| Stage 1 | 1406 | - | - | - | - | - |
| Stage 2 | 681 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | 45 | 377 | - | - | 477 | - |
| Stage 1 | 192 | - | - | - | - | - |
| Stage 2 | 464 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 43 | 377 | - | - | 477 | - |
| Mov Cap-2 Maneuver | 138 | - | - | - | - | - |
| Stage 1 | 192 | - | - | - | - | - |
| Stage 2 | 441 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 24.7 | 0 | 0.2 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 138 | 377 | 477 | - |
| HCM Lane V/C Ratio | - | - | 0.15 | 0.063 | 0.05 | - |
| HCM Control Delay (s) | - | - | 35.6 | 15.2 | 12.9 | - |
| HCM Lane LOS | - | - | E | C | B | - |
| HCM 95th %tile Q(veh) | - | - | 0.5 | 0.2 | 0.2 | - |

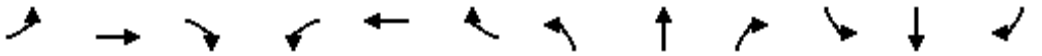
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 39 | 40 | 1262 | 55 | 56 | 1127 |
| Future Volume (veh/h) | 39 | 40 | 1262 | 55 | 56 | 1127 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike Adj(A_pbT) | 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 | 1841 | 1870 | 1870 | 1841 |
| Adj Flow Rate, veh/h | 42 | 43 | 1372 | 60 | 61 | 1225 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 4 | 2 | 2 | 4 |
| Cap, veh/h | 57 | 58 | 1983 | 87 | 353 | 2572 |
| Arrive On Green | 0.07 | 0.07 | 0.58 | 0.58 | 0.06 | 0.74 |
| Sat Flow, veh/h | 820 | 839 | 3506 | 149 | 1781 | 3589 |
| Grp Volume(v), veh/h | 86 | 0 | 702 | 730 | 61 | 1225 |
| Grp Sat Flow(s),veh/h/ln | 1678 | 0 | 1749 | 1814 | 1781 | 1749 |
| Q Serve(g_s), s | 2.6 | 0.0 | 14.4 | 14.4 | 0.6 | 7.3 |
| Cycle Q Clear(g_c), s | 2.6 | 0.0 | 14.4 | 14.4 | 0.6 | 7.3 |
| Prop In Lane | 0.49 | 0.50 | | 0.08 | 1.00 | |
| Lane Grp Cap(c), veh/h | 116 | 0 | 1016 | 1054 | 353 | 2572 |
| V/C Ratio(X) | 0.74 | 0.00 | 0.69 | 0.69 | 0.17 | 0.48 |
| Avail Cap(c_a), veh/h | 854 | 0 | 2772 | 2875 | 531 | 6433 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 23.3 | 0.0 | 7.5 | 7.5 | 5.9 | 2.8 |
| Incr Delay (d2), s/veh | 9.0 | 0.0 | 0.9 | 0.8 | 0.2 | 0.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.2 | 0.0 | 3.0 | 3.2 | 0.1 | 0.2 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 32.3 | 0.0 | 8.4 | 8.3 | 6.2 | 2.9 |
| LnGrp LOS | C | A | A | A | A | A |
| Approach Vol, veh/h | 86 | | 1432 | | | 1286 |
| Approach Delay, s/veh | 32.3 | | 8.3 | | | 3.0 |
| Approach LOS | C | | A | | | A |

| Timer - Assigned Phs | 1 | 2 | | | 6 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 7.9 | 34.7 | | | 42.6 | 8.5 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 8.0 | 81.0 | | | 94.0 | 26.0 |
| Max Q Clear Time (g_c+I1), s | 2.6 | 16.4 | | | 9.3 | 4.6 |
| Green Ext Time (p_c), s | 0.0 | 13.2 | | | 11.4 | 0.2 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 6.7 |
| HCM 6th LOS | A |

**Notes**

User approved volume balancing among the lanes for turning movement.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 374 | 284 | 424 | 346 | 211 | 61 | 345 | 1486 | 321 | 65 | 1587 | 294 |
| Future Volume (veh/h) | 374 | 284 | 424 | 346 | 211 | 61 | 345 | 1486 | 321 | 65 | 1587 | 294 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 407 | 309 | 0 | 376 | 229 | 66 | 375 | 1615 | 0 | 71 | 1725 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 472 | 379 | | 412 | 258 | 74 | 382 | 2299 | | 91 | 1998 | |
| Arrive On Green | 0.14 | 0.20 | 0.00 | 0.12 | 0.18 | 0.18 | 0.11 | 0.46 | 0.00 | 0.05 | 0.40 | 0.00 |
| Sat Flow, veh/h | 3456 | 1870 | 1585 | 3456 | 1396 | 402 | 3456 | 5191 | 0 | 1781 | 5191 | 0 |
| Grp Volume(v), veh/h | 407 | 309 | 0 | 376 | 0 | 295 | 375 | 1615 | 0 | 71 | 1725 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1585 | 1728 | 0 | 1798 | 1728 | 1675 | 0 | 1781 | 1675 | 0 |
| Q Serve(g_s), s | 13.5 | 18.6 | 0.0 | 12.6 | 0.0 | 18.8 | 12.7 | 30.2 | 0.0 | 4.6 | 37.0 | 0.0 |
| Cycle Q Clear(g_c), s | 13.5 | 18.6 | 0.0 | 12.6 | 0.0 | 18.8 | 12.7 | 30.2 | 0.0 | 4.6 | 37.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.22 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 472 | 379 | | 412 | 0 | 332 | 382 | 2299 | | 91 | 1998 | |
| V/C Ratio(X) | 0.86 | 0.82 | | 0.91 | 0.00 | 0.89 | 0.98 | 0.70 | | 0.78 | 0.86 | |
| Avail Cap(c_a), veh/h | 559 | 525 | | 412 | 0 | 428 | 382 | 2437 | | 91 | 2137 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 49.7 | 44.8 | 0.0 | 51.2 | 0.0 | 46.7 | 52.2 | 25.5 | 0.0 | 55.1 | 32.5 | 0.0 |
| Incr Delay (d2), s/veh | 11.5 | 6.9 | 0.0 | 24.5 | 0.0 | 16.5 | 40.9 | 0.9 | 0.0 | 34.8 | 3.7 | 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(50%),veh/ln | 6.5 | 9.2 | 0.0 | 6.8 | 0.0 | 9.8 | 7.5 | 11.4 | 0.0 | 2.9 | 14.8 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 61.2 | 51.7 | 0.0 | 75.7 | 0.0 | 63.2 | 93.1 | 26.4 | 0.0 | 89.9 | 36.2 | 0.0 |
| LnGrp LOS | E | D | | E | A | E | F | C | | F | D | |
| Approach Vol, veh/h | | 716 | | | 671 | | | 1990 | | | 1796 | |
| Approach Delay, s/veh | | 57.1 | | | 70.2 | | | 38.9 | | | 38.3 | |
| Approach LOS | | E | | | E | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 11.0 | 58.8 | 19.0 | 28.8 | 18.0 | 51.7 | 21.1 | 26.7 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 6.0 | 57.0 | 14.0 | 33.0 | 13.0 | 50.0 | 19.0 | 28.0 |
| Max Q Clear Time (g_c+I1), s | 6.6 | 32.2 | 14.6 | 20.6 | 14.7 | 39.0 | 15.5 | 20.8 |
| Green Ext Time (p_c), s | 0.0 | 12.5 | 0.0 | 1.3 | 0.0 | 7.7 | 0.5 | 0.9 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 45.3 |
| HCM 6th LOS | D |

**Notes**

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

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 106 | 0 | 19 | 7 | 0 | 4 | 12 | 1613 | 6 | 4 | 1768 | 132 |
| Future Volume (veh/h) | 106 | 0 | 19 | 7 | 0 | 4 | 12 | 1613 | 6 | 4 | 1768 | 132 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 115 | 0 | 21 | 8 | 0 | 4 | 13 | 1753 | 7 | 4 | 1922 | 143 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 214 | 0 | 26 | 179 | 13 | 64 | 163 | 2563 | 10 | 208 | 2336 | 172 |
| Arrive On Green | 0.12 | 0.00 | 0.12 | 0.12 | 0.00 | 0.12 | 0.02 | 0.72 | 0.72 | 0.01 | 0.71 | 0.71 |
| Sat Flow, veh/h | 1231 | 0 | 225 | 989 | 108 | 549 | 1781 | 3573 | 14 | 1781 | 3303 | 243 |
| Grp Volume(v), veh/h | 136 | 0 | 0 | 12 | 0 | 0 | 13 | 858 | 902 | 4 | 1006 | 1059 |
| Grp Sat Flow(s),veh/h/ln | 1455 | 0 | 0 | 1646 | 0 | 0 | 1781 | 1749 | 1838 | 1781 | 1749 | 1797 |
| Q Serve(g_s), s | 7.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 25.3 | 25.4 | 0.1 | 36.9 | 39.1 |
| Cycle Q Clear(g_c), s | 8.4 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.2 | 25.3 | 25.4 | 0.1 | 36.9 | 39.1 |
| Prop In Lane | 0.85 | | 0.15 | 0.67 | | 0.33 | 1.00 | | 0.01 | 1.00 | | 0.14 |
| Lane Grp Cap(c), veh/h | 241 | 0 | 0 | 256 | 0 | 0 | 163 | 1254 | 1318 | 208 | 1237 | 1271 |
| V/C Ratio(X) | 0.57 | 0.00 | 0.00 | 0.05 | 0.00 | 0.00 | 0.08 | 0.68 | 0.68 | 0.02 | 0.81 | 0.83 |
| Avail Cap(c_a), veh/h | 490 | 0 | 0 | 508 | 0 | 0 | 231 | 1559 | 1639 | 294 | 1559 | 1602 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 40.0 | 0.0 | 0.0 | 36.6 | 0.0 | 0.0 | 12.4 | 7.3 | 7.3 | 7.1 | 9.4 | 9.7 |
| Incr Delay (d2), s/veh | 2.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 0.2 | 0.9 | 0.9 | 0.0 | 2.7 | 3.2 |
| 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(50%),veh/ln | 3.2 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.1 | 6.6 | 7.0 | 0.0 | 10.5 | 11.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 42.1 | 0.0 | 0.0 | 36.7 | 0.0 | 0.0 | 12.6 | 8.2 | 8.2 | 7.1 | 12.1 | 12.9 |
| LnGrp LOS | D | A | A | D | A | A | B | A | A | A | B | B |
| Approach Vol, veh/h | | 136 | | | 12 | | | 1773 | | | 2069 | |
| Approach Delay, s/veh | | 42.1 | | | 36.7 | | | 8.2 | | | 12.5 | |
| Approach LOS | | D | | | D | | | A | | | B | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.5 | 71.8 | | 15.8 | 6.4 | 70.8 | | 15.8 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 83.0 | | 27.0 | 5.0 | 83.0 | | 27.0 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 27.4 | | 10.4 | 2.2 | 41.1 | | 2.6 |
| Green Ext Time (p_c), s | 0.0 | 19.9 | | 0.6 | 0.0 | 24.7 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.7 |
| HCM 6th LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 24 | 12 | 119 | 54 | 21 | 39 | 73 | 1550 | 50 | 59 | 1788 | 51 |
| Future Volume (veh/h) | 24 | 12 | 119 | 54 | 21 | 39 | 73 | 1550 | 50 | 59 | 1788 | 51 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 26 | 13 | 129 | 59 | 23 | 42 | 79 | 1685 | 54 | 64 | 1943 | 55 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 66 | 27 | 161 | 125 | 49 | 60 | 212 | 2328 | 74 | 253 | 2327 | 66 |
| Arrive On Green | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.12 | 0.05 | 0.67 | 0.67 | 0.04 | 0.67 | 0.67 |
| Sat Flow, veh/h | 174 | 216 | 1293 | 552 | 393 | 484 | 1781 | 3459 | 110 | 1781 | 3474 | 98 |
| Grp Volume(v), veh/h | 168 | 0 | 0 | 124 | 0 | 0 | 79 | 849 | 890 | 64 | 973 | 1025 |
| Grp Sat Flow(s),veh/h/ln | 1684 | 0 | 0 | 1430 | 0 | 0 | 1781 | 1749 | 1821 | 1781 | 1749 | 1823 |
| Q Serve(g_s), s | 1.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 1.2 | 29.0 | 29.4 | 1.0 | 39.0 | 39.9 |
| Cycle Q Clear(g_c), s | 8.9 | 0.0 | 0.0 | 7.8 | 0.0 | 0.0 | 1.2 | 29.0 | 29.4 | 1.0 | 39.0 | 39.9 |
| Prop In Lane | 0.15 | | 0.77 | 0.48 | | 0.34 | 1.00 | | 0.06 | 1.00 | | 0.05 |
| Lane Grp Cap(c), veh/h | 254 | 0 | 0 | 234 | 0 | 0 | 212 | 1177 | 1226 | 253 | 1171 | 1221 |
| V/C Ratio(X) | 0.66 | 0.00 | 0.00 | 0.53 | 0.00 | 0.00 | 0.37 | 0.72 | 0.73 | 0.25 | 0.83 | 0.84 |
| Avail Cap(c_a), veh/h | 556 | 0 | 0 | 514 | 0 | 0 | 224 | 1486 | 1547 | 271 | 1486 | 1549 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 40.0 | 0.0 | 0.0 | 39.3 | 0.0 | 0.0 | 17.3 | 9.8 | 9.8 | 9.9 | 11.6 | 11.7 |
| Incr Delay (d2), s/veh | 2.9 | 0.0 | 0.0 | 1.8 | 0.0 | 0.0 | 1.1 | 1.3 | 1.3 | 0.5 | 3.3 | 3.4 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 3.8 | 0.0 | 0.0 | 2.7 | 0.0 | 0.0 | 1.0 | 8.3 | 8.7 | 0.4 | 11.7 | 12.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 43.0 | 0.0 | 0.0 | 41.1 | 0.0 | 0.0 | 18.4 | 11.1 | 11.1 | 10.4 | 14.9 | 15.2 |
| LnGrp LOS | D | A | A | D | A | A | B | B | B | B | B | B |
| Approach Vol, veh/h | | 168 | | | 124 | | | 1818 | | | 2062 | |
| Approach Delay, s/veh | | 43.0 | | | 41.1 | | | 11.4 | | | 14.9 | |
| Approach LOS | | D | | | D | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 9.1 | 68.4 | | 16.7 | 9.4 | 68.1 | | 16.7 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 80.0 | | 30.0 | 5.0 | 80.0 | | 30.0 |
| Max Q Clear Time (g_c+I1), s | 3.0 | 31.4 | | 10.9 | 3.2 | 41.9 | | 9.8 |
| Green Ext Time (p_c), s | 0.0 | 17.8 | | 0.8 | 0.0 | 21.2 | | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 15.3 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 25 | 30 | 1705 | 25 | 31 | 1877 |
| Future Vol, veh/h | 25 | 30 | 1705 | 25 | 31 | 1877 |
| 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 | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 27 | 33 | 1853 | 27 | 34 | 2040 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2955 | 940 | 0 | 0 | 1880 | 0 |
| Stage 1 | 1867 | - | - | - | - | - |
| Stage 2 | 1088 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | ~ 11 | 265 | - | - | 315 | - |
| Stage 1 | 108 | - | - | - | - | - |
| Stage 2 | 284 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 10 | 265 | - | - | 315 | - |
| Mov Cap-2 Maneuver | 73 | - | - | - | - | - |
| Stage 1 | 108 | - | - | - | - | - |
| Stage 2 | 253 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 48 | 0 | 0.3 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 73 | 265 | 315 | - |
| HCM Lane V/C Ratio | - | - | 0.372 | 0.123 | 0.107 | - |
| HCM Control Delay (s) | - | - | 81 | 20.5 | 17.8 | - |
| HCM Lane LOS | - | - | F | C | C | - |
| HCM 95th %tile Q(veh) | - | - | 1.4 | 0.4 | 0.4 | - |

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

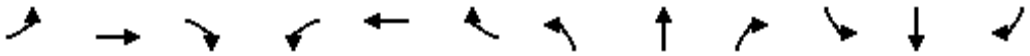
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 106 | 108 | 1622 | 101 | 104 | 1798 |
| Future Volume (veh/h) | 106 | 108 | 1622 | 101 | 104 | 1798 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike 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 | 1841 | 1870 | 1870 | 1841 |
| Adj Flow Rate, veh/h | 115 | 117 | 1763 | 110 | 113 | 1954 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 4 | 2 | 2 | 4 |
| Cap, veh/h | 133 | 135 | 2127 | 131 | 216 | 2575 |
| Arrive On Green | 0.16 | 0.16 | 0.64 | 0.64 | 0.05 | 0.74 |
| Sat Flow, veh/h | 828 | 842 | 3437 | 207 | 1781 | 3589 |
| Grp Volume(v), veh/h | 233 | 0 | 914 | 959 | 113 | 1954 |
| Grp Sat Flow(s),veh/h/ln | 1677 | 0 | 1749 | 1803 | 1781 | 1749 |
| Q Serve(g_s), s | 13.2 | 0.0 | 38.7 | 40.2 | 1.9 | 32.4 |
| Cycle Q Clear(g_c), s | 13.2 | 0.0 | 38.7 | 40.2 | 1.9 | 32.4 |
| Prop In Lane | 0.49 | 0.50 | | 0.11 | 1.00 | |
| Lane Grp Cap(c), veh/h | 270 | 0 | 1112 | 1147 | 216 | 2575 |
| V/C Ratio(X) | 0.86 | 0.00 | 0.82 | 0.84 | 0.52 | 0.76 |
| Avail Cap(c_a), veh/h | 432 | 0 | 1440 | 1485 | 312 | 3419 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 39.7 | 0.0 | 13.5 | 13.8 | 20.3 | 7.7 |
| Incr Delay (d2), s/veh | 10.1 | 0.0 | 3.1 | 3.4 | 2.0 | 0.7 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.2 | 0.0 | 12.9 | 13.9 | 1.7 | 8.2 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 49.8 | 0.0 | 16.6 | 17.2 | 22.2 | 8.4 |
| LnGrp LOS | D | A | B | B | C | A |
| Approach Vol, veh/h | 233 | | 1873 | | | 2067 |
| Approach Delay, s/veh | 49.8 | | 16.9 | | | 9.1 |
| Approach LOS | D | | B | | | A |

| Timer - Assigned Phs | 1 | 2 | | | 6 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 9.8 | 66.8 | | | 76.5 | 20.6 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 10.0 | 80.0 | | | 95.0 | 25.0 |
| Max Q Clear Time (g_c+I1), s | 3.9 | 42.2 | | | 34.4 | 15.2 |
| Green Ext Time (p_c), s | 0.1 | 19.6 | | | 27.2 | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 14.9 |
| HCM 6th LOS | B |

**Notes**

User approved volume balancing among the lanes for turning movement.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 328 | 232 | 347 | 367 | 207 | 88 | 346 | 1536 | 323 | 83 | 1575 | 265 |
| Future Volume (veh/h) | 328 | 232 | 347 | 367 | 207 | 88 | 346 | 1536 | 323 | 83 | 1575 | 265 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 357 | 252 | 0 | 399 | 225 | 96 | 376 | 1670 | 0 | 90 | 1712 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 418 | 383 | | 414 | 253 | 108 | 384 | 2234 | | 107 | 1976 | |
| Arrive On Green | 0.12 | 0.20 | 0.00 | 0.12 | 0.20 | 0.20 | 0.11 | 0.44 | 0.00 | 0.06 | 0.39 | 0.00 |
| Sat Flow, veh/h | 3456 | 1870 | 1585 | 3456 | 1244 | 531 | 3456 | 5191 | 0 | 1781 | 5191 | 0 |
| Grp Volume(v), veh/h | 357 | 252 | 0 | 399 | 0 | 321 | 376 | 1670 | 0 | 90 | 1712 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1585 | 1728 | 0 | 1775 | 1728 | 1675 | 0 | 1781 | 1675 | 0 |
| Q Serve(g_s), s | 11.8 | 14.5 | 0.0 | 13.4 | 0.0 | 20.6 | 12.7 | 32.3 | 0.0 | 5.9 | 36.7 | 0.0 |
| Cycle Q Clear(g_c), s | 11.8 | 14.5 | 0.0 | 13.4 | 0.0 | 20.6 | 12.7 | 32.3 | 0.0 | 5.9 | 36.7 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.30 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 418 | 383 | | 414 | 0 | 361 | 384 | 2234 | | 107 | 1976 | |
| V/C Ratio(X) | 0.85 | 0.66 | | 0.96 | 0.00 | 0.89 | 0.98 | 0.75 | | 0.84 | 0.87 | |
| Avail Cap(c_a), veh/h | 473 | 544 | | 414 | 0 | 486 | 384 | 2363 | | 107 | 2106 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 50.4 | 42.7 | 0.0 | 51.2 | 0.0 | 45.3 | 51.8 | 27.0 | 0.0 | 54.4 | 32.6 | 0.0 |
| Incr Delay (d2), s/veh | 13.0 | 1.9 | 0.0 | 35.0 | 0.0 | 14.4 | 40.1 | 1.3 | 0.0 | 42.9 | 3.9 | 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(50%),veh/ln | 5.8 | 6.8 | 0.0 | 7.8 | 0.0 | 10.4 | 7.5 | 12.3 | 0.0 | 3.8 | 14.7 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 63.4 | 44.7 | 0.0 | 86.2 | 0.0 | 59.7 | 92.0 | 28.3 | 0.0 | 97.3 | 36.6 | 0.0 |
| LnGrp LOS | E | D | | F | A | E | F | C | | F | D | |
| Approach Vol, veh/h | | 609 | | | 720 | | | 2046 | | | 1802 | |
| Approach Delay, s/veh | | 55.6 | | | 74.4 | | | 40.0 | | | 39.6 | |
| Approach LOS | | E | | | E | | | D | | | D | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 12.0 | 57.0 | 19.0 | 29.0 | 18.0 | 51.0 | 19.1 | 28.8 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 7.0 | 55.0 | 14.0 | 34.0 | 13.0 | 49.0 | 16.0 | 32.0 |
| Max Q Clear Time (g_c+I1), s | 7.9 | 34.3 | 15.4 | 16.5 | 14.7 | 38.7 | 13.8 | 22.6 |
| Green Ext Time (p_c), s | 0.0 | 11.7 | 0.0 | 1.2 | 0.0 | 7.3 | 0.3 | 1.3 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 46.5 |
| HCM 6th LOS | D |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 177 | 0 | 25 | 7 | 0 | 5 | 10 | 1662 | 8 | 5 | 1532 | 156 |
| Future Volume (veh/h) | 177 | 0 | 25 | 7 | 0 | 5 | 10 | 1662 | 8 | 5 | 1532 | 156 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 192 | 0 | 27 | 8 | 0 | 5 | 11 | 1807 | 9 | 5 | 1665 | 170 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 300 | 0 | 32 | 233 | 15 | 115 | 165 | 2320 | 12 | 166 | 2064 | 208 |
| Arrive On Green | 0.18 | 0.00 | 0.18 | 0.18 | 0.00 | 0.18 | 0.01 | 0.65 | 0.65 | 0.01 | 0.64 | 0.64 |
| Sat Flow, veh/h | 1265 | 0 | 178 | 949 | 83 | 645 | 1781 | 3568 | 18 | 1781 | 3208 | 323 |
| Grp Volume(v), veh/h | 219 | 0 | 0 | 13 | 0 | 0 | 11 | 885 | 931 | 5 | 897 | 938 |
| Grp Sat Flow(s),veh/h/ln | 1443 | 0 | 0 | 1677 | 0 | 0 | 1781 | 1749 | 1838 | 1781 | 1749 | 1783 |
| Q Serve(g_s), s | 12.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 32.6 | 32.7 | 0.1 | 34.2 | 36.0 |
| Cycle Q Clear(g_c), s | 13.3 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.2 | 32.6 | 32.7 | 0.1 | 34.2 | 36.0 |
| Prop In Lane | 0.88 | | 0.12 | 0.62 | | 0.38 | 1.00 | | 0.01 | 1.00 | | 0.18 |
| Lane Grp Cap(c), veh/h | 332 | 0 | 0 | 363 | 0 | 0 | 165 | 1137 | 1195 | 166 | 1125 | 1147 |
| V/C Ratio(X) | 0.66 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.07 | 0.78 | 0.78 | 0.03 | 0.80 | 0.82 |
| Avail Cap(c_a), veh/h | 501 | 0 | 0 | 535 | 0 | 0 | 240 | 1596 | 1677 | 252 | 1596 | 1627 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.1 | 0.0 | 0.0 | 30.9 | 0.0 | 0.0 | 12.9 | 11.3 | 11.3 | 11.4 | 11.9 | 12.2 |
| Incr Delay (d2), s/veh | 2.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 1.7 | 1.6 | 0.1 | 1.9 | 2.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.9 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.1 | 10.0 | 10.5 | 0.0 | 10.6 | 11.5 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 38.4 | 0.0 | 0.0 | 31.0 | 0.0 | 0.0 | 13.0 | 12.9 | 12.9 | 11.4 | 13.8 | 14.5 |
| LnGrp LOS | D | A | A | C | A | A | B | B | B | B | B | B |
| Approach Vol, veh/h | | 219 | | | 13 | | | 1827 | | | 1840 | |
| Approach Delay, s/veh | | 38.4 | | | 31.0 | | | 12.9 | | | 14.2 | |
| Approach LOS | | D | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.6 | 64.1 | | 21.2 | 6.2 | 63.5 | | 21.2 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 5.6 | 83.0 | | 27.0 | 5.0 | 83.0 | | 27.0 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 34.7 | | 15.3 | 2.2 | 38.0 | | 2.6 |
| Green Ext Time (p_c), s | 0.0 | 20.3 | | 0.9 | 0.0 | 20.5 | | 0.0 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 15.0 |
| HCM 6th LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 30 | 29 | 38 | 35 | 13 | 51 | 81 | 1534 | 44 | 62 | 1530 | 53 |
| Future Volume (veh/h) | 30 | 29 | 38 | 35 | 13 | 51 | 81 | 1534 | 44 | 62 | 1530 | 53 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 33 | 32 | 41 | 38 | 14 | 55 | 88 | 1667 | 48 | 67 | 1663 | 58 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 107 | 58 | 61 | 116 | 30 | 80 | 290 | 2215 | 64 | 284 | 2177 | 76 |
| Arrive On Green | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.06 | 0.64 | 0.64 | 0.05 | 0.63 | 0.63 |
| Sat Flow, veh/h | 421 | 633 | 665 | 491 | 330 | 868 | 1781 | 3472 | 100 | 1781 | 3448 | 120 |
| Grp Volume(v), veh/h | 106 | 0 | 0 | 107 | 0 | 0 | 88 | 837 | 878 | 67 | 841 | 880 |
| Grp Sat Flow(s),veh/h/ln | 1718 | 0 | 0 | 1689 | 0 | 0 | 1781 | 1749 | 1823 | 1781 | 1749 | 1819 |
| Q Serve(g_s), s | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 | 1.1 | 22.9 | 23.2 | 0.9 | 23.5 | 23.8 |
| Cycle Q Clear(g_c), s | 3.9 | 0.0 | 0.0 | 4.0 | 0.0 | 0.0 | 1.1 | 22.9 | 23.2 | 0.9 | 23.5 | 23.8 |
| Prop In Lane | 0.31 | | 0.39 | 0.36 | | 0.51 | 1.00 | | 0.05 | 1.00 | | 0.07 |
| Lane Grp Cap(c), veh/h | 227 | 0 | 0 | 226 | 0 | 0 | 290 | 1116 | 1163 | 284 | 1104 | 1149 |
| V/C Ratio(X) | 0.47 | 0.00 | 0.00 | 0.47 | 0.00 | 0.00 | 0.30 | 0.75 | 0.75 | 0.24 | 0.76 | 0.77 |
| Avail Cap(c_a), veh/h | 763 | 0 | 0 | 744 | 0 | 0 | 392 | 1977 | 2061 | 371 | 1952 | 2031 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 30.2 | 0.0 | 0.0 | 30.3 | 0.0 | 0.0 | 9.5 | 8.7 | 8.7 | 8.5 | 9.0 | 9.1 |
| Incr Delay (d2), s/veh | 1.5 | 0.0 | 0.0 | 1.5 | 0.0 | 0.0 | 0.6 | 1.0 | 1.0 | 0.4 | 1.1 | 1.1 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 1.7 | 0.0 | 0.0 | 1.7 | 0.0 | 0.0 | 0.4 | 5.4 | 5.6 | 0.3 | 5.7 | 6.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 31.7 | 0.0 | 0.0 | 31.8 | 0.0 | 0.0 | 10.0 | 9.7 | 9.7 | 8.9 | 10.1 | 10.2 |
| LnGrp LOS | C | A | A | C | A | A | B | A | A | A | B | B |
| Approach Vol, veh/h | | 106 | | | 107 | | | 1803 | | | 1788 | |
| Approach Delay, s/veh | | 31.7 | | | 31.8 | | | 9.7 | | | 10.1 | |
| Approach LOS | | C | | | C | | | A | | | B | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.6 | 49.0 | | 11.3 | 9.1 | 48.6 | | 11.3 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 7.6 | 78.0 | | 30.0 | 8.0 | 77.0 | | 30.0 |
| Max Q Clear Time (g_c+I1), s | 2.9 | 25.2 | | 5.9 | 3.1 | 25.8 | | 6.0 |
| Green Ext Time (p_c), s | 0.0 | 17.7 | | 0.5 | 0.1 | 17.7 | | 0.5 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 11.1 |
| HCM 6th LOS | B |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 25 | 31 | 1812 | 25 | 31 | 1679 |
| Future Vol, veh/h | 25 | 31 | 1812 | 25 | 31 | 1679 |
| 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 | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 27 | 34 | 1970 | 27 | 34 | 1825 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2965 | 999 | 0 | 0 | 1997 | 0 |
| Stage 1 | 1984 | - | - | - | - | - |
| Stage 2 | 981 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | ~ 11 | 242 | - | - | 284 | - |
| Stage 1 | 93 | - | - | - | - | - |
| Stage 2 | 324 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 10 | 242 | - | - | 284 | - |
| Mov Cap-2 Maneuver | 67 | - | - | - | - | - |
| Stage 1 | 93 | - | - | - | - | - |
| Stage 2 | 285 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 53.1 | 0 | 0.4 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 67 | 242 | 284 | - |
| HCM Lane V/C Ratio | - | - | 0.406 | 0.139 | 0.119 | - |
| HCM Control Delay (s) | - | - | 91.4 | 22.3 | 19.4 | - |
| HCM Lane LOS | - | - | F | C | C | - |
| HCM 95th %tile Q(veh) | - | - | 1.6 | 0.5 | 0.4 | - |

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

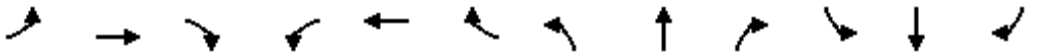
| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 114 | 116 | 1721 | 123 | 125 | 1579 |
| Future Volume (veh/h) | 114 | 116 | 1721 | 123 | 125 | 1579 |
| Initial Q (Qb), veh | 0 | 0 | 0 | 0 | 0 | 0 |
| Ped-Bike 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 | 1841 | 1870 | 1870 | 1841 |
| Adj Flow Rate, veh/h | 124 | 126 | 1871 | 134 | 136 | 1716 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 4 | 2 | 2 | 4 |
| Cap, veh/h | 141 | 143 | 2133 | 151 | 185 | 2575 |
| Arrive On Green | 0.17 | 0.17 | 0.64 | 0.64 | 0.05 | 0.74 |
| Sat Flow, veh/h | 829 | 842 | 3405 | 234 | 1781 | 3589 |
| Grp Volume(v), veh/h | 251 | 0 | 977 | 1028 | 136 | 1716 |
| Grp Sat Flow(s),veh/h/ln | 1677 | 0 | 1749 | 1799 | 1781 | 1749 |
| Q Serve(g_s), s | 15.6 | 0.0 | 48.3 | 50.9 | 2.6 | 27.2 |
| Cycle Q Clear(g_c), s | 15.6 | 0.0 | 48.3 | 50.9 | 2.6 | 27.2 |
| Prop In Lane | 0.49 | 0.50 | | 0.13 | 1.00 | |
| Lane Grp Cap(c), veh/h | 286 | 0 | 1126 | 1158 | 185 | 2575 |
| V/C Ratio(X) | 0.88 | 0.00 | 0.87 | 0.89 | 0.73 | 0.67 |
| Avail Cap(c_a), veh/h | 454 | 0 | 1241 | 1277 | 270 | 2973 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 43.3 | 0.0 | 15.4 | 15.9 | 26.0 | 7.3 |
| Incr Delay (d2), s/veh | 11.3 | 0.0 | 6.3 | 7.5 | 5.7 | 0.5 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 7.4 | 0.0 | 17.5 | 19.3 | 2.5 | 7.4 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 54.7 | 0.0 | 21.7 | 23.3 | 31.8 | 7.8 |
| LnGrp LOS | D | A | C | C | C | A |
| Approach Vol, veh/h | 251 | | 2005 | | | 1852 |
| Approach Delay, s/veh | 54.7 | | 22.5 | | | 9.5 |
| Approach LOS | D | | C | | | A |

| Timer - Assigned Phs | 1 | 2 | | | 6 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 9.9 | 73.9 | | | 83.8 | 23.2 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 10.0 | 76.0 | | | 91.0 | 29.0 |
| Max Q Clear Time (g_c+I1), s | 4.6 | 52.9 | | | 29.2 | 17.6 |
| Green Ext Time (p_c), s | 0.1 | 16.0 | | | 21.1 | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 18.6 |
| HCM 6th LOS | B |

**Notes**

User approved volume balancing among the lanes for turning movement.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 265 | 171 | 305 | 311 | 140 | 67 | 323 | 1416 | 265 | 40 | 1506 | 217 |
| Future Volume (veh/h) | 265 | 171 | 305 | 311 | 140 | 67 | 323 | 1416 | 265 | 40 | 1506 | 217 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 288 | 186 | 0 | 338 | 152 | 73 | 351 | 1539 | 0 | 43 | 1637 | 0 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 370 | 268 | | 408 | 184 | 89 | 423 | 2518 | | 62 | 2080 | |
| Arrive On Green | 0.11 | 0.14 | 0.00 | 0.12 | 0.15 | 0.15 | 0.12 | 0.50 | 0.00 | 0.04 | 0.41 | 0.00 |
| Sat Flow, veh/h | 3456 | 1870 | 1585 | 3456 | 1194 | 573 | 3456 | 5191 | 0 | 1781 | 5191 | 0 |
| Grp Volume(v), veh/h | 288 | 186 | 0 | 338 | 0 | 225 | 351 | 1539 | 0 | 43 | 1637 | 0 |
| Grp Sat Flow(s),veh/h/ln | 1728 | 1870 | 1585 | 1728 | 0 | 1767 | 1728 | 1675 | 0 | 1781 | 1675 | 0 |
| Q Serve(g_s), s | 8.0 | 9.3 | 0.0 | 9.4 | 0.0 | 12.2 | 9.8 | 21.8 | 0.0 | 2.4 | 28.0 | 0.0 |
| Cycle Q Clear(g_c), s | 8.0 | 9.3 | 0.0 | 9.4 | 0.0 | 12.2 | 9.8 | 21.8 | 0.0 | 2.4 | 28.0 | 0.0 |
| Prop In Lane | 1.00 | | 1.00 | 1.00 | | 0.32 | 1.00 | | 0.00 | 1.00 | | 0.00 |
| Lane Grp Cap(c), veh/h | 370 | 268 | | 408 | 0 | 273 | 423 | 2518 | | 62 | 2080 | |
| V/C Ratio(X) | 0.78 | 0.69 | | 0.83 | 0.00 | 0.82 | 0.83 | 0.61 | | 0.69 | 0.79 | |
| Avail Cap(c_a), veh/h | 595 | 644 | | 455 | 0 | 537 | 490 | 2950 | | 90 | 2492 | |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 1.00 | 0.00 |
| Uniform Delay (d), s/veh | 43.0 | 40.2 | 0.0 | 42.6 | 0.0 | 40.5 | 42.4 | 17.7 | 0.0 | 47.1 | 25.2 | 0.0 |
| Incr Delay (d2), s/veh | 3.6 | 3.2 | 0.0 | 11.2 | 0.0 | 6.2 | 10.2 | 0.3 | 0.0 | 12.6 | 1.5 | 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(50%),veh/ln | 3.5 | 4.5 | 0.0 | 4.6 | 0.0 | 5.7 | 4.6 | 7.5 | 0.0 | 1.2 | 10.4 | 0.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 46.5 | 43.4 | 0.0 | 53.8 | 0.0 | 46.7 | 52.6 | 18.0 | 0.0 | 59.8 | 26.6 | 0.0 |
| LnGrp LOS | D | D | | D | A | D | D | B | | E | C | |
| Approach Vol, veh/h | | 474 | | | 563 | | | 1890 | | | 1680 | |
| Approach Delay, s/veh | | 45.3 | | | 51.0 | | | 24.4 | | | 27.5 | |
| Approach LOS | | D | | | D | | | C | | | C | |

| Timer - Assigned Phs | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.5 | 54.5 | 16.7 | 19.2 | 17.1 | 45.9 | 15.6 | 20.3 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 5.0 | 58.0 | 13.0 | 34.0 | 14.0 | 49.0 | 17.0 | 30.0 |
| Max Q Clear Time (g_c+I1), s | 4.4 | 23.8 | 11.4 | 11.3 | 11.8 | 30.0 | 10.0 | 14.2 |
| Green Ext Time (p_c), s | 0.0 | 13.6 | 0.2 | 0.9 | 0.3 | 10.9 | 0.6 | 1.1 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 30.9 |
| HCM 6th LOS | C |

**Notes**

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

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 171 | 0 | 15 | 7 | 0 | 5 | 17 | 1472 | 8 | 5 | 1529 | 157 |
| Future Volume (veh/h) | 171 | 0 | 15 | 7 | 0 | 5 | 17 | 1472 | 8 | 5 | 1529 | 157 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 186 | 0 | 16 | 8 | 0 | 5 | 18 | 1600 | 9 | 5 | 1662 | 171 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 299 | 0 | 19 | 227 | 15 | 110 | 180 | 2349 | 13 | 212 | 2068 | 210 |
| Arrive On Green | 0.17 | 0.00 | 0.17 | 0.17 | 0.00 | 0.17 | 0.02 | 0.66 | 0.66 | 0.01 | 0.65 | 0.65 |
| Sat Flow, veh/h | 1323 | 0 | 114 | 966 | 90 | 660 | 1781 | 3566 | 20 | 1781 | 3206 | 325 |
| Grp Volume(v), veh/h | 202 | 0 | 0 | 13 | 0 | 0 | 18 | 784 | 825 | 5 | 896 | 937 |
| Grp Sat Flow(s),veh/h/ln | 1437 | 0 | 0 | 1716 | 0 | 0 | 1781 | 1749 | 1837 | 1781 | 1749 | 1782 |
| Q Serve(g_s), s | 11.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.3 | 24.9 | 24.9 | 0.1 | 33.4 | 35.2 |
| Cycle Q Clear(g_c), s | 12.2 | 0.0 | 0.0 | 0.6 | 0.0 | 0.0 | 0.3 | 24.9 | 24.9 | 0.1 | 33.4 | 35.2 |
| Prop In Lane | 0.92 | | 0.08 | 0.62 | | 0.38 | 1.00 | | 0.01 | 1.00 | | 0.18 |
| Lane Grp Cap(c), veh/h | 318 | 0 | 0 | 352 | 0 | 0 | 180 | 1152 | 1210 | 212 | 1128 | 1150 |
| V/C Ratio(X) | 0.64 | 0.00 | 0.00 | 0.04 | 0.00 | 0.00 | 0.10 | 0.68 | 0.68 | 0.02 | 0.79 | 0.81 |
| Avail Cap(c_a), veh/h | 508 | 0 | 0 | 548 | 0 | 0 | 244 | 1619 | 1701 | 300 | 1619 | 1650 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 36.1 | 0.0 | 0.0 | 31.3 | 0.0 | 0.0 | 12.5 | 9.5 | 9.5 | 8.6 | 11.6 | 11.9 |
| Incr Delay (d2), s/veh | 2.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.7 | 0.7 | 0.0 | 1.8 | 2.2 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 4.4 | 0.0 | 0.0 | 0.2 | 0.0 | 0.0 | 0.1 | 7.2 | 7.6 | 0.0 | 10.3 | 11.1 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 38.2 | 0.0 | 0.0 | 31.4 | 0.0 | 0.0 | 12.8 | 10.2 | 10.1 | 8.7 | 13.4 | 14.1 |
| LnGrp LOS | D | A | A | C | A | A | B | B | B | A | B | B |
| Approach Vol, veh/h | | 202 | | | 13 | | | 1627 | | | 1838 | |
| Approach Delay, s/veh | | 38.2 | | | 31.4 | | | 10.2 | | | 13.7 | |
| Approach LOS | | D | | | C | | | B | | | B | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 5.6 | 64.1 | | 20.0 | 6.8 | 62.8 | | 20.0 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 5.6 | 83.0 | | 27.0 | 5.0 | 83.0 | | 27.0 |
| Max Q Clear Time (g_c+I1), s | 2.1 | 26.9 | | 14.2 | 2.3 | 37.2 | | 2.6 |
| Green Ext Time (p_c), s | 0.0 | 16.4 | | 0.9 | 0.0 | 20.6 | | 0.0 |

| Intersection Summary | | |
|---|---|---|
| HCM 6th Ctrl Delay | | 13.6 |
| HCM 6th LOS | | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 45 | 10 | 40 | 35 | 6 | 43 | 50 | 1375 | 29 | 53 | 1485 | 57 |
| Future Volume (veh/h) | 45 | 10 | 40 | 35 | 6 | 43 | 50 | 1375 | 29 | 53 | 1485 | 57 |
| 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 | 1841 | 1870 | 1870 | 1841 | 1870 |
| Adj Flow Rate, veh/h | 49 | 11 | 43 | 38 | 7 | 47 | 54 | 1495 | 32 | 58 | 1614 | 62 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 4 | 2 | 2 | 4 | 2 |
| Cap, veh/h | 146 | 25 | 64 | 131 | 23 | 79 | 284 | 2191 | 47 | 319 | 2156 | 83 |
| Arrive On Green | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.05 | 0.63 | 0.63 | 0.05 | 0.63 | 0.63 |
| Sat Flow, veh/h | 694 | 272 | 692 | 573 | 249 | 859 | 1781 | 3501 | 75 | 1781 | 3434 | 131 |
| Grp Volume(v), veh/h | 103 | 0 | 0 | 92 | 0 | 0 | 54 | 746 | 781 | 58 | 819 | 857 |
| Grp Sat Flow(s),veh/h/ln | 1658 | 0 | 0 | 1681 | 0 | 0 | 1781 | 1749 | 1827 | 1781 | 1749 | 1817 |
| Q Serve(g_s), s | 0.5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 18.0 | 18.0 | 0.7 | 21.2 | 21.4 |
| Cycle Q Clear(g_c), s | 3.6 | 0.0 | 0.0 | 3.2 | 0.0 | 0.0 | 0.7 | 18.0 | 18.0 | 0.7 | 21.2 | 21.4 |
| Prop In Lane | 0.48 | | 0.42 | 0.41 | | 0.51 | 1.00 | | 0.04 | 1.00 | | 0.07 |
| Lane Grp Cap(c), veh/h | 234 | 0 | 0 | 233 | 0 | 0 | 284 | 1094 | 1143 | 319 | 1098 | 1141 |
| V/C Ratio(X) | 0.44 | 0.00 | 0.00 | 0.39 | 0.00 | 0.00 | 0.19 | 0.68 | 0.68 | 0.18 | 0.75 | 0.75 |
| Avail Cap(c_a), veh/h | 789 | 0 | 0 | 791 | 0 | 0 | 364 | 2141 | 2237 | 395 | 2141 | 2224 |
| 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 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 28.2 | 0.0 | 0.0 | 28.1 | 0.0 | 0.0 | 7.8 | 7.9 | 7.9 | 6.5 | 8.4 | 8.5 |
| Incr Delay (d2), s/veh | 1.3 | 0.0 | 0.0 | 1.1 | 0.0 | 0.0 | 0.3 | 0.8 | 0.7 | 0.3 | 1.0 | 1.0 |
| 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(50%),veh/ln | 1.5 | 0.0 | 0.0 | 1.3 | 0.0 | 0.0 | 0.2 | 4.0 | 4.2 | 0.1 | 4.8 | 5.0 |
| Unsig. Movement Delay, s/veh | | | | | | | | | | | | |
| LnGrp Delay(d),s/veh | 29.5 | 0.0 | 0.0 | 29.2 | 0.0 | 0.0 | 8.2 | 8.6 | 8.6 | 6.8 | 9.4 | 9.5 |
| LnGrp LOS | C | A | A | C | A | A | A | A | A | A | A | A |
| Approach Vol, veh/h | | 103 | | | 92 | | | 1581 | | | 1734 | |
| Approach Delay, s/veh | | 29.5 | | | 29.2 | | | 8.6 | | | 9.4 | |
| Approach LOS | | C | | | C | | | A | | | A | |

| Timer - Assigned Phs | 1 | 2 | | 4 | 5 | 6 | | 8 |
|---|---|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 8.2 | 45.4 | | 10.9 | 8.1 | 45.5 | | 10.9 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | | 5.0 |
| Max Green Setting (Gmax), s | 6.3 | 79.0 | | 30.0 | 6.0 | 79.0 | | 30.0 |
| Max Q Clear Time (g_c+I1), s | 2.7 | 20.0 | | 5.6 | 2.7 | 23.4 | | 5.2 |
| Green Ext Time (p_c), s | 0.0 | 14.1 | | 0.5 | 0.0 | 17.1 | | 0.4 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 10.1 |
| HCM 6th LOS | B |

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

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 22 | 29 | 1617 | 23 | 28 | 1681 |
| Future Vol, veh/h | 22 | 29 | 1617 | 23 | 28 | 1681 |
| 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 | 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 | 4 | 2 | 2 | 4 |
| Mvmt Flow | 24 | 32 | 1758 | 25 | 30 | 1827 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 2745 | 892 | 0 | 0 | 1783 | 0 |
| Stage 1 | 1771 | - | - | - | - | - |
| Stage 2 | 974 | - | - | - | - | - |
| Critical Hdwy | 6.84 | 6.94 | - | - | 4.14 | - |
| Critical Hdwy Stg 1 | 5.84 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.84 | - | - | - | - | - |
| Follow-up Hdwy | 3.52 | 3.32 | - | - | 2.22 | - |
| Pot Cap-1 Maneuver | ~ 16 | 285 | - | - | 344 | - |
| Stage 1 | 122 | - | - | - | - | - |
| Stage 2 | 327 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | ~ 15 | 285 | - | - | 344 | - |
| Mov Cap-2 Maneuver | 85 | - | - | - | - | - |
| Stage 1 | 122 | - | - | - | - | - |
| Stage 2 | 299 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 38.2 | 0 | 0.3 |
| HCM LOS | E | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | WBLn2 | SBL | SBT |
|---|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 85 | 285 | 344 | - |
| HCM Lane V/C Ratio | - | - | 0.281 | 0.111 | 0.088 | - |
| HCM Control Delay (s) | - | - | 63.2 | 19.2 | 16.5 | - |
| HCM Lane LOS | - | - | F | C | C | - |
| HCM 95th %tile Q(veh) | - | - | 1 | 0.4 | 0.3 | - |

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

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 114 | 116 | 1524 | 124 | 126 | 1577 |
| Future Volume (veh/h) | 114 | 116 | 1524 | 124 | 126 | 1577 |
| 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 | 1841 | 1870 | 1870 | 1841 |
| Adj Flow Rate, veh/h | 124 | 126 | 1657 | 135 | 137 | 1714 |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, % | 2 | 2 | 4 | 2 | 2 | 4 |
| Cap, veh/h | 143 | 145 | 2016 | 163 | 226 | 2520 |
| Arrive On Green | 0.17 | 0.17 | 0.62 | 0.62 | 0.05 | 0.72 |
| Sat Flow, veh/h | 829 | 842 | 3369 | 264 | 1781 | 3589 |
| Grp Volume(v), veh/h | 251 | 0 | 876 | 916 | 137 | 1714 |
| Grp Sat Flow(s),veh/h/ln | 1677 | 0 | 1749 | 1793 | 1781 | 1749 |
| Q Serve(g_s), s | 13.6 | 0.0 | 36.2 | 37.6 | 2.4 | 25.2 |
| Cycle Q Clear(g_c), s | 13.6 | 0.0 | 36.2 | 37.6 | 2.4 | 25.2 |
| Prop In Lane | 0.49 | 0.50 | | 0.15 | 1.00 | |
| Lane Grp Cap(c), veh/h | 290 | 0 | 1076 | 1103 | 226 | 2520 |
| V/C Ratio(X) | 0.87 | 0.00 | 0.81 | 0.83 | 0.61 | 0.68 |
| Avail Cap(c_a), veh/h | 466 | 0 | 1437 | 1474 | 361 | 3509 |
| HCM Platoon Ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I) | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh | 37.7 | 0.0 | 13.9 | 14.2 | 19.8 | 7.2 |
| Incr Delay (d2), s/veh | 9.6 | 0.0 | 2.8 | 3.1 | 2.6 | 0.3 |
| Initial Q Delay(d3),s/veh | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| %ile BackOfQ(50%),veh/ln | 6.3 | 0.0 | 12.2 | 13.1 | 1.9 | 6.3 |
| Unsig. Movement Delay, s/veh | | | | | | |
| LnGrp Delay(d),s/veh | 47.3 | 0.0 | 16.7 | 17.3 | 22.4 | 7.5 |
| LnGrp LOS | D | A | B | B | C | A |
| Approach Vol, veh/h | 251 | | 1792 | | | 1851 |
| Approach Delay, s/veh | 47.3 | | 17.0 | | | 8.6 |
| Approach LOS | D | | B | | | A |

| Timer - Assigned Phs | 1 | 2 | | | 6 | 8 |
|---|---|---|---|---|---|---|
| Phs Duration (G+Y+Rc), s | 9.9 | 62.6 | | | 72.5 | 21.2 |
| Change Period (Y+Rc), s | 5.0 | 5.0 | | | 5.0 | 5.0 |
| Max Green Setting (Gmax), s | 12.0 | 77.0 | | | 94.0 | 26.0 |
| Max Q Clear Time (g_c+I1), s | 4.4 | 39.6 | | | 27.2 | 15.6 |
| Green Ext Time (p_c), s | 0.2 | 18.0 | | | 21.4 | 0.6 |

| Intersection Summary | |
|---|---|
| HCM 6th Ctrl Delay | 15.0 |
| HCM 6th LOS | B |

**Notes**

User approved volume balancing among the lanes for turning movement.

# TRAFFIC SIGNAL WARRANTS

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #2 in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Driveway #2 (2026 Total)**

**Study Date : 1/23/2024**

# Signal Warrants - Summary

## Major Street Approaches

**Northbound: US-75**
Number of Lanes : 2+

Total Approach Volume: 13,053

**Southbound: US-75**
Number of Lanes :2+

Total Approach Volume: 13,241

## Minor Street Approaches

**Eastbound: Driveway #2**
Number of Lanes :1

Total Approach Volume: 0

**Westbound: Driveway #2**
Number of Lanes :1

Total Approach Volume: 2,888

## Warrant Summary (Rural Values Apply)

**Warrant 1 - Eight Hour Vehicular Volumes** ..... **Satisfied**

**Warrant 1A - Minimum Vehicular Volume** ..... **Satisfied**
Required volumes reached for 14 hours, 8 are needed

**Warrant 1B - Interruption of Continuous Traffic** ..... **Satisfied**
Required volumes reached for 15 hours, 8 are needed

**Warrant 1C - Combination of Warrants** ..... **Satisfied**
Required 1A volumes reached for 16 hours, 8 are needed
Required 1B volumes reached for 16 hours, 8 are needed

**Warrant 2 - Four Hour Volumes** ..... **Satisfied**
Number of hours (15) volumes exceed minimum >= minimum required (4).

**Warrant 3 - Peak Hour** ..... **Satisfied**

**Warrant 3A - Peak Hour Delay** ..... **Satisfied**
Number of one hour periods (45) volumes exceed minimum >= required (1). Delay data not evaluated.

**Warrant 3B - Peak Hour Volumes** ..... **Satisfied**
Volumes exceed minimums for at least one hour period.

**Warrant 4 - Pedestrian Volumes** ..... **Not Evaluated**

**Warrant 5 - School Crossing** ..... **Not Evaluated**

**Warrant 6 - Coordinated Signal System** ..... **Not Evaluated**

**Warrant 7 - Crash Experience** ..... **Not Evaluated**

**Warrant 8 - Roadway Network** ..... **Not Evaluated**

**Warrant 9 - Intersection Near a Grade Crossing** ..... **Not Evaluated**

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #2 in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Driveway #2 (2026 Total)**

**Study Date : 1/23/2024**

## Warrant 1A - Minimum Volumes

### Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

### Summary

14 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **420**

Veh/Hr Minor = **105**

| | Major Road US-75 | | | | | Minor Road Driveway #2 | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 1068 | + | 1176 | = | 2244 | 0 | 212 | Yes |
| 17:15 - 18:15 | 1102 | + | 999 | = | 2101 | 0 | 194 | Yes |
| 15:15 - 16:15 | 1004 | + | 1062 | = | 2066 | 0 | 198 | Yes |
| 14:15 - 15:15 | 875 | + | 966 | = | 1841 | 0 | 195 | Yes |
| 13:15 - 14:15 | 823 | + | 967 | = | 1790 | 0 | 169 | Yes |
| 12:15 - 13:15 | 798 | + | 795 | = | 1593 | 0 | 148 | Yes |
| 11:15 - 12:15 | 799 | + | 754 | = | 1553 | 0 | 126 | Yes |
| 10:15 - 11:15 | 709 | + | 797 | = | 1506 | 0 | 108 | Yes |
| 08:00 - 09:00 | 754 | + | 728 | = | 1482 | 0 | 108 | Yes |
| 18:15 - 19:15 | 754 | + | 647 | = | 1401 | 0 | 172 | Yes |
| 19:15 - 20:15 | 608 | + | 449 | = | 1057 | 0 | 159 | Yes |
| 20:15 - 21:15 | 495 | + | 394 | = | 889 | 0 | 152 | Yes |
| 21:15 - 22:15 | 322 | + | 246 | = | 568 | 0 | 143 | Yes |
| 22:15 - 23:15 | 272 | + | 162 | = | 434 | 0 | 148 | Yes |
| 07:30 - 08:30 | 797 | + | 719 | = | 1516 | 0 | 90 | No |
| 10:00 - 11:00 | 723 | + | 789 | = | 1512 | 0 | 104 | No |
| 07:15 - 08:15 | 785 | + | 724 | = | 1509 | 0 | 81 | No |
| 07:45 - 08:45 | 746 | + | 735 | = | 1481 | 0 | 99 | No |
| 09:45 - 10:45 | 689 | + | 761 | = | 1450 | 0 | 96 | No |
| 09:30 - 10:30 | 677 | + | 767 | = | 1444 | 0 | 88 | No |
| 07:00 - 08:00 | 716 | + | 721 | = | 1437 | 0 | 72 | No |
| 09:15 - 10:15 | 660 | + | 720 | = | 1380 | 0 | 80 | No |
| 06:45 - 07:45 | 669 | + | 688 | = | 1357 | 0 | 65 | No |
| 09:00 - 10:00 | 624 | + | 719 | = | 1343 | 0 | 72 | No |
| 06:30 - 07:30 | 567 | | 663 | | 1230 | 0 | 58 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #2 in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Driveway #2 (2026 Total)**

**Study Date : 1/23/2024**

## Warrant 1B - Interruption of Continuous Traffic

### Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

### Summary

15 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **630**

Veh/Hr Minor = **53**

| | Major Road US-75 | | | | | Minor Road Driveway #2 | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:30 - 17:30 | 1065 | + | 1152 | = | 2217 | 0 | 208 | Yes |
| 15:30 - 16:30 | 1044 | + | 1141 | = | 2185 | 0 | 204 | Yes |
| 17:30 - 18:30 | 1054 | + | 906 | = | 1960 | 0 | 188 | Yes |
| 14:30 - 15:30 | 912 | + | 977 | = | 1889 | 0 | 194 | Yes |
| 13:30 - 14:30 | 817 | + | 949 | = | 1766 | 0 | 178 | Yes |
| 12:30 - 13:30 | 804 | + | 818 | = | 1622 | 0 | 152 | Yes |
| 11:30 - 12:30 | 815 | + | 795 | = | 1610 | 0 | 132 | Yes |
| 07:30 - 08:30 | 797 | + | 719 | = | 1516 | 0 | 90 | Yes |
| 10:30 - 11:30 | 699 | + | 771 | = | 1470 | 0 | 112 | Yes |
| 09:30 - 10:30 | 677 | + | 767 | = | 1444 | 0 | 88 | Yes |
| 08:30 - 09:30 | 696 | + | 711 | = | 1407 | 0 | 90 | Yes |
| 18:30 - 19:30 | 694 | + | 582 | = | 1276 | 0 | 168 | Yes |
| 06:30 - 07:30 | 567 | + | 663 | = | 1230 | 0 | 58 | Yes |
| 19:30 - 20:30 | 566 | + | 425 | = | 991 | 0 | 158 | Yes |
| 20:30 - 21:30 | 472 | + | 366 | = | 838 | 0 | 148 | Yes |
| 06:15 - 07:15 | 472 | + | 593 | = | 1065 | 0 | 51 | No |
| 06:00 - 07:00 | 411 | + | 566 | = | 977 | 0 | 44 | No |
| 05:45 - 06:45 | 325 | + | 478 | = | 803 | 0 | 42 | No |
| 05:30 - 06:30 | 244 | + | 418 | = | 662 | 0 | 40 | No |
| 05:15 - 06:15 | 201 | + | 362 | = | 563 | 0 | 38 | No |
| 21:30 - 22:30 | 302 | + | 215 | = | 517 | 0 | 146 | No |
| 21:45 - 22:45 | 291 | + | 182 | = | 473 | 0 | 149 | No |
| 22:00 - 23:00 | 283 | + | 170 | = | 453 | 0 | 152 | No |
| 05:00 - 06:00 | 162 | + | 286 | = | 448 | 0 | 36 | No |
| 22:15 - 23:15 | 272 | | 162 | | 434 | 0 | 148 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #2 in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Driveway #2 (2026 Total)**

**Study Date : 1/23/2024**

## Warrant 1C Combination of Warrants

### Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

### Summary

16 hours meet 1A minimums.
16 hours meet 1B minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

### Volume Requirements

Rural Factor of 70% applied

| Warrant | 1A | 1B |
|---|---|---|
| Veh/Hr Major = | **336** | **504** |
| Veh/Hr Minor = | **84** | **42** |

**Major Road: US-75** | **Minor Road: Driveway #2**

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1A? |
|---|---|---|---|---|---|---|---|---|
| 16:30 - 17:30 | 1065 | + | 1152 | = | 2217 | 0 | 208 | Yes |
| 15:30 - 16:30 | 1044 | + | 1141 | = | 2185 | 0 | 204 | Yes |
| 17:30 - 18:30 | 1054 | + | 906 | = | 1960 | 0 | 188 | Yes |
| 14:30 - 15:30 | 912 | + | 977 | = | 1889 | 0 | 194 | Yes |
| 13:30 - 14:30 | 817 | + | 949 | = | 1766 | 0 | 178 | Yes |
| 12:30 - 13:30 | 804 | + | 818 | = | 1622 | 0 | 152 | Yes |
| 11:30 - 12:30 | 815 | + | 795 | = | 1610 | 0 | 132 | Yes |
| 07:30 - 08:30 | 797 | + | 719 | = | 1516 | 0 | 90 | Yes |
| 10:30 - 11:30 | 699 | + | 771 | = | 1470 | 0 | 112 | Yes |
| 09:30 - 10:30 | 677 | + | 767 | = | 1444 | 0 | 88 | Yes |
| 08:30 - 09:30 | 696 | + | 711 | = | 1407 | 0 | 90 | Yes |
| 18:30 - 19:30 | 694 | | 582 | | 1276 | 0 | 168 | Yes |

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1B? |
|---|---|---|---|---|---|---|---|---|
| 16:45 - 17:45 | 1117 | + | 1107 | = | 2224 | 0 | 204 | Yes |
| 15:45 - 16:45 | 1026 | + | 1146 | = | 2172 | 0 | 210 | Yes |
| 14:45 - 15:45 | 964 | + | 1046 | = | 2010 | 0 | 193 | Yes |
| 13:45 - 14:45 | 824 | + | 946 | = | 1770 | 0 | 187 | Yes |
| 17:45 - 18:45 | 936 | + | 818 | = | 1754 | 0 | 182 | Yes |
| 12:45 - 13:45 | 809 | + | 876 | = | 1685 | 0 | 156 | Yes |
| 11:45 - 12:45 | 825 | + | 786 | = | 1611 | 0 | 138 | Yes |
| 10:45 - 11:45 | 737 | + | 756 | = | 1493 | 0 | 116 | Yes |
| 07:45 - 08:45 | 746 | + | 735 | = | 1481 | 0 | 99 | Yes |
| 09:45 - 10:45 | 689 | + | 761 | = | 1450 | 0 | 96 | Yes |
| 08:45 - 09:45 | 672 | + | 731 | = | 1403 | 0 | 81 | Yes |
| 06:45 - 07:45 | 669 | | 688 | | 1357 | 0 | 65 | Yes |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #2 in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Driveway #2 (2026 Total)**

**Study Date : 1/23/2024**

## Warrant 2 - Four Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

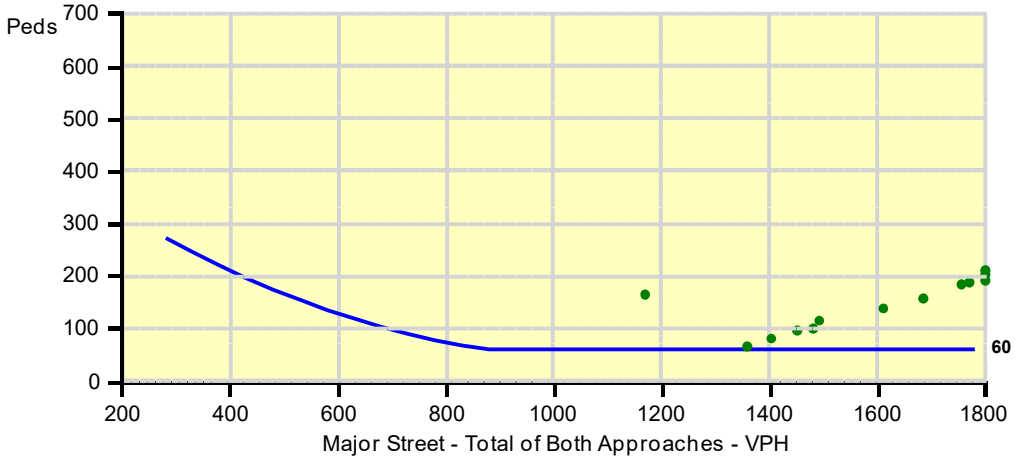
### Summary

15 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Driveway #2 | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:45 - 17:45 | 1117 | + | 1107 | = | 2224 | 0 | 204 | Yes |
| 15:45 - 16:45 | 1026 | + | 1146 | = | 2172 | 0 | 210 | Yes |
| 14:45 - 15:45 | 964 | + | 1046 | = | 2010 | 0 | 193 | Yes |
| 13:45 - 14:45 | 824 | + | 946 | = | 1770 | 0 | 187 | Yes |
| 17:45 - 18:45 | 936 | + | 818 | = | 1754 | 0 | 182 | Yes |
| 12:45 - 13:45 | 809 | + | 876 | = | 1685 | 0 | 156 | Yes |
| 11:45 - 12:45 | 825 | + | 786 | = | 1611 | 0 | 138 | Yes |
| 10:45 - 11:45 | 737 | + | 756 | = | 1493 | 0 | 116 | Yes |
| 07:45 - 08:45 | 746 | + | 735 | = | 1481 | 0 | 99 | Yes |
| 09:45 - 10:45 | 689 | + | 761 | = | 1450 | 0 | 96 | Yes |
| 08:45 - 09:45 | 672 | + | 731 | = | 1403 | 0 | 81 | Yes |
| | | | | | | | 65 | Yes |



# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #2 in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Driveway #2 (2026 Total)**

**Study Date : 1/23/2024**

## Warrant 3A - Peak Hour Delay

### Description

Intended for sites where for one hour of the day minor street traffic suffers undue traffic delay entering or crossing the major street.

### Summary

61 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

Number of Minor Lanes = **1**

### Volume and Delay Requirements

Veh/Hr All Approaches = **800**
Veh/Hr Minor = **100**
Total Delay (Veh-Hrs) = **4**

| | Major Road | | Minor Road | | | | | |
|---|---|---|---|---|---|---|---|---|
| | US-75 | | Driveway #2 | | | | | |
| Time | Total of All Approaches | Met? | Minor EB | Delay EB | Met? | Minor WB | Delay WB | Met? | Warrant Met? |
| 16:15 - 17:15 | 2456 | Yes | 0 | - | --- | 212 | - | Yes | Yes |
| 16:00 - 17:00 | 2437 | Yes | 0 | - | --- | 216 | - | Yes | Yes |
| 16:45 - 17:45 | 2428 | Yes | 0 | - | --- | 204 | - | Yes | Yes |
| 16:30 - 17:30 | 2425 | Yes | 0 | - | --- | 208 | - | Yes | Yes |
| 17:00 - 18:00 | 2412 | Yes | 0 | - | --- | 200 | - | Yes | Yes |
| 15:30 - 16:30 | 2389 | Yes | 0 | - | --- | 204 | - | Yes | Yes |
| 15:45 - 16:45 | 2382 | Yes | 0 | - | --- | 210 | - | Yes | Yes |
| 17:15 - 18:15 | 2295 | Yes | 0 | - | --- | 194 | - | Yes | Yes |
| 15:15 - 16:15 | 2264 | Yes | 0 | - | --- | 198 | - | Yes | Yes |
| 15:00 - 16:00 | 2213 | Yes | 0 | - | --- | 192 | - | Yes | Yes |
| 14:45 - 15:45 | 2203 | Yes | 0 | - | --- | 193 | - | Yes | Yes |
| 17:30 - 18:30 | 2148 | Yes | 0 | - | --- | 188 | - | Yes | Yes |
| 14:30 - 15:30 | 2083 | Yes | 0 | - | --- | 194 | - | Yes | Yes |
| 14:15 - 15:15 | 2036 | Yes | 0 | - | --- | 195 | - | Yes | Yes |
| 14:00 - 15:00 | 1974 | Yes | 0 | - | --- | 196 | - | Yes | Yes |
| 13:15 - 14:15 | 1959 | Yes | 0 | - | --- | 169 | - | Yes | Yes |
| 13:45 - 14:45 | 1957 | Yes | 0 | - | --- | 187 | - | Yes | Yes |
| 13:30 - 14:30 | 1944 | Yes | 0 | - | --- | 178 | - | Yes | Yes |
| 17:45 - 18:45 | 1936 | Yes | 0 | - | --- | 182 | - | Yes | Yes |
| 13:00 - 14:00 | 1901 | Yes | 0 | - | --- | 160 | - | Yes | Yes |
| 12:45 - 13:45 | 1841 | Yes | 0 | - | --- | 156 | - | Yes | Yes |
| 12:30 - 13:30 | 1774 | Yes | 0 | - | --- | 152 | - | Yes | Yes |
| 11:45 - 12:45 | 1749 | Yes | 0 | - | --- | 138 | - | Yes | Yes |
| 11:30 - 12:30 | 1742 | Yes | 0 | - | --- | 132 | - | Yes | Yes |
| 12:00 - 13:00 | 1742 | Yes | 0 | - | --- | 144 | - | Yes | Yes |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #2 in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Driveway #2 (2026 Total)**

**Study Date : 1/23/2024**

## Warrant 3B - Peak Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

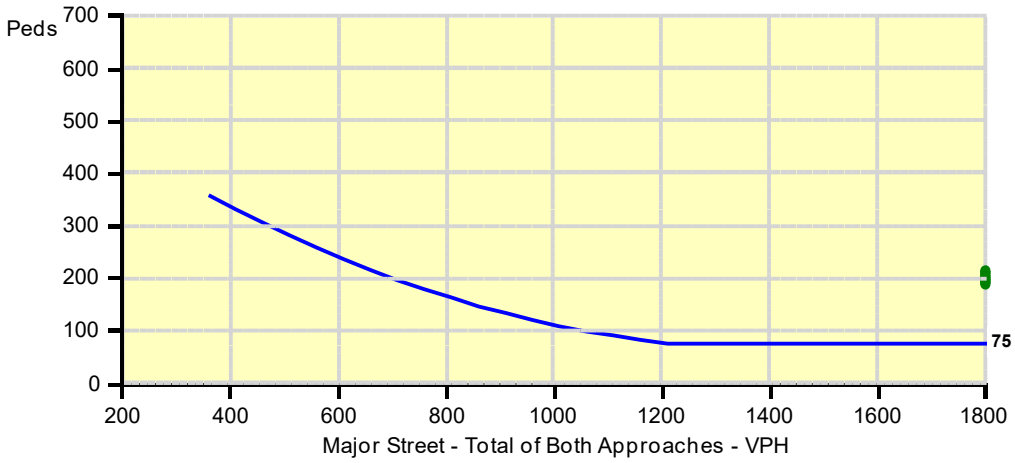
### Summary

52 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Driveway #2 | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 1068 | + | 1176 | = | 2244 | 0 | 212 | Yes |
| 16:45 - 17:45 | 1117 | + | 1107 | = | 2224 | 0 | 204 | Yes |
| 16:00 - 17:00 | 1054 | + | 1167 | = | 2221 | 0 | 216 | Yes |
| 16:30 - 17:30 | 1065 | + | 1152 | = | 2217 | 0 | 208 | Yes |
| 17:00 - 18:00 | 1139 | + | 1073 | = | 2212 | 0 | 200 | Yes |
| 15:30 - 16:30 | 1044 | + | 1141 | = | 2185 | 0 | 204 | Yes |
| 15:45 - 16:45 | 1026 | + | 1146 | = | 2172 | 0 | 210 | Yes |
| 17:15 - 18:15 | 1102 | + | 999 | = | 2101 | 0 | 194 | Yes |
| 15:15 - 16:15 | 1004 | + | 1062 | = | 2066 | 0 | 198 | Yes |
| 15:00 - 16:00 | 986 | + | 1035 | = | 2021 | 0 | 192 | Yes |
| 14:45 - 15:45 | 964 | + | 1046 | = | 2010 | 0 | 193 | Yes |
| | | | | | | | 188 | Yes |



# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #2 in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Driveway #2 (2046 Total)**

**Study Date : 1/23/2024**

# Signal Warrants - Summary

## Major Street Approaches

**Northbound: US-75**
Number of Lanes : 2+

Total Approach Volume: 21,111

**Southbound: US-75**
Number of Lanes :2+

Total Approach Volume: 21,422

## Minor Street Approaches

**Eastbound: Driveway #2**
Number of Lanes :1

Total Approach Volume: 0

**Westbound: Driveway #2**
Number of Lanes :1

Total Approach Volume: 2,888

## Warrant Summary (Rural Values Apply)

**Warrant 1 - Eight Hour Vehicular Volumes** ..... **Satisfied**

**Warrant 1A - Minimum Vehicular Volume** ..... **Satisfied**
Required volumes reached for 14 hours, 8 are needed

**Warrant 1B - Interruption of Continuous Traffic** ..... **Satisfied**
Required volumes reached for 16 hours, 8 are needed

**Warrant 1C - Combination of Warrants** ..... **Satisfied**
Required 1A volumes reached for 16 hours, 8 are needed
Required 1B volumes reached for 19 hours, 8 are needed

**Warrant 2 - Four Hour Volumes** ..... **Satisfied**
Number of hours (16) volumes exceed minimum >= minimum required (4).

**Warrant 3 - Peak Hour** ..... **Satisfied**

**Warrant 3A - Peak Hour Delay** ..... **Satisfied**
Number of one hour periods (50) volumes exceed minimum >= required (1). Delay data not evaluated.

**Warrant 3B - Peak Hour Volumes** ..... **Satisfied**
Volumes exceed minimums for at least one hour period.

**Warrant 4 - Pedestrian Volumes** ..... **Not Evaluated**

**Warrant 5 - School Crossing** ..... **Not Evaluated**

**Warrant 6 - Coordinated Signal System** ..... **Not Evaluated**

**Warrant 7 - Crash Experience** ..... **Not Evaluated**

**Warrant 8 - Roadway Network** ..... **Not Evaluated**

**Warrant 9 - Intersection Near a Grade Crossing** ..... **Not Evaluated**

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #2 in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Driveway #2 (2046 Total)**

**Study Date : 1/23/2024**

## Warrant 1A - Minimum Volumes

### Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

### Summary

14 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **420**

Veh/Hr Minor = **105**

| | Major Road US-75 | | | | | Minor Road Driveway #2 | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 1737 | + | 1920 | = | 3657 | 0 | 212 | Yes |
| 17:15 - 18:15 | 1799 | + | 1618 | = | 3417 | 0 | 194 | Yes |
| 15:15 - 16:15 | 1643 | + | 1740 | = | 3383 | 0 | 198 | Yes |
| 14:15 - 15:15 | 1418 | + | 1576 | = | 2994 | 0 | 195 | Yes |
| 13:15 - 14:15 | 1319 | + | 1568 | = | 2887 | 0 | 169 | Yes |
| 12:15 - 13:15 | 1288 | + | 1285 | = | 2573 | 0 | 148 | Yes |
| 11:15 - 12:15 | 1295 | + | 1215 | = | 2510 | 0 | 126 | Yes |
| 10:15 - 11:15 | 1152 | + | 1300 | = | 2452 | 0 | 108 | Yes |
| 08:00 - 09:00 | 1244 | + | 1198 | = | 2442 | 0 | 108 | Yes |
| 18:15 - 19:15 | 1215 | + | 1031 | = | 2246 | 0 | 172 | Yes |
| 19:15 - 20:15 | 971 | + | 695 | = | 1666 | 0 | 159 | Yes |
| 20:15 - 21:15 | 783 | + | 607 | = | 1390 | 0 | 152 | Yes |
| 21:15 - 22:15 | 495 | + | 364 | = | 859 | 0 | 143 | Yes |
| 22:15 - 23:15 | 414 | + | 229 | = | 643 | 0 | 148 | Yes |
| 07:30 - 08:30 | 1320 | + | 1185 | = | 2505 | 0 | 90 | No |
| 07:15 - 08:15 | 1301 | + | 1197 | = | 2498 | 0 | 81 | No |
| 10:00 - 11:00 | 1180 | + | 1292 | = | 2472 | 0 | 104 | No |
| 07:45 - 08:45 | 1231 | + | 1211 | = | 2442 | 0 | 99 | No |
| 07:00 - 08:00 | 1185 | + | 1194 | = | 2379 | 0 | 72 | No |
| 09:45 - 10:45 | 1126 | + | 1249 | = | 2375 | 0 | 96 | No |
| 09:30 - 10:30 | 1110 | + | 1265 | = | 2375 | 0 | 88 | No |
| 09:15 - 10:15 | 1086 | + | 1188 | = | 2274 | 0 | 80 | No |
| 06:45 - 07:45 | 1110 | + | 1142 | = | 2252 | 0 | 65 | No |
| 09:00 - 10:00 | 1029 | + | 1190 | = | 2219 | 0 | 72 | No |
| 06:30 - 07:30 | 940 | + | 1104 | = | 2044 | 0 | 58 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #2 in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Driveway #2 (2046 Total)**

**Study Date : 1/23/2024**

## Warrant 1B - Interruption of Continuous Traffic

### Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

### Summary

16 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **630**

Veh/Hr Minor = **53**

| | Major Road US-75 | | | | | Minor Road Driveway #2 | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:30 - 17:30 | 1732 | + | 1878 | = | 3610 | 0 | 208 | Yes |
| 15:30 - 16:30 | 1708 | + | 1871 | = | 3579 | 0 | 204 | Yes |
| 17:30 - 18:30 | 1720 | + | 1463 | = | 3183 | 0 | 188 | Yes |
| 14:30 - 15:30 | 1482 | + | 1596 | = | 3078 | 0 | 194 | Yes |
| 13:30 - 14:30 | 1312 | + | 1540 | = | 2852 | 0 | 178 | Yes |
| 12:30 - 13:30 | 1295 | + | 1320 | = | 2615 | 0 | 152 | Yes |
| 11:30 - 12:30 | 1321 | + | 1286 | = | 2607 | 0 | 132 | Yes |
| 07:30 - 08:30 | 1320 | + | 1185 | = | 2505 | 0 | 90 | Yes |
| 10:30 - 11:30 | 1132 | + | 1251 | = | 2383 | 0 | 112 | Yes |
| 09:30 - 10:30 | 1110 | + | 1265 | = | 2375 | 0 | 88 | Yes |
| 08:30 - 09:30 | 1150 | + | 1173 | = | 2323 | 0 | 90 | Yes |
| 06:30 - 07:30 | 940 | + | 1104 | = | 2044 | 0 | 58 | Yes |
| 18:30 - 19:30 | 1114 | + | 920 | = | 2034 | 0 | 168 | Yes |
| 19:30 - 20:30 | 899 | + | 656 | = | 1555 | 0 | 158 | Yes |
| 20:30 - 21:30 | 746 | + | 561 | = | 1307 | 0 | 148 | Yes |
| 21:30 - 22:30 | 462 | + | 312 | = | 774 | 0 | 146 | Yes |
| 06:15 - 07:15 | 781 | + | 987 | = | 1768 | 0 | 51 | No |
| 06:00 - 07:00 | 681 | + | 945 | = | 1626 | 0 | 44 | No |
| 05:45 - 06:45 | 535 | + | 797 | = | 1332 | 0 | 42 | No |
| 05:30 - 06:30 | 397 | + | 696 | = | 1093 | 0 | 40 | No |
| 05:15 - 06:15 | 327 | + | 603 | = | 930 | 0 | 38 | No |
| 05:00 - 06:00 | 263 | + | 475 | = | 738 | 0 | 36 | No |
| 04:45 - 05:45 | 205 | + | 432 | = | 637 | 0 | 39 | No |
| 22:30 - 23:30 | 376 | + | 220 | = | 596 | 0 | 144 | No |
| 04:30 - 05:30 | 175 | | 379 | | 554 | 0 | 42 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #2 in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Driveway #2 (2046 Total)**

**Study Date : 1/23/2024**

## Warrant 1C Combination of Warrants

### Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

### Summary

16 hours meet 1A minimums.
19 hours meet 1B minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

### Volume Requirements

Rural Factor of 70% applied

| Warrant | 1A | 1B |
|---|---|---|
| Veh/Hr Major = | **336** | **504** |
| Veh/Hr Minor = | **84** | **42** |

**Major Road: US-75** | **Minor Road: Driveway #2**

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1A? |
|---|---|---|---|---|---|---|---|---|
| 16:30 - 17:30 | 1732 | + | 1878 | = | 3610 | 0 | 208 | Yes |
| 15:30 - 16:30 | 1708 | + | 1871 | = | 3579 | 0 | 204 | Yes |
| 17:30 - 18:30 | 1720 | + | 1463 | = | 3183 | 0 | 188 | Yes |
| 14:30 - 15:30 | 1482 | + | 1596 | = | 3078 | 0 | 194 | Yes |
| 13:30 - 14:30 | 1312 | + | 1540 | = | 2852 | 0 | 178 | Yes |
| 12:30 - 13:30 | 1295 | + | 1320 | = | 2615 | 0 | 152 | Yes |
| 11:30 - 12:30 | 1321 | + | 1286 | = | 2607 | 0 | 132 | Yes |
| 07:30 - 08:30 | 1320 | + | 1185 | = | 2505 | 0 | 90 | Yes |
| 10:30 - 11:30 | 1132 | + | 1251 | = | 2383 | 0 | 112 | Yes |
| 09:30 - 10:30 | 1110 | + | 1265 | = | 2375 | 0 | 88 | Yes |
| 08:30 - 09:30 | 1150 | + | 1173 | = | 2323 | 0 | 90 | Yes |
| 18:30 - 19:30 | 1114 | | 920 | | 2034 | 0 | 168 | Yes |

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1B? |
|---|---|---|---|---|---|---|---|---|
| 16:45 - 17:45 | 1821 | + | 1800 | = | 3621 | 0 | 204 | Yes |
| 15:45 - 16:45 | 1673 | + | 1875 | = | 3548 | 0 | 210 | Yes |
| 14:45 - 15:45 | 1574 | + | 1715 | = | 3289 | 0 | 193 | Yes |
| 13:45 - 14:45 | 1325 | + | 1537 | = | 2862 | 0 | 187 | Yes |
| 17:45 - 18:45 | 1521 | + | 1317 | = | 2838 | 0 | 182 | Yes |
| 12:45 - 13:45 | 1299 | + | 1416 | = | 2715 | 0 | 156 | Yes |
| 11:45 - 12:45 | 1339 | + | 1272 | = | 2611 | 0 | 138 | Yes |
| 07:45 - 08:45 | 1231 | + | 1211 | = | 2442 | 0 | 99 | Yes |
| 10:45 - 11:45 | 1193 | + | 1221 | = | 2414 | 0 | 116 | Yes |
| 09:45 - 10:45 | 1126 | + | 1249 | = | 2375 | 0 | 96 | Yes |
| 08:45 - 09:45 | 1110 | + | 1209 | = | 2319 | 0 | 81 | Yes |
| 06:45 - 07:45 | 1110 | | 1142 | | 2252 | 0 | 65 | Yes |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #2 in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Driveway #2 (2046 Total)**

**Study Date : 1/23/2024**

## Warrant 2 - Four Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

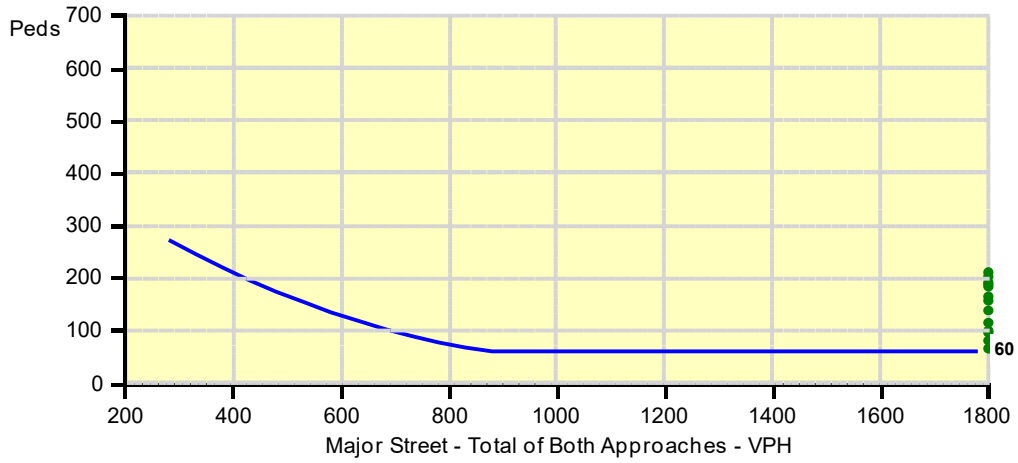
### Summary

16 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Driveway #2 | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:45 - 17:45 | 1821 | + | 1800 | = | 3621 | 0 | 204 | Yes |
| 15:45 - 16:45 | 1673 | + | 1875 | = | 3548 | 0 | 210 | Yes |
| 14:45 - 15:45 | 1574 | + | 1715 | = | 3289 | 0 | 193 | Yes |
| 13:45 - 14:45 | 1325 | + | 1537 | = | 2862 | 0 | 187 | Yes |
| 17:45 - 18:45 | 1521 | + | 1317 | = | 2838 | 0 | 182 | Yes |
| 12:45 - 13:45 | 1299 | + | 1416 | = | 2715 | 0 | 156 | Yes |
| 11:45 - 12:45 | 1339 | + | 1272 | = | 2611 | 0 | 138 | Yes |
| 07:45 - 08:45 | 1231 | + | 1211 | = | 2442 | 0 | 99 | Yes |
| 10:45 - 11:45 | 1193 | + | 1221 | = | 2414 | 0 | 116 | Yes |
| 09:45 - 10:45 | 1126 | + | 1249 | = | 2375 | 0 | 96 | Yes |
| 08:45 - 09:45 | 1110 | + | 1209 | = | 2319 | 0 | 81 | Yes |
| | | | | | | | 65 | Yes |



# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #2 in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Driveway #2 (2046 Total)**

**Study Date : 1/23/2024**

## Warrant 3A - Peak Hour Delay

### Description

Intended for sites where for one hour of the day minor street traffic suffers undue traffic delay entering or crossing the major street.

### Summary

68 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

Number of Minor Lanes = **1**

### Volume and Delay Requirements

Veh/Hr All Approaches = **800**
Veh/Hr Minor = **100**
Total Delay (Veh-Hrs) = **4**

| | Major Road US-75 | | Minor Road Driveway #2 | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Time | Total of All Approaches | Met? | Minor EB | Delay EB | Met? | Minor WB | Delay WB | Met? | Warrant Met? |
| 16:15 - 17:15 | 3869 | Yes | 0 | - | --- | 212 | - | Yes | Yes |
| 16:00 - 17:00 | 3836 | Yes | 0 | - | --- | 216 | - | Yes | Yes |
| 16:45 - 17:45 | 3825 | Yes | 0 | - | --- | 204 | - | Yes | Yes |
| 16:30 - 17:30 | 3818 | Yes | 0 | - | --- | 208 | - | Yes | Yes |
| 17:00 - 18:00 | 3799 | Yes | 0 | - | --- | 200 | - | Yes | Yes |
| 15:30 - 16:30 | 3783 | Yes | 0 | - | --- | 204 | - | Yes | Yes |
| 15:45 - 16:45 | 3758 | Yes | 0 | - | --- | 210 | - | Yes | Yes |
| 17:15 - 18:15 | 3611 | Yes | 0 | - | --- | 194 | - | Yes | Yes |
| 15:15 - 16:15 | 3581 | Yes | 0 | - | --- | 198 | - | Yes | Yes |
| 15:00 - 16:00 | 3507 | Yes | 0 | - | --- | 192 | - | Yes | Yes |
| 14:45 - 15:45 | 3482 | Yes | 0 | - | --- | 193 | - | Yes | Yes |
| 17:30 - 18:30 | 3371 | Yes | 0 | - | --- | 188 | - | Yes | Yes |
| 14:30 - 15:30 | 3272 | Yes | 0 | - | --- | 194 | - | Yes | Yes |
| 14:15 - 15:15 | 3189 | Yes | 0 | - | --- | 195 | - | Yes | Yes |
| 14:00 - 15:00 | 3077 | Yes | 0 | - | --- | 196 | - | Yes | Yes |
| 13:15 - 14:15 | 3056 | Yes | 0 | - | --- | 169 | - | Yes | Yes |
| 13:45 - 14:45 | 3049 | Yes | 0 | - | --- | 187 | - | Yes | Yes |
| 13:30 - 14:30 | 3030 | Yes | 0 | - | --- | 178 | - | Yes | Yes |
| 17:45 - 18:45 | 3020 | Yes | 0 | - | --- | 182 | - | Yes | Yes |
| 13:00 - 14:00 | 2960 | Yes | 0 | - | --- | 160 | - | Yes | Yes |
| 12:45 - 13:45 | 2871 | Yes | 0 | - | --- | 156 | - | Yes | Yes |
| 12:30 - 13:30 | 2767 | Yes | 0 | - | --- | 152 | - | Yes | Yes |
| 11:45 - 12:45 | 2749 | Yes | 0 | - | --- | 138 | - | Yes | Yes |
| 11:30 - 12:30 | 2739 | Yes | 0 | - | --- | 132 | - | Yes | Yes |
| 12:00 - 13:00 | 2733 | Yes | 0 | - | --- | 144 | - | Yes | Yes |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #2 in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Driveway #2 (2046 Total)**

**Study Date : 1/23/2024**

## Warrant 3B - Peak Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

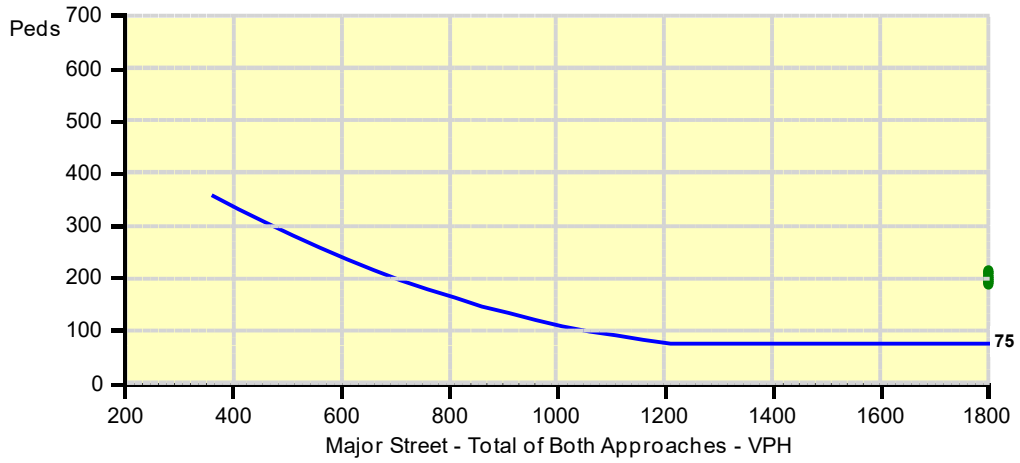
### Summary

55 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Driveway #2 | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 1737 | + | 1920 | = | 3657 | 0 | 212 | Yes |
| 16:45 - 17:45 | 1821 | + | 1800 | = | 3621 | 0 | 204 | Yes |
| 16:00 - 17:00 | 1715 | + | 1905 | = | 3620 | 0 | 216 | Yes |
| 16:30 - 17:30 | 1732 | + | 1878 | = | 3610 | 0 | 208 | Yes |
| 17:00 - 18:00 | 1858 | + | 1741 | = | 3599 | 0 | 200 | Yes |
| 15:30 - 16:30 | 1708 | + | 1871 | = | 3579 | 0 | 204 | Yes |
| 15:45 - 16:45 | 1673 | + | 1875 | = | 3548 | 0 | 210 | Yes |
| 17:15 - 18:15 | 1799 | + | 1618 | = | 3417 | 0 | 194 | Yes |
| 15:15 - 16:15 | 1643 | + | 1740 | = | 3383 | 0 | 198 | Yes |
| 15:00 - 16:00 | 1616 | + | 1699 | = | 3315 | 0 | 192 | Yes |
| 14:45 - 15:45 | 1574 | + | 1715 | = | 3289 | 0 | 193 | Yes |
| | | | | | | | 188 | Yes |



# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2023 Existing Conditions

**Study Name: T-3110 Driveway #3 (Existing)**

**Study Date : 1/23/2024**

# Signal Warrants - Summary

## Major Street Approaches

**Northbound: US-75**
Number of Lanes : 2+

Total Approach Volume: 9,558

**Southbound: US-75**
Number of Lanes :2+

Total Approach Volume: 10,227

## Minor Street Approaches

**Eastbound: Atwoods**
Number of Lanes :1

Total Approach Volume: 615

**Westbound: Driveway #3**
Number of Lanes :1

Total Approach Volume: 0

## Warrant Summary (Rural Values Apply)

**Warrant 1 - Eight Hour Vehicular Volumes** ..... **Not Satisfied**

**Warrant 1A - Minimum Vehicular Volume** ..... **Not Satisfied**
Required volumes reached for 0 hours, 8 are needed

**Warrant 1B - Interruption of Continuous Traffic** ..... **Not Satisfied**
Required volumes reached for 7 hours, 8 are needed

**Warrant 1C - Combination of Warrants** ..... **Not Satisfied**
Required 1A volumes reached for 0 hours, 8 are needed
Required 1B volumes reached for 9 hours, 8 are needed

**Warrant 2 - Four Hour Volumes** ..... **Satisfied**
Number of hours (5) volumes exceed minimum >= minimum required (4).

**Warrant 3 - Peak Hour** ..... **Not Satisfied**

**Warrant 3A - Peak Hour Delay** ..... **Not Satisfied**
Approach volumes on minor street don't exceed minimums for any one hour period. Delay data not evaluated.

**Warrant 3B - Peak Hour Volumes** ..... **Not Satisfied**
Volumes do not exceed minimums for any one hour period.

**Warrant 4 - Pedestrian Volumes** ..... **Not Evaluated**

**Warrant 5 - School Crossing** ..... **Not Evaluated**

**Warrant 6 - Coordinated Signal System** ..... **Not Evaluated**

**Warrant 7 - Crash Experience** ..... **Not Evaluated**

**Warrant 8 - Roadway Network** ..... **Not Evaluated**

**Warrant 9 - Intersection Near a Grade Crossing** ..... **Not Evaluated**

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2023 Existing Conditions

**Study Name: T-3110 Driveway #3 (Existing)**

**Study Date : 1/23/2024**

## Warrant 1A - Minimum Volumes

### Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

### Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **420**

Veh/Hr Minor = **105**

| | Major Road US-75 | | | | | Minor Road Atwoods | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 789 | + | 930 | = | 1719 | 65 | 0 | No |
| 16:30 - 17:30 | 791 | + | 908 | = | 1699 | 65 | 0 | No |
| 16:45 - 17:45 | 831 | + | 867 | = | 1698 | 70 | 0 | No |
| 16:00 - 17:00 | 775 | + | 923 | = | 1698 | 62 | 0 | No |
| 15:30 - 16:30 | 782 | + | 913 | = | 1695 | 57 | 0 | No |
| 17:00 - 18:00 | 854 | + | 836 | = | 1690 | 64 | 0 | No |
| 15:45 - 16:45 | 762 | + | 911 | = | 1673 | 56 | 0 | No |
| 17:15 - 18:15 | 825 | + | 775 | = | 1600 | 57 | 0 | No |
| 15:15 - 16:15 | 751 | + | 848 | = | 1599 | 57 | 0 | No |
| 15:00 - 16:00 | 736 | + | 830 | = | 1566 | 62 | 0 | No |
| 14:45 - 15:45 | 709 | + | 837 | = | 1546 | 63 | 0 | No |
| 17:30 - 18:30 | 788 | + | 697 | = | 1485 | 55 | 0 | No |
| 14:30 - 15:30 | 662 | + | 773 | = | 1435 | 60 | 0 | No |
| 14:15 - 15:15 | 630 | + | 761 | = | 1391 | 60 | 0 | No |
| 14:00 - 15:00 | 580 | + | 742 | = | 1322 | 63 | 0 | No |
| 17:45 - 18:45 | 696 | + | 624 | = | 1320 | 44 | 0 | No |
| 13:15 - 14:15 | 564 | + | 751 | = | 1315 | 60 | 0 | No |
| 13:45 - 14:45 | 570 | + | 737 | = | 1307 | 63 | 0 | No |
| 13:30 - 14:30 | 559 | + | 738 | = | 1297 | 64 | 0 | No |
| 13:00 - 14:00 | 549 | + | 719 | = | 1268 | 60 | 0 | No |
| 07:30 - 08:30 | 651 | + | 583 | = | 1234 | 3 | 0 | No |
| 07:15 - 08:15 | 644 | + | 590 | = | 1234 | 2 | 0 | No |
| 12:45 - 13:45 | 556 | + | 674 | = | 1230 | 61 | 0 | No |
| 11:45 - 12:45 | 600 | + | 607 | = | 1207 | 48 | 0 | No |
| 11:30 - 12:30 | 593 | | 613 | | 1206 | 47 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2023 Existing Conditions

**Study Name: T-3110 Driveway #3 (Existing)**

**Study Date : 1/23/2024**

## Warrant 1B - Interruption of Continuous Traffic

### Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

### Summary

Only 7 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **630**

Veh/Hr Minor = **53**

| | Major Road US-75 | | | | | Minor Road Atwoods | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 789 | + | 930 | = | 1719 | 65 | 0 | Yes |
| 17:15 - 18:15 | 825 | + | 775 | = | 1600 | 57 | 0 | Yes |
| 15:15 - 16:15 | 751 | + | 848 | = | 1599 | 57 | 0 | Yes |
| 14:15 - 15:15 | 630 | + | 761 | = | 1391 | 60 | 0 | Yes |
| 13:15 - 14:15 | 564 | + | 751 | = | 1315 | 60 | 0 | Yes |
| 12:15 - 13:15 | 555 | + | 612 | = | 1167 | 61 | 0 | Yes |
| 11:15 - 12:15 | 575 | + | 576 | = | 1151 | 53 | 0 | Yes |
| 07:30 - 08:30 | 651 | + | 583 | = | 1234 | 3 | 0 | No |
| 07:15 - 08:15 | 644 | + | 590 | = | 1234 | 2 | 0 | No |
| 07:45 - 08:45 | 601 | + | 596 | = | 1197 | 6 | 0 | No |
| 08:00 - 09:00 | 604 | + | 589 | = | 1193 | 9 | 0 | No |
| 07:00 - 08:00 | 585 | + | 590 | = | 1175 | 2 | 0 | No |
| 10:00 - 11:00 | 537 | + | 629 | = | 1166 | 42 | 0 | No |
| 08:15 - 09:15 | 560 | + | 604 | = | 1164 | 15 | 0 | No |
| 10:15 - 11:15 | 518 | + | 630 | = | 1148 | 43 | 0 | No |
| 08:30 - 09:30 | 551 | + | 579 | = | 1130 | 23 | 0 | No |
| 11:00 - 12:00 | 549 | + | 581 | = | 1130 | 50 | 0 | No |
| 09:30 - 10:30 | 505 | + | 622 | = | 1127 | 41 | 0 | No |
| 08:45 - 09:45 | 526 | + | 599 | = | 1125 | 29 | 0 | No |
| 09:45 - 10:45 | 511 | + | 610 | = | 1121 | 42 | 0 | No |
| 06:45 - 07:45 | 549 | + | 566 | = | 1115 | 1 | 0 | No |
| 10:45 - 11:45 | 529 | + | 583 | = | 1112 | 48 | 0 | No |
| 10:30 - 11:30 | 503 | + | 602 | = | 1105 | 46 | 0 | No |
| 09:15 - 10:15 | 504 | + | 586 | = | 1090 | 36 | 0 | No |
| 09:00 - 10:00 | 480 | | 590 | | 1070 | 35 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2023 Existing Conditions

**Study Name: T-3110 Driveway #3 (Existing)**

**Study Date : 1/23/2024**

## Warrant 1C Combination of Warrants

### Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

### Summary

Only 0 hours meet 1A minimums.
9 hours meet 1B minimums.
Warrant is NOT met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

### Volume Requirements

Rural Factor of 70% applied

| Warrant | 1A | 1B |
|---|---|---|
| Veh/Hr Major = | **336** | **504** |
| Veh/Hr Minor = | **84** | **42** |

**Major Road: US-75** | **Minor Road: Atwoods**

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1A? |
|---|---|---|---|---|---|---|---|---|
| 16:15 - 17:15 | 789 | + | 930 | = | 1719 | 65 | 0 | No |
| 16:30 - 17:30 | 791 | + | 908 | = | 1699 | 65 | 0 | No |
| 16:45 - 17:45 | 831 | + | 867 | = | 1698 | 70 | 0 | No |
| 16:00 - 17:00 | 775 | + | 923 | = | 1698 | 62 | 0 | No |
| 15:30 - 16:30 | 782 | + | 913 | = | 1695 | 57 | 0 | No |
| 17:00 - 18:00 | 854 | + | 836 | = | 1690 | 64 | 0 | No |
| 15:45 - 16:45 | 762 | + | 911 | = | 1673 | 56 | 0 | No |
| 17:15 - 18:15 | 825 | + | 775 | = | 1600 | 57 | 0 | No |
| 15:15 - 16:15 | 751 | + | 848 | = | 1599 | 57 | 0 | No |
| 15:00 - 16:00 | 736 | + | 830 | = | 1566 | 62 | 0 | No |
| 14:45 - 15:45 | 709 | + | 837 | = | 1546 | 63 | 0 | No |
| 17:30 - 18:30 | 788 | + | 697 | = | 1485 | 55 | 0 | No |

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1B? |
|---|---|---|---|---|---|---|---|---|
| 16:45 - 17:45 | 831 | + | 867 | = | 1698 | 70 | 0 | Yes |
| 15:45 - 16:45 | 762 | + | 911 | = | 1673 | 56 | 0 | Yes |
| 14:45 - 15:45 | 709 | + | 837 | = | 1546 | 63 | 0 | Yes |
| 17:45 - 18:45 | 696 | + | 624 | = | 1320 | 44 | 0 | Yes |
| 13:45 - 14:45 | 570 | + | 737 | = | 1307 | 63 | 0 | Yes |
| 12:45 - 13:45 | 556 | + | 674 | = | 1230 | 61 | 0 | Yes |
| 11:45 - 12:45 | 600 | + | 607 | = | 1207 | 48 | 0 | Yes |
| 09:45 - 10:45 | 511 | + | 610 | = | 1121 | 42 | 0 | Yes |
| 10:45 - 11:45 | 529 | + | 583 | = | 1112 | 48 | 0 | Yes |
| 07:30 - 08:30 | 651 | + | 583 | = | 1234 | 3 | 0 | No |
| 07:15 - 08:15 | 644 | + | 590 | = | 1234 | 2 | 0 | No |
| 07:45 - 08:45 | 601 | + | 596 | = | 1197 | 6 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2023 Existing Conditions

**Study Name: T-3110 Driveway #3 (Existing)**

**Study Date : 1/23/2024**

## Warrant 2 - Four Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

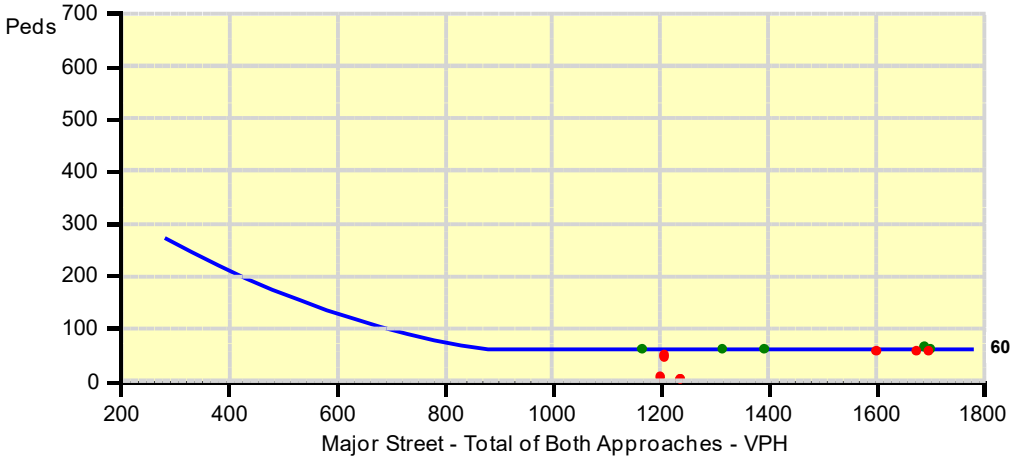
### Summary

5 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Atwoods | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:00 - 17:00 | 775 | + | 923 | = | 1698 | 62 | 0 | Yes |
| 17:00 - 18:00 | 854 | + | 836 | = | 1690 | 64 | 0 | Yes |
| 14:15 - 15:15 | 630 | + | 761 | = | 1391 | 60 | 0 | Yes |
| 13:15 - 14:15 | 564 | + | 751 | = | 1315 | 60 | 0 | Yes |
| 12:15 - 13:15 | 555 | + | 612 | = | 1167 | 61 | 0 | Yes |
| 15:30 - 16:30 | 782 | + | 913 | = | 1695 | 57 | 0 | No |
| 15:45 - 16:45 | 762 | + | 911 | = | 1673 | 56 | 0 | No |
| 15:15 - 16:15 | 751 | + | 848 | = | 1599 | 57 | 0 | No |
| 07:30 - 08:30 | 651 | + | 583 | = | 1234 | 3 | 0 | No |
| 07:15 - 08:15 | 644 | + | 590 | = | 1234 | 2 | 0 | No |
| 11:45 - 12:45 | 600 | + | 607 | = | 1207 | 48 | 0 | No |
| | | | | | | | 0 | No |



# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2023 Existing Conditions

**Study Name: T-3110 Driveway #3 (Existing)**

**Study Date : 1/23/2024**

## Warrant 3A - Peak Hour Delay

### Description

Intended for sites where for one hour of the day minor street traffic suffers undue traffic delay entering or crossing the major street.

### Summary

53 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Number of Minor Lanes = **1**

### Volume and Delay Requirements

Veh/Hr All Approaches = **800**
Veh/Hr Minor = **100**
Total Delay (Veh-Hrs) = **4**

| Major Road | Minor Road |
|---|---|
| US-75 | Atwoods |

| Time | Total of All Approaches | Met? | Minor EB | Delay EB | Met? | Minor WB | Delay WB | Met? | Warrant Met? |
|---|---|---|---|---|---|---|---|---|---|
| 16:15 - 17:15 | 1784 | Yes | 65 | - | No | 0 | - | --- | No |
| 16:45 - 17:45 | 1768 | Yes | 70 | - | No | 0 | - | --- | No |
| 16:30 - 17:30 | 1764 | Yes | 65 | - | No | 0 | - | --- | No |
| 16:00 - 17:00 | 1760 | Yes | 62 | - | No | 0 | - | --- | No |
| 17:00 - 18:00 | 1754 | Yes | 64 | - | No | 0 | - | --- | No |
| 15:30 - 16:30 | 1752 | Yes | 57 | - | No | 0 | - | --- | No |
| 15:45 - 16:45 | 1729 | Yes | 56 | - | No | 0 | - | --- | No |
| 17:15 - 18:15 | 1657 | Yes | 57 | - | No | 0 | - | --- | No |
| 15:15 - 16:15 | 1656 | Yes | 57 | - | No | 0 | - | --- | No |
| 15:00 - 16:00 | 1628 | Yes | 62 | - | No | 0 | - | --- | No |
| 14:45 - 15:45 | 1609 | Yes | 63 | - | No | 0 | - | --- | No |
| 17:30 - 18:30 | 1540 | Yes | 55 | - | No | 0 | - | --- | No |
| 14:30 - 15:30 | 1495 | Yes | 60 | - | No | 0 | - | --- | No |
| 14:15 - 15:15 | 1451 | Yes | 60 | - | No | 0 | - | --- | No |
| 14:00 - 15:00 | 1385 | Yes | 63 | - | No | 0 | - | --- | No |
| 13:15 - 14:15 | 1375 | Yes | 60 | - | No | 0 | - | --- | No |
| 13:45 - 14:45 | 1370 | Yes | 63 | - | No | 0 | - | --- | No |
| 17:45 - 18:45 | 1364 | Yes | 44 | - | No | 0 | - | --- | No |
| 13:30 - 14:30 | 1361 | Yes | 64 | - | No | 0 | - | --- | No |
| 13:00 - 14:00 | 1328 | Yes | 60 | - | No | 0 | - | --- | No |
| 12:45 - 13:45 | 1291 | Yes | 61 | - | No | 0 | - | --- | No |
| 11:45 - 12:45 | 1255 | Yes | 48 | - | No | 0 | - | --- | No |
| 11:30 - 12:30 | 1253 | Yes | 47 | - | No | 0 | - | --- | No |
| 12:30 - 13:30 | 1244 | Yes | 60 | - | No | 0 | - | --- | No |
| 12:00 - 13:00 | 1241 | Yes | 51 | - | No | 0 | - | --- | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2023 Existing Conditions

**Study Name: T-3110 Driveway #3 (Existing)**

**Study Date : 1/23/2024**

## Warrant 3B - Peak Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

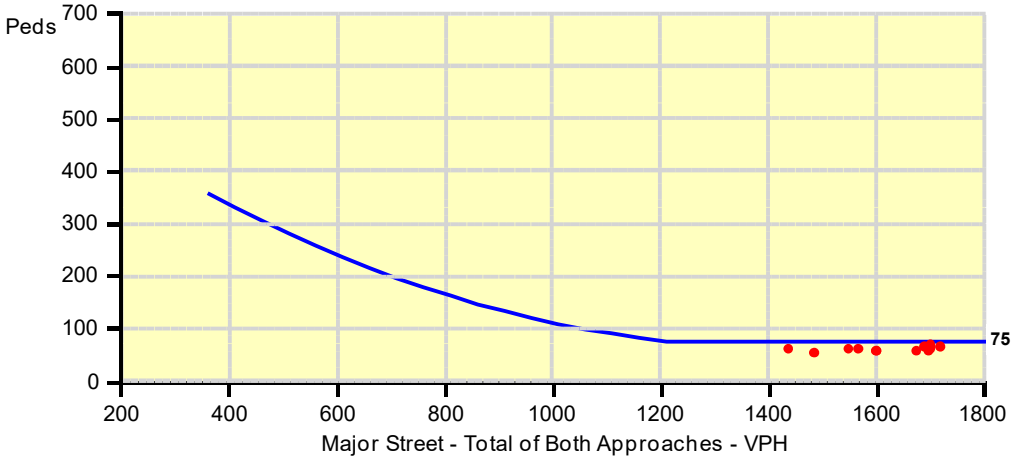
### Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road | | | | | Minor Road | | |
|---|---|---|---|---|---|---|---|---|
| | US-75 | | | | | Atwoods | | |
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 789 | + | 930 | = | 1719 | 65 | 0 | No |
| 16:30 - 17:30 | 791 | + | 908 | = | 1699 | 65 | 0 | No |
| 16:45 - 17:45 | 831 | + | 867 | = | 1698 | 70 | 0 | No |
| 16:00 - 17:00 | 775 | + | 923 | = | 1698 | 62 | 0 | No |
| 15:30 - 16:30 | 782 | + | 913 | = | 1695 | 57 | 0 | No |
| 17:00 - 18:00 | 854 | + | 836 | = | 1690 | 64 | 0 | No |
| 15:45 - 16:45 | 762 | + | 911 | = | 1673 | 56 | 0 | No |
| 17:15 - 18:15 | 825 | + | 775 | = | 1600 | 57 | 0 | No |
| 15:15 - 16:15 | 751 | + | 848 | = | 1599 | 57 | 0 | No |
| 15:00 - 16:00 | 736 | + | 830 | = | 1566 | 62 | 0 | No |
| 14:45 - 15:45 | 709 | + | 837 | = | 1546 | 63 | 0 | No |
| | | | | | | | 0 | No |



# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2026 Future Background Conditions

**Study Name: T-3110 Driveway #3 (2026 Background)**

**Study Date : 1/23/2024**

# Signal Warrants - Summary

## Major Street Approaches

**Northbound: US-75**
Number of Lanes : 2+

Total Approach Volume: 10,766

**Southbound: US-75**
Number of Lanes :2+

Total Approach Volume: 11,536

## Minor Street Approaches

**Eastbound: Atwoods**
Number of Lanes :1

Total Approach Volume: 753

**Westbound: Driveway #3**
Number of Lanes :1

Total Approach Volume: 0

## Warrant Summary (Rural Values Apply)

**Warrant 1 - Eight Hour Vehicular Volumes**..... **Satisfied**

**Warrant 1A - Minimum Vehicular Volume**..... **Not Satisfied**
Required volumes reached for 0 hours, 8 are needed

**Warrant 1B - Interruption of Continuous Traffic**..... **Satisfied**
Required volumes reached for 9 hours, 8 are needed

**Warrant 1C - Combination of Warrants**..... **Not Satisfied**
Required 1A volumes reached for 0 hours, 8 are needed
Required 1B volumes reached for 11 hours, 8 are needed

**Warrant 2 - Four Hour Volumes**..... **Satisfied**
Number of hours (7) volumes exceed minimum >= minimum required (4).

**Warrant 3 - Peak Hour**..... **Satisfied**

**Warrant 3A - Peak Hour Delay**..... **Not Satisfied**
Approach volumes on minor street don't exceed minimums for any one hour period. Delay data not evaluated.

**Warrant 3B - Peak Hour Volumes**..... **Satisfied**
Volumes exceed minimums for at least one hour period.

**Warrant 4 - Pedestrian Volumes**..... **Not Evaluated**

**Warrant 5 - School Crossing**..... **Not Evaluated**

**Warrant 6 - Coordinated Signal System**..... **Not Evaluated**

**Warrant 7 - Crash Experience**..... **Not Evaluated**

**Warrant 8 - Roadway Network**..... **Not Evaluated**

**Warrant 9 - Intersection Near a Grade Crossing**..... **Not Evaluated**

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2026 Future Background Conditions

**Study Name: T-3110 Driveway #3 (2026 Background)**

**Study Date : 1/23/2024**

## Warrant 1A - Minimum Volumes

### Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

### Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **420**

Veh/Hr Minor = **105**

| | Major Road US-75 | | | | | Minor Road Atwoods | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 888 | + | 1045 | = | 1933 | 76 | 0 | No |
| 16:30 - 17:30 | 890 | + | 1021 | = | 1911 | 77 | 0 | No |
| 16:00 - 17:00 | 873 | + | 1037 | = | 1910 | 73 | 0 | No |
| 16:45 - 17:45 | 934 | + | 975 | = | 1909 | 83 | 0 | No |
| 15:30 - 16:30 | 880 | + | 1026 | = | 1906 | 68 | 0 | No |
| 17:00 - 18:00 | 959 | + | 940 | = | 1899 | 77 | 0 | No |
| 15:45 - 16:45 | 857 | + | 1023 | = | 1880 | 67 | 0 | No |
| 17:15 - 18:15 | 926 | + | 872 | = | 1798 | 70 | 0 | No |
| 15:15 - 16:15 | 845 | + | 953 | = | 1798 | 68 | 0 | No |
| 15:00 - 16:00 | 828 | + | 933 | = | 1761 | 74 | 0 | No |
| 14:45 - 15:45 | 798 | + | 942 | = | 1740 | 75 | 0 | No |
| 17:30 - 18:30 | 885 | + | 784 | = | 1669 | 68 | 0 | No |
| 14:30 - 15:30 | 745 | + | 870 | = | 1615 | 72 | 0 | No |
| 14:15 - 15:15 | 710 | + | 857 | = | 1567 | 73 | 0 | No |
| 14:00 - 15:00 | 653 | + | 836 | = | 1489 | 75 | 0 | No |
| 17:45 - 18:45 | 782 | + | 703 | = | 1485 | 55 | 0 | No |
| 13:15 - 14:15 | 634 | + | 846 | = | 1480 | 71 | 0 | No |
| 13:45 - 14:45 | 642 | + | 830 | = | 1472 | 74 | 0 | No |
| 13:30 - 14:30 | 629 | + | 831 | = | 1460 | 75 | 0 | No |
| 13:00 - 14:00 | 618 | + | 810 | = | 1428 | 71 | 0 | No |
| 07:30 - 08:30 | 732 | + | 656 | = | 1388 | 6 | 0 | No |
| 07:15 - 08:15 | 724 | + | 664 | = | 1388 | 4 | 0 | No |
| 12:45 - 13:45 | 626 | + | 760 | = | 1386 | 72 | 0 | No |
| 11:45 - 12:45 | 675 | + | 684 | = | 1359 | 57 | 0 | No |
| 11:30 - 12:30 | 667 | | 691 | | 1358 | 57 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2026 Future Background Conditions

**Study Name: T-3110 Driveway #3 (2026 Background)**

**Study Date : 1/23/2024**

## Warrant 1B - Interruption of Continuous Traffic

### Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

### Summary

9 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **630**

Veh/Hr Minor = **53**

| | Major Road US-75 | | | | | Minor Road Atwoods | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:45 - 17:45 | 934 | + | 975 | = | 1909 | 83 | 0 | Yes |
| 15:45 - 16:45 | 857 | + | 1023 | = | 1880 | 67 | 0 | Yes |
| 14:45 - 15:45 | 798 | + | 942 | = | 1740 | 75 | 0 | Yes |
| 17:45 - 18:45 | 782 | + | 703 | = | 1485 | 55 | 0 | Yes |
| 13:45 - 14:45 | 642 | + | 830 | = | 1472 | 74 | 0 | Yes |
| 12:45 - 13:45 | 626 | + | 760 | = | 1386 | 72 | 0 | Yes |
| 11:45 - 12:45 | 675 | + | 684 | = | 1359 | 57 | 0 | Yes |
| 09:45 - 10:45 | 576 | + | 686 | = | 1262 | 53 | 0 | Yes |
| 10:45 - 11:45 | 595 | + | 656 | = | 1251 | 58 | 0 | Yes |
| 07:30 - 08:30 | 732 | + | 656 | = | 1388 | 6 | 0 | No |
| 07:15 - 08:15 | 724 | + | 664 | = | 1388 | 4 | 0 | No |
| 07:45 - 08:45 | 676 | + | 671 | = | 1347 | 10 | 0 | No |
| 08:00 - 09:00 | 678 | + | 664 | = | 1342 | 14 | 0 | No |
| 07:00 - 08:00 | 658 | + | 664 | = | 1322 | 4 | 0 | No |
| 08:15 - 09:15 | 629 | + | 681 | = | 1310 | 20 | 0 | No |
| 08:30 - 09:30 | 620 | + | 653 | = | 1273 | 29 | 0 | No |
| 09:30 - 10:30 | 568 | + | 700 | = | 1268 | 51 | 0 | No |
| 08:45 - 09:45 | 592 | + | 675 | = | 1267 | 36 | 0 | No |
| 06:45 - 07:45 | 616 | + | 638 | = | 1254 | 2 | 0 | No |
| 09:15 - 10:15 | 568 | + | 660 | = | 1228 | 45 | 0 | No |
| 09:00 - 10:00 | 541 | + | 664 | = | 1205 | 43 | 0 | No |
| 06:30 - 07:30 | 521 | + | 620 | = | 1141 | 2 | 0 | No |
| 06:15 - 07:15 | 432 | + | 556 | = | 988 | 2 | 0 | No |
| 19:00 - 20:00 | 526 | + | 401 | = | 927 | 45 | 0 | No |
| 18:45 - 19:45 | 512 | | 414 | | 926 | 50 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2026 Future Background Conditions

**Study Name: T-3110 Driveway #3 (2026 Background)**

**Study Date : 1/23/2024**

## Warrant 1C Combination of Warrants

### Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

### Summary

Only 0 hours meet 1A minimums.
11 hours meet 1B minimums.
Warrant is NOT met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

### Volume Requirements

Rural Factor of 70% applied

| Warrant | 1A | 1B |
|---|---|---|
| Veh/Hr Major = | **336** | **504** |
| Veh/Hr Minor = | **84** | **42** |

| Major Road | Minor Road |
|---|---|
| US-75 | Atwoods |

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1A? |
|---|---|---|---|---|---|---|---|---|
| 16:15 - 17:15 | 888 | + | 1045 | = | 1933 | 76 | 0 | No |
| 16:30 - 17:30 | 890 | + | 1021 | = | 1911 | 77 | 0 | No |
| 16:00 - 17:00 | 873 | + | 1037 | = | 1910 | 73 | 0 | No |
| 16:45 - 17:45 | 934 | + | 975 | = | 1909 | 83 | 0 | No |
| 15:30 - 16:30 | 880 | + | 1026 | = | 1906 | 68 | 0 | No |
| 17:00 - 18:00 | 959 | + | 940 | = | 1899 | 77 | 0 | No |
| 15:45 - 16:45 | 857 | + | 1023 | = | 1880 | 67 | 0 | No |
| 17:15 - 18:15 | 926 | + | 872 | = | 1798 | 70 | 0 | No |
| 15:15 - 16:15 | 845 | + | 953 | = | 1798 | 68 | 0 | No |
| 15:00 - 16:00 | 828 | + | 933 | = | 1761 | 74 | 0 | No |
| 14:45 - 15:45 | 798 | + | 942 | = | 1740 | 75 | 0 | No |
| 17:30 - 18:30 | 885 | + | 784 | = | 1669 | 68 | 0 | No |

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1B? |
|---|---|---|---|---|---|---|---|---|
| 16:00 - 17:00 | 873 | + | 1037 | = | 1910 | 73 | 0 | Yes |
| 17:00 - 18:00 | 959 | + | 940 | = | 1899 | 77 | 0 | Yes |
| 15:00 - 16:00 | 828 | + | 933 | = | 1761 | 74 | 0 | Yes |
| 14:00 - 15:00 | 653 | + | 836 | = | 1489 | 75 | 0 | Yes |
| 13:00 - 14:00 | 618 | + | 810 | = | 1428 | 71 | 0 | Yes |
| 12:00 - 13:00 | 653 | + | 686 | = | 1339 | 59 | 0 | Yes |
| 10:00 - 11:00 | 606 | + | 707 | = | 1313 | 52 | 0 | Yes |
| 11:00 - 12:00 | 617 | + | 655 | = | 1272 | 61 | 0 | Yes |
| 18:00 - 19:00 | 664 | + | 595 | = | 1259 | 51 | 0 | Yes |
| 09:00 - 10:00 | 541 | + | 664 | = | 1205 | 43 | 0 | Yes |
| 19:00 - 20:00 | 526 | + | 401 | = | 927 | 45 | 0 | Yes |
| 07:30 - 08:30 | 732 | + | 656 | = | 1388 | 6 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2026 Future Background Conditions

**Study Name: T-3110 Driveway #3 (2026 Background)**

**Study Date : 1/23/2024**

## Warrant 2 - Four Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

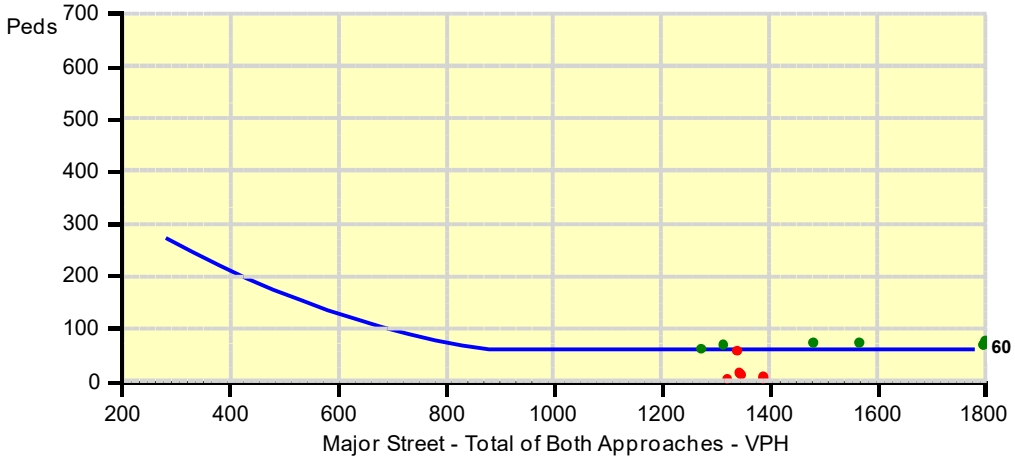
### Summary

7 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Atwoods | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 888 | + | 1045 | = | 1933 | 76 | 0 | Yes |
| 17:15 - 18:15 | 926 | + | 872 | = | 1798 | 70 | 0 | Yes |
| 15:15 - 16:15 | 845 | + | 953 | = | 1798 | 68 | 0 | Yes |
| 14:15 - 15:15 | 710 | + | 857 | = | 1567 | 73 | 0 | Yes |
| 13:15 - 14:15 | 634 | + | 846 | = | 1480 | 71 | 0 | Yes |
| 12:15 - 13:15 | 625 | + | 689 | = | 1314 | 70 | 0 | Yes |
| 11:00 - 12:00 | 617 | + | 655 | = | 1272 | 61 | 0 | Yes |
| 07:30 - 08:30 | 732 | + | 656 | = | 1388 | 6 | 0 | No |
| 07:15 - 08:15 | 724 | + | 664 | = | 1388 | 4 | 0 | No |
| 07:45 - 08:45 | 676 | + | 671 | = | 1347 | 10 | 0 | No |
| 08:00 - 09:00 | 678 | + | 664 | = | 1342 | 14 | 0 | No |
| | | | | | | | 0 | No |



# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2026 Future Background Conditions

**Study Name: T-3110 Driveway #3 (2026 Background)**

**Study Date : 1/23/2024**

## Warrant 3A - Peak Hour Delay

### Description

Intended for sites where for one hour of the day minor street traffic suffers undue traffic delay entering or crossing the major street.

### Summary

56 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Number of Minor Lanes = **1**

### Volume and Delay Requirements

Veh/Hr All Approaches = **800**
Veh/Hr Minor = **100**
Total Delay (Veh-Hrs) = **4**

| Major Road | Minor Road |
|---|---|
| US-75 | Atwoods |

| Time | Total of All Approaches | Met? | Minor EB | Delay EB | Met? | Minor WB | Delay WB | Met? | Warrant Met? |
|---|---|---|---|---|---|---|---|---|---|
| 16:15 - 17:15 | 2009 | Yes | 76 | - | No | 0 | - | --- | No |
| 16:45 - 17:45 | 1992 | Yes | 83 | - | No | 0 | - | --- | No |
| 16:30 - 17:30 | 1988 | Yes | 77 | - | No | 0 | - | --- | No |
| 16:00 - 17:00 | 1983 | Yes | 73 | - | No | 0 | - | --- | No |
| 17:00 - 18:00 | 1976 | Yes | 77 | - | No | 0 | - | --- | No |
| 15:30 - 16:30 | 1974 | Yes | 68 | - | No | 0 | - | --- | No |
| 15:45 - 16:45 | 1947 | Yes | 67 | - | No | 0 | - | --- | No |
| 17:15 - 18:15 | 1868 | Yes | 70 | - | No | 0 | - | --- | No |
| 15:15 - 16:15 | 1866 | Yes | 68 | - | No | 0 | - | --- | No |
| 15:00 - 16:00 | 1835 | Yes | 74 | - | No | 0 | - | --- | No |
| 14:45 - 15:45 | 1815 | Yes | 75 | - | No | 0 | - | --- | No |
| 17:30 - 18:30 | 1737 | Yes | 68 | - | No | 0 | - | --- | No |
| 14:30 - 15:30 | 1687 | Yes | 72 | - | No | 0 | - | --- | No |
| 14:15 - 15:15 | 1640 | Yes | 73 | - | No | 0 | - | --- | No |
| 14:00 - 15:00 | 1564 | Yes | 75 | - | No | 0 | - | --- | No |
| 13:15 - 14:15 | 1551 | Yes | 71 | - | No | 0 | - | --- | No |
| 13:45 - 14:45 | 1546 | Yes | 74 | - | No | 0 | - | --- | No |
| 17:45 - 18:45 | 1540 | Yes | 55 | - | No | 0 | - | --- | No |
| 13:30 - 14:30 | 1535 | Yes | 75 | - | No | 0 | - | --- | No |
| 13:00 - 14:00 | 1499 | Yes | 71 | - | No | 0 | - | --- | No |
| 12:45 - 13:45 | 1458 | Yes | 72 | - | No | 0 | - | --- | No |
| 11:45 - 12:45 | 1416 | Yes | 57 | - | No | 0 | - | --- | No |
| 11:30 - 12:30 | 1415 | Yes | 57 | - | No | 0 | - | --- | No |
| 12:30 - 13:30 | 1404 | Yes | 70 | - | No | 0 | - | --- | No |
| 12:00 - 13:00 | 1398 | Yes | 59 | - | No | 0 | - | --- | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2026 Future Background Conditions

**Study Name: T-3110 Driveway #3 (2026 Background)**

**Study Date : 1/23/2024**

## Warrant 3B - Peak Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

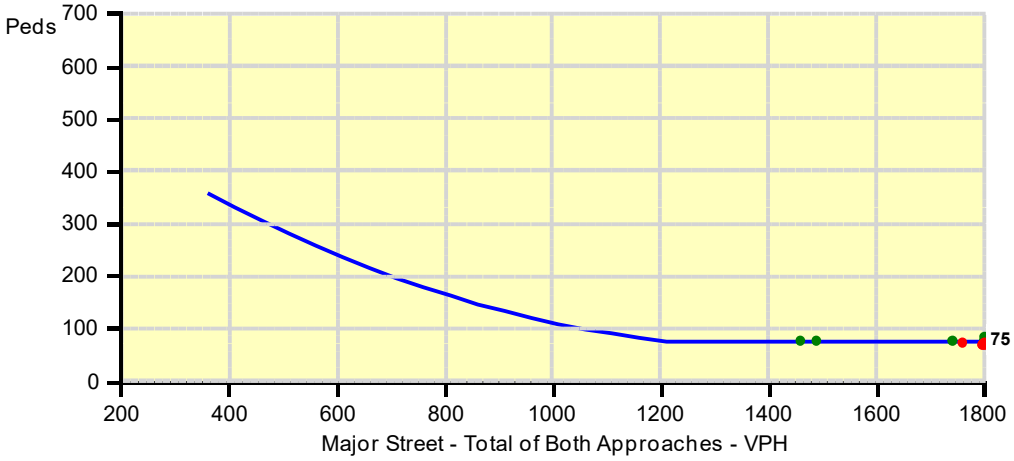
### Summary

7 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Atwoods | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 888 | + | 1045 | = | 1933 | 76 | 0 | Yes |
| 16:30 - 17:30 | 890 | + | 1021 | = | 1911 | 77 | 0 | Yes |
| 16:45 - 17:45 | 934 | + | 975 | = | 1909 | 83 | 0 | Yes |
| 17:00 - 18:00 | 959 | + | 940 | = | 1899 | 77 | 0 | Yes |
| 14:45 - 15:45 | 798 | + | 942 | = | 1740 | 75 | 0 | Yes |
| 14:00 - 15:00 | 653 | + | 836 | = | 1489 | 75 | 0 | Yes |
| 13:30 - 14:30 | 629 | + | 831 | = | 1460 | 75 | 0 | Yes |
| 16:00 - 17:00 | 873 | + | 1037 | = | 1910 | 73 | 0 | No |
| 15:30 - 16:30 | 880 | + | 1026 | = | 1906 | 68 | 0 | No |
| 15:45 - 16:45 | 857 | + | 1023 | = | 1880 | 67 | 0 | No |
| 17:15 - 18:15 | 926 | + | 872 | = | 1798 | 70 | 0 | No |
| | | | | | | | 0 | No |



# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Driveway #3 (2026 Total)**

**Study Date : 1/23/2024**

# Signal Warrants - Summary

## Major Street Approaches

**Northbound: US-75**
Number of Lanes : 2+

Total Approach Volume: 12,511

**Southbound: US-75**
Number of Lanes :2+

Total Approach Volume: 13,246

## Minor Street Approaches

**Eastbound: Atwoods**
Number of Lanes :1

Total Approach Volume: 753

**Westbound: Driveway #3**
Number of Lanes :1

Total Approach Volume: 152

## Warrant Summary (Rural Values Apply)

**Warrant 1 - Eight Hour Vehicular Volumes**..... **Satisfied**

**Warrant 1A - Minimum Vehicular Volume**..... **Not Satisfied**
Required volumes reached for 0 hours, 8 are needed

**Warrant 1B - Interruption of Continuous Traffic**..... **Satisfied**
Required volumes reached for 9 hours, 8 are needed

**Warrant 1C - Combination of Warrants**..... **Not Satisfied**
Required 1A volumes reached for 0 hours, 8 are needed
Required 1B volumes reached for 11 hours, 8 are needed

**Warrant 2 - Four Hour Volumes**..... **Satisfied**
Number of hours (7) volumes exceed minimum >= minimum required (4).

**Warrant 3 - Peak Hour**..... **Satisfied**

**Warrant 3A - Peak Hour Delay**..... **Not Satisfied**
Approach volumes on minor street don't exceed minimums for any one hour period. Delay data not evaluated.

**Warrant 3B - Peak Hour Volumes**..... **Satisfied**
Volumes exceed minimums for at least one hour period.

**Warrant 4 - Pedestrian Volumes**..... **Not Evaluated**

**Warrant 5 - School Crossing**..... **Not Evaluated**

**Warrant 6 - Coordinated Signal System**..... **Not Evaluated**

**Warrant 7 - Crash Experience**..... **Not Evaluated**

**Warrant 8 - Roadway Network**..... **Not Evaluated**

**Warrant 9 - Intersection Near a Grade Crossing**..... **Not Evaluated**

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Driveway #3 (2026 Total)**

**Study Date : 1/23/2024**

## Warrant 1A - Minimum Volumes

### Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

### Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **420**

Veh/Hr Minor = **105**

| | Major Road US-75 | | | | | Minor Road Atwoods | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 1020 | + | 1171 | = | 2191 | 76 | 12 | No |
| 16:00 - 17:00 | 1005 | + | 1165 | = | 2170 | 73 | 12 | No |
| 16:30 - 17:30 | 1022 | + | 1145 | = | 2167 | 77 | 12 | No |
| 16:45 - 17:45 | 1067 | + | 1097 | = | 2164 | 83 | 12 | No |
| 17:00 - 18:00 | 1093 | + | 1060 | = | 2153 | 77 | 12 | No |
| 15:30 - 16:30 | 998 | + | 1148 | = | 2146 | 68 | 12 | No |
| 15:45 - 16:45 | 982 | + | 1148 | = | 2130 | 67 | 12 | No |
| 17:15 - 18:15 | 1056 | + | 989 | = | 2045 | 70 | 11 | No |
| 15:15 - 16:15 | 956 | + | 1072 | = | 2028 | 68 | 12 | No |
| 15:00 - 16:00 | 932 | + | 1049 | = | 1981 | 74 | 12 | No |
| 14:45 - 15:45 | 906 | + | 1058 | = | 1964 | 75 | 12 | No |
| 17:30 - 18:30 | 1010 | + | 898 | = | 1908 | 68 | 10 | No |
| 14:30 - 15:30 | 857 | + | 986 | = | 1843 | 72 | 12 | No |
| 14:15 - 15:15 | 825 | + | 973 | = | 1798 | 73 | 12 | No |
| 14:00 - 15:00 | 771 | + | 952 | = | 1723 | 75 | 12 | No |
| 17:45 - 18:45 | 901 | + | 813 | = | 1714 | 55 | 9 | No |
| 13:15 - 14:15 | 759 | + | 947 | = | 1706 | 71 | 9 | No |
| 13:45 - 14:45 | 762 | + | 941 | = | 1703 | 74 | 11 | No |
| 13:30 - 14:30 | 751 | + | 937 | = | 1688 | 75 | 10 | No |
| 13:00 - 14:00 | 746 | + | 906 | = | 1652 | 71 | 8 | No |
| 12:45 - 13:45 | 748 | + | 855 | = | 1603 | 72 | 8 | No |
| 11:45 - 12:45 | 778 | + | 772 | = | 1550 | 57 | 8 | No |
| 11:30 - 12:30 | 771 | + | 775 | = | 1546 | 57 | 8 | No |
| 12:30 - 13:30 | 742 | + | 801 | = | 1543 | 70 | 8 | No |
| 12:00 - 13:00 | 756 | | 778 | | 1534 | 59 | 8 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Driveway #3 (2026 Total)**

**Study Date : 1/23/2024**

## Warrant 1B - Interruption of Continuous Traffic

### Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

### Summary

9 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **630**

Veh/Hr Minor = **53**

| | Major Road US-75 | | | | | Minor Road Atwoods | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:45 - 17:45 | 1067 | + | 1097 | = | 2164 | 83 | 12 | Yes |
| 15:45 - 16:45 | 982 | + | 1148 | = | 2130 | 67 | 12 | Yes |
| 14:45 - 15:45 | 906 | + | 1058 | = | 1964 | 75 | 12 | Yes |
| 17:45 - 18:45 | 901 | + | 813 | = | 1714 | 55 | 9 | Yes |
| 13:45 - 14:45 | 762 | + | 941 | = | 1703 | 74 | 11 | Yes |
| 12:45 - 13:45 | 748 | + | 855 | = | 1603 | 72 | 8 | Yes |
| 11:45 - 12:45 | 778 | + | 772 | = | 1550 | 57 | 8 | Yes |
| 10:45 - 11:45 | 694 | + | 730 | = | 1424 | 58 | 8 | Yes |
| 09:45 - 10:45 | 651 | + | 746 | = | 1397 | 53 | 7 | Yes |
| 07:30 - 08:30 | 798 | + | 715 | = | 1513 | 6 | 6 | No |
| 07:15 - 08:15 | 788 | + | 718 | = | 1506 | 4 | 5 | No |
| 08:00 - 09:00 | 746 | + | 733 | = | 1479 | 14 | 8 | No |
| 07:45 - 08:45 | 743 | + | 735 | = | 1478 | 10 | 7 | No |
| 08:15 - 09:15 | 694 | + | 744 | = | 1438 | 20 | 7 | No |
| 07:00 - 08:00 | 720 | + | 712 | = | 1432 | 4 | 4 | No |
| 08:30 - 09:30 | 682 | + | 710 | = | 1392 | 29 | 6 | No |
| 09:30 - 10:30 | 636 | + | 754 | = | 1390 | 51 | 6 | No |
| 08:45 - 09:45 | 651 | + | 726 | = | 1377 | 36 | 5 | No |
| 06:45 - 07:45 | 670 | + | 682 | = | 1352 | 2 | 3 | No |
| 09:15 - 10:15 | 630 | + | 709 | = | 1339 | 45 | 5 | No |
| 09:00 - 10:00 | 597 | + | 709 | = | 1306 | 43 | 4 | No |
| 06:30 - 07:30 | 567 | + | 659 | = | 1226 | 2 | 2 | No |
| 18:45 - 19:45 | 615 | + | 515 | = | 1130 | 50 | 8 | No |
| 19:00 - 20:00 | 626 | + | 500 | = | 1126 | 45 | 8 | No |
| 06:15 - 07:15 | 470 | | 590 | | 1060 | 2 | 1 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Driveway #3 (2026 Total)**

**Study Date : 1/23/2024**

## Warrant 1C Combination of Warrants

### Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

### Summary

Only 0 hours meet 1A minimums.
11 hours meet 1B minimums.
Warrant is NOT met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

### Volume Requirements

Rural Factor of 70% applied

| Warrant | 1A | 1B |
|---|---|---|
| Veh/Hr Major = | **336** | **504** |
| Veh/Hr Minor = | **84** | **42** |

**Major Road: US-75** | **Minor Road: Atwoods**

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1A? |
|---|---|---|---|---|---|---|---|---|
| 16:15 - 17:15 | 1020 | + | 1171 | = | 2191 | 76 | 12 | No |
| 16:00 - 17:00 | 1005 | + | 1165 | = | 2170 | 73 | 12 | No |
| 16:30 - 17:30 | 1022 | + | 1145 | = | 2167 | 77 | 12 | No |
| 16:45 - 17:45 | 1067 | + | 1097 | = | 2164 | 83 | 12 | No |
| 17:00 - 18:00 | 1093 | + | 1060 | = | 2153 | 77 | 12 | No |
| 15:30 - 16:30 | 998 | + | 1148 | = | 2146 | 68 | 12 | No |
| 15:45 - 16:45 | 982 | + | 1148 | = | 2130 | 67 | 12 | No |
| 17:15 - 18:15 | 1056 | + | 989 | = | 2045 | 70 | 11 | No |
| 15:15 - 16:15 | 956 | + | 1072 | = | 2028 | 68 | 12 | No |
| 15:00 - 16:00 | 932 | + | 1049 | = | 1981 | 74 | 12 | No |
| 14:45 - 15:45 | 906 | + | 1058 | = | 1964 | 75 | 12 | No |
| 17:30 - 18:30 | 1010 | + | 898 | = | 1908 | 68 | 10 | No |

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1B? |
|---|---|---|---|---|---|---|---|---|
| 16:00 - 17:00 | 1005 | + | 1165 | = | 2170 | 73 | 12 | Yes |
| 17:00 - 18:00 | 1093 | + | 1060 | = | 2153 | 77 | 12 | Yes |
| 15:00 - 16:00 | 932 | + | 1049 | = | 1981 | 74 | 12 | Yes |
| 14:00 - 15:00 | 771 | + | 952 | = | 1723 | 75 | 12 | Yes |
| 13:00 - 14:00 | 746 | + | 906 | = | 1652 | 71 | 8 | Yes |
| 12:00 - 13:00 | 756 | + | 778 | = | 1534 | 59 | 8 | Yes |
| 18:00 - 19:00 | 777 | + | 701 | = | 1478 | 51 | 8 | Yes |
| 10:00 - 11:00 | 688 | + | 773 | = | 1461 | 52 | 8 | Yes |
| 11:00 - 12:00 | 721 | + | 731 | = | 1452 | 61 | 8 | Yes |
| 09:00 - 10:00 | 597 | + | 709 | = | 1306 | 43 | 4 | Yes |
| 19:00 - 20:00 | 626 | + | 500 | = | 1126 | 45 | 8 | Yes |
| 07:30 - 08:30 | 798 | + | 715 | = | 1513 | 6 | 6 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Driveway #3 (2026 Total)**

**Study Date : 1/23/2024**

## Warrant 2 - Four Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

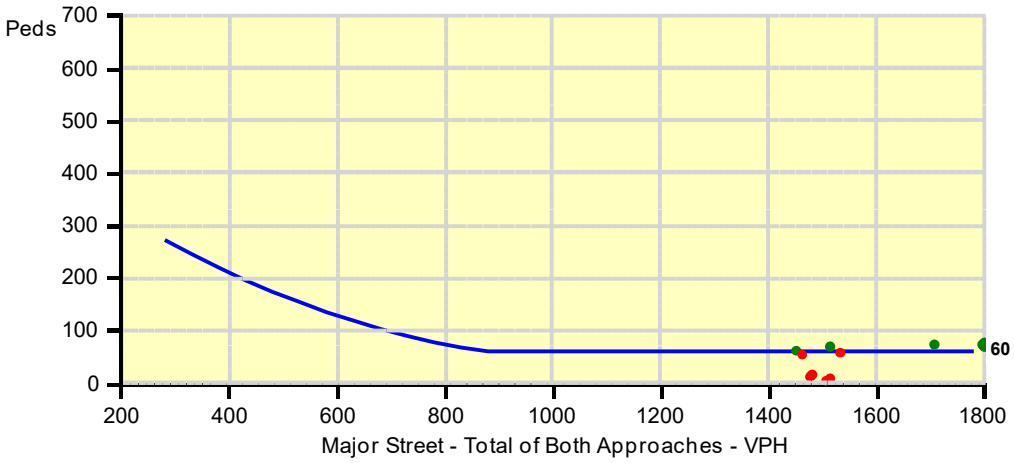
### Summary

7 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Atwoods | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 1020 | + | 1171 | = | 2191 | 76 | 12 | Yes |
| 17:15 - 18:15 | 1056 | + | 989 | = | 2045 | 70 | 11 | Yes |
| 15:15 - 16:15 | 956 | + | 1072 | = | 2028 | 68 | 12 | Yes |
| 14:15 - 15:15 | 825 | + | 973 | = | 1798 | 73 | 12 | Yes |
| 13:15 - 14:15 | 759 | + | 947 | = | 1706 | 71 | 9 | Yes |
| 12:15 - 13:15 | 734 | + | 782 | = | 1516 | 70 | 8 | Yes |
| 11:00 - 12:00 | 721 | + | 731 | = | 1452 | 61 | 8 | Yes |
| 12:00 - 13:00 | 756 | + | 778 | = | 1534 | 59 | 8 | No |
| 07:30 - 08:30 | 798 | + | 715 | = | 1513 | 6 | 6 | No |
| 07:15 - 08:15 | 788 | + | 718 | = | 1506 | 4 | 5 | No |
| 08:00 - 09:00 | 746 | + | 733 | = | 1479 | 14 | 8 | No |
| | | | | | | | 7 | No |



# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Driveway #3 (2026 Total)**

**Study Date : 1/23/2024**

## Warrant 3A - Peak Hour Delay

### Description

Intended for sites where for one hour of the day minor street traffic suffers undue traffic delay entering or crossing the major street.

### Summary

60 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Number of Minor Lanes = **1**

### Volume and Delay Requirements

Veh/Hr All Approaches = **800**
Veh/Hr Minor = **100**
Total Delay (Veh-Hrs) = **4**

| Major Road | Minor Road |
|---|---|
| US-75 | Atwoods |

| Time | Total of All Approaches | Met? | Minor EB | Delay EB | Met? | Minor WB | Delay WB | Met? | Warrant Met? |
|---|---|---|---|---|---|---|---|---|---|
| 16:15 - 17:15 | 2279 | Yes | 76 | - | No | 12 | - | --- | No |
| 16:45 - 17:45 | 2259 | Yes | 83 | - | No | 12 | - | --- | No |
| 16:30 - 17:30 | 2256 | Yes | 77 | - | No | 12 | - | --- | No |
| 16:00 - 17:00 | 2255 | Yes | 73 | - | No | 12 | - | --- | No |
| 17:00 - 18:00 | 2242 | Yes | 77 | - | No | 12 | - | --- | No |
| 15:30 - 16:30 | 2226 | Yes | 68 | - | No | 12 | - | --- | No |
| 15:45 - 16:45 | 2209 | Yes | 67 | - | No | 12 | - | --- | No |
| 17:15 - 18:15 | 2126 | Yes | 70 | - | No | 11 | - | --- | No |
| 15:15 - 16:15 | 2108 | Yes | 68 | - | No | 12 | - | --- | No |
| 15:00 - 16:00 | 2067 | Yes | 74 | - | No | 12 | - | --- | No |
| 14:45 - 15:45 | 2051 | Yes | 75 | - | No | 12 | - | --- | No |
| 17:30 - 18:30 | 1986 | Yes | 68 | - | No | 10 | - | --- | No |
| 14:30 - 15:30 | 1927 | Yes | 72 | - | No | 12 | - | --- | No |
| 14:15 - 15:15 | 1883 | Yes | 73 | - | No | 12 | - | --- | No |
| 14:00 - 15:00 | 1810 | Yes | 75 | - | No | 12 | - | --- | No |
| 13:45 - 14:45 | 1788 | Yes | 74 | - | No | 11 | - | --- | No |
| 13:15 - 14:15 | 1786 | Yes | 71 | - | No | 9 | - | --- | No |
| 17:45 - 18:45 | 1778 | Yes | 55 | - | No | 9 | - | --- | No |
| 13:30 - 14:30 | 1773 | Yes | 75 | - | No | 10 | - | --- | No |
| 13:00 - 14:00 | 1731 | Yes | 71 | - | No | 8 | - | --- | No |
| 12:45 - 13:45 | 1683 | Yes | 72 | - | No | 8 | - | --- | No |
| 12:30 - 13:30 | 1621 | Yes | 70 | - | No | 8 | - | --- | No |
| 11:45 - 12:45 | 1615 | Yes | 57 | - | No | 8 | - | --- | No |
| 11:30 - 12:30 | 1611 | Yes | 57 | - | No | 8 | - | --- | No |
| 12:00 - 13:00 | 1601 | Yes | 59 | - | No | 8 | - | --- | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Driveway #3 (2026 Total)**

**Study Date : 1/23/2024**

## Warrant 3B - Peak Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

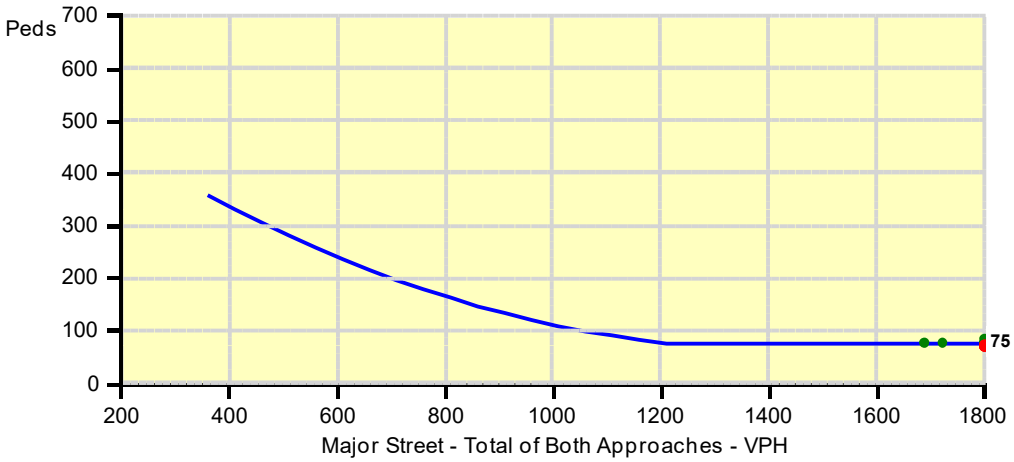
### Summary

7 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Atwoods | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 1020 | + | 1171 | = | 2191 | 76 | 12 | Yes |
| 16:30 - 17:30 | 1022 | + | 1145 | = | 2167 | 77 | 12 | Yes |
| 16:45 - 17:45 | 1067 | + | 1097 | = | 2164 | 83 | 12 | Yes |
| 17:00 - 18:00 | 1093 | + | 1060 | = | 2153 | 77 | 12 | Yes |
| 14:45 - 15:45 | 906 | + | 1058 | = | 1964 | 75 | 12 | Yes |
| 14:00 - 15:00 | 771 | + | 952 | = | 1723 | 75 | 12 | Yes |
| 13:30 - 14:30 | 751 | + | 937 | = | 1688 | 75 | 10 | Yes |
| 16:00 - 17:00 | 1005 | + | 1165 | = | 2170 | 73 | 12 | No |
| 15:30 - 16:30 | 998 | + | 1148 | = | 2146 | 68 | 12 | No |
| 15:45 - 16:45 | 982 | + | 1148 | = | 2130 | 67 | 12 | No |
| 17:15 - 18:15 | 1056 | + | 989 | = | 2045 | 70 | 11 | No |
| | | | | | | | 12 | No |



# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2046 Future Background Conditions

**Study Name: T-3110 Driveway #3 (2046 Background)**

**Study Date : 1/23/2024**

# Signal Warrants - Summary

## Major Street Approaches

**Northbound: US-75**
Number of Lanes : 2+

Total Approach Volume: 18,406

**Southbound: US-75**
Number of Lanes :2+

Total Approach Volume: 19,708

## Minor Street Approaches

**Eastbound: Atwoods**
Number of Lanes :1

Total Approach Volume: 1,213

**Westbound: Driveway #3**
Number of Lanes :1

Total Approach Volume: 0

## Warrant Summary (Rural Values Apply)

**Warrant 1 - Eight Hour Vehicular Volumes**..... **Satisfied**

**Warrant 1A - Minimum Vehicular Volume**..... **Not Satisfied**
Required volumes reached for 7 hours, 8 are needed

**Warrant 1B - Interruption of Continuous Traffic**..... **Satisfied**
Required volumes reached for 11 hours, 8 are needed

**Warrant 1C - Combination of Warrants**..... **Satisfied**
Required 1A volumes reached for 9 hours, 8 are needed
Required 1B volumes reached for 12 hours, 8 are needed

**Warrant 2 - Four Hour Volumes**..... **Satisfied**
Number of hours (11) volumes exceed minimum >= minimum required (4).

**Warrant 3 - Peak Hour**..... **Satisfied**

**Warrant 3A - Peak Hour Delay**..... **Satisfied**
Number of one hour periods (24) volumes exceed minimum >= required (1). Delay data not evaluated.

**Warrant 3B - Peak Hour Volumes**..... **Satisfied**
Volumes exceed minimums for at least one hour period.

**Warrant 4 - Pedestrian Volumes**..... **Not Evaluated**

**Warrant 5 - School Crossing**..... **Not Evaluated**

**Warrant 6 - Coordinated Signal System**..... **Not Evaluated**

**Warrant 7 - Crash Experience**..... **Not Evaluated**

**Warrant 8 - Roadway Network**..... **Not Evaluated**

**Warrant 9 - Intersection Near a Grade Crossing**..... **Not Evaluated**

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2046 Future Background Conditions

**Study Name: T-3110 Driveway #3 (2046 Background)**

**Study Date : 1/23/2024**

## Warrant 1A - Minimum Volumes

### Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

### Summary

Only 7 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **420**

Veh/Hr Minor = **105**

| | Major Road US-75 | | | | | Minor Road Atwoods | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 1517 | + | 1789 | = | 3306 | 127 | 0 | Yes |
| 17:15 - 18:15 | 1586 | + | 1492 | = | 3078 | 113 | 0 | Yes |
| 15:15 - 16:15 | 1444 | + | 1631 | = | 3075 | 111 | 0 | Yes |
| 14:15 - 15:15 | 1213 | + | 1466 | = | 2679 | 118 | 0 | Yes |
| 13:15 - 14:15 | 1085 | + | 1446 | = | 2531 | 117 | 0 | Yes |
| 12:15 - 13:15 | 1068 | + | 1178 | = | 2246 | 119 | 0 | Yes |
| 11:15 - 12:15 | 1107 | + | 1109 | = | 2216 | 105 | 0 | Yes |
| 07:30 - 08:30 | 1253 | + | 1123 | = | 2376 | 6 | 0 | No |
| 07:15 - 08:15 | 1239 | + | 1136 | = | 2375 | 4 | 0 | No |
| 07:45 - 08:45 | 1157 | + | 1148 | = | 2305 | 12 | 0 | No |
| 08:00 - 09:00 | 1162 | + | 1135 | = | 2297 | 18 | 0 | No |
| 07:00 - 08:00 | 1125 | + | 1135 | = | 2260 | 4 | 0 | No |
| 10:00 - 11:00 | 1033 | + | 1211 | = | 2244 | 83 | 0 | No |
| 08:15 - 09:15 | 1077 | + | 1164 | = | 2241 | 30 | 0 | No |
| 10:15 - 11:15 | 997 | + | 1213 | = | 2210 | 85 | 0 | No |
| 08:30 - 09:30 | 1060 | + | 1116 | = | 2176 | 46 | 0 | No |
| 11:00 - 12:00 | 1057 | + | 1119 | = | 2176 | 99 | 0 | No |
| 09:30 - 10:30 | 971 | + | 1199 | = | 2170 | 81 | 0 | No |
| 08:45 - 09:45 | 1012 | + | 1155 | = | 2167 | 58 | 0 | No |
| 09:45 - 10:45 | 983 | + | 1175 | = | 2158 | 83 | 0 | No |
| 06:45 - 07:45 | 1056 | + | 1089 | = | 2145 | 2 | 0 | No |
| 10:45 - 11:45 | 1018 | + | 1123 | = | 2141 | 95 | 0 | No |
| 10:30 - 11:30 | 969 | + | 1159 | = | 2128 | 91 | 0 | No |
| 09:15 - 10:15 | 970 | + | 1130 | = | 2100 | 72 | 0 | No |
| 09:00 - 10:00 | 924 | | 1138 | | 2062 | 70 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2046 Future Background Conditions

**Study Name: T-3110 Driveway #3 (2046 Background)**

**Study Date : 1/23/2024**

## Warrant 1B - Interruption of Continuous Traffic

### Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

### Summary

11 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **630**

Veh/Hr Minor = **53**

| | Major Road US-75 | | | | | Minor Road Atwoods | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:45 - 17:45 | 1598 | + | 1668 | = | 3266 | 137 | 0 | Yes |
| 15:45 - 16:45 | 1465 | + | 1752 | = | 3217 | 110 | 0 | Yes |
| 14:45 - 15:45 | 1364 | + | 1611 | = | 2975 | 123 | 0 | Yes |
| 17:45 - 18:45 | 1338 | + | 1203 | = | 2541 | 88 | 0 | Yes |
| 13:45 - 14:45 | 1097 | + | 1420 | = | 2517 | 123 | 0 | Yes |
| 12:45 - 13:45 | 1070 | + | 1297 | = | 2367 | 119 | 0 | Yes |
| 11:45 - 12:45 | 1155 | + | 1169 | = | 2324 | 95 | 0 | Yes |
| 08:45 - 09:45 | 1012 | + | 1155 | = | 2167 | 58 | 0 | Yes |
| 09:45 - 10:45 | 983 | + | 1175 | = | 2158 | 83 | 0 | Yes |
| 10:45 - 11:45 | 1018 | + | 1123 | = | 2141 | 95 | 0 | Yes |
| 18:45 - 19:45 | 874 | + | 706 | = | 1580 | 82 | 0 | Yes |
| 07:30 - 08:30 | 1253 | + | 1123 | = | 2376 | 6 | 0 | No |
| 07:15 - 08:15 | 1239 | + | 1136 | = | 2375 | 4 | 0 | No |
| 07:45 - 08:45 | 1157 | + | 1148 | = | 2305 | 12 | 0 | No |
| 08:00 - 09:00 | 1162 | + | 1135 | = | 2297 | 18 | 0 | No |
| 07:00 - 08:00 | 1125 | + | 1135 | = | 2260 | 4 | 0 | No |
| 08:15 - 09:15 | 1077 | + | 1164 | = | 2241 | 30 | 0 | No |
| 08:30 - 09:30 | 1060 | + | 1116 | = | 2176 | 46 | 0 | No |
| 06:45 - 07:45 | 1056 | + | 1089 | = | 2145 | 2 | 0 | No |
| 06:30 - 07:30 | 893 | + | 1058 | = | 1951 | 2 | 0 | No |
| 06:15 - 07:15 | 740 | + | 949 | = | 1689 | 2 | 0 | No |
| 06:00 - 07:00 | 648 | + | 913 | = | 1561 | 0 | 0 | No |
| 19:45 - 20:45 | 822 | + | 578 | = | 1400 | 44 | 0 | No |
| 05:45 - 06:45 | 504 | + | 769 | = | 1273 | 2 | 0 | No |
| 20:00 - 21:00 | 736 | | 517 | | 1253 | 40 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2046 Future Background Conditions

**Study Name: T-3110 Driveway #3 (2046 Background)**

**Study Date : 1/23/2024**

## Warrant 1C Combination of Warrants

### Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

### Summary

9 hours meet 1A minimums.
12 hours meet 1B minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

### Volume Requirements

Rural Factor of 70% applied

| Warrant | 1A | 1B |
|---|---|---|
| Veh/Hr Major = | **336** | **504** |
| Veh/Hr Minor = | **84** | **42** |

**Major Road: US-75** | **Minor Road: Atwoods**

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1A? |
|---|---|---|---|---|---|---|---|---|
| 16:15 - 17:15 | 1517 | + | 1789 | = | 3306 | 127 | 0 | Yes |
| 17:15 - 18:15 | 1586 | + | 1492 | = | 3078 | 113 | 0 | Yes |
| 15:15 - 16:15 | 1444 | + | 1631 | = | 3075 | 111 | 0 | Yes |
| 14:15 - 15:15 | 1213 | + | 1466 | = | 2679 | 118 | 0 | Yes |
| 13:15 - 14:15 | 1085 | + | 1446 | = | 2531 | 117 | 0 | Yes |
| 12:15 - 13:15 | 1068 | + | 1178 | = | 2246 | 119 | 0 | Yes |
| 11:15 - 12:15 | 1107 | + | 1109 | = | 2216 | 105 | 0 | Yes |
| 10:15 - 11:15 | 997 | + | 1213 | = | 2210 | 85 | 0 | Yes |
| 18:15 - 19:15 | 1037 | + | 924 | = | 1961 | 90 | 0 | Yes |
| 07:30 - 08:30 | 1253 | + | 1123 | = | 2376 | 6 | 0 | No |
| 07:15 - 08:15 | 1239 | + | 1136 | = | 2375 | 4 | 0 | No |
| 07:45 - 08:45 | 1157 | + | 1148 | = | 2305 | 12 | 0 | No |

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1B? |
|---|---|---|---|---|---|---|---|---|
| 16:30 - 17:30 | 1521 | + | 1747 | = | 3268 | 128 | 0 | Yes |
| 15:30 - 16:30 | 1503 | + | 1756 | = | 3259 | 111 | 0 | Yes |
| 17:30 - 18:30 | 1515 | + | 1342 | = | 2857 | 109 | 0 | Yes |
| 14:30 - 15:30 | 1274 | + | 1488 | = | 2762 | 118 | 0 | Yes |
| 13:30 - 14:30 | 1076 | + | 1422 | = | 2498 | 124 | 0 | Yes |
| 11:30 - 12:30 | 1141 | + | 1181 | = | 2322 | 94 | 0 | Yes |
| 12:30 - 13:30 | 1072 | + | 1206 | = | 2278 | 117 | 0 | Yes |
| 08:30 - 09:30 | 1060 | + | 1116 | = | 2176 | 46 | 0 | Yes |
| 09:30 - 10:30 | 971 | + | 1199 | = | 2170 | 81 | 0 | Yes |
| 10:30 - 11:30 | 969 | + | 1159 | = | 2128 | 91 | 0 | Yes |
| 18:30 - 19:30 | 936 | + | 814 | = | 1750 | 86 | 0 | Yes |
| 19:30 - 20:30 | 760 | + | 556 | = | 1316 | 48 | 0 | Yes |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2046 Future Background Conditions

**Study Name: T-3110 Driveway #3 (2046 Background)**

**Study Date : 1/23/2024**

## Warrant 2 - Four Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

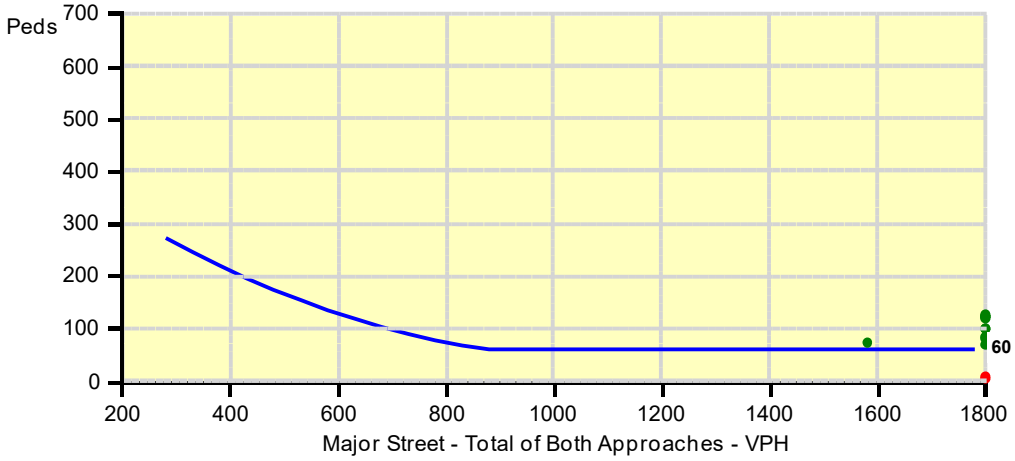
### Summary

11 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Atwoods | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:00 - 17:00 | 1490 | + | 1775 | = | 3265 | 121 | 0 | Yes |
| 17:00 - 18:00 | 1642 | + | 1609 | = | 3251 | 126 | 0 | Yes |
| 15:00 - 16:00 | 1416 | + | 1597 | = | 3013 | 121 | 0 | Yes |
| 14:00 - 15:00 | 1116 | + | 1430 | = | 2546 | 124 | 0 | Yes |
| 13:00 - 14:00 | 1057 | + | 1384 | = | 2441 | 117 | 0 | Yes |
| 12:00 - 13:00 | 1118 | + | 1172 | = | 2290 | 100 | 0 | Yes |
| 10:00 - 11:00 | 1033 | + | 1211 | = | 2244 | 83 | 0 | Yes |
| 11:00 - 12:00 | 1057 | + | 1119 | = | 2176 | 99 | 0 | Yes |
| 18:00 - 19:00 | 1136 | + | 1017 | = | 2153 | 82 | 0 | Yes |
| 09:00 - 10:00 | 924 | + | 1138 | = | 2062 | 70 | 0 | Yes |
| 19:00 - 20:00 | 897 | + | 684 | = | 1581 | 72 | 0 | Yes |
| | | | | | | | 0 | No |



# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2046 Future Background Conditions

**Study Name: T-3110 Driveway #3 (2046 Background)**

**Study Date : 1/23/2024**

## Warrant 3A - Peak Hour Delay

### Description

Intended for sites where for one hour of the day minor street traffic suffers undue traffic delay entering or crossing the major street.

### Summary

64 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

Number of Minor Lanes = **1**

### Volume and Delay Requirements

Veh/Hr All Approaches = **800**
Veh/Hr Minor = **100**
Total Delay (Veh-Hrs) = **4**

| Major Road | Minor Road |
|---|---|
| US-75 | Atwoods |

| Time | Total of All Approaches | Met? | Minor EB | Delay EB | Met? | Minor WB | Delay WB | Met? | Warrant Met? |
|---|---|---|---|---|---|---|---|---|---|
| 16:15 - 17:15 | 3433 | Yes | 127 | - | Yes | 0 | - | --- | Yes |
| 16:45 - 17:45 | 3403 | Yes | 137 | - | Yes | 0 | - | --- | Yes |
| 16:30 - 17:30 | 3396 | Yes | 128 | - | Yes | 0 | - | --- | Yes |
| 16:00 - 17:00 | 3386 | Yes | 121 | - | Yes | 0 | - | --- | Yes |
| 17:00 - 18:00 | 3377 | Yes | 126 | - | Yes | 0 | - | --- | Yes |
| 15:30 - 16:30 | 3370 | Yes | 111 | - | Yes | 0 | - | --- | Yes |
| 15:45 - 16:45 | 3327 | Yes | 110 | - | Yes | 0 | - | --- | Yes |
| 17:15 - 18:15 | 3191 | Yes | 113 | - | Yes | 0 | - | --- | Yes |
| 15:15 - 16:15 | 3186 | Yes | 111 | - | Yes | 0 | - | --- | Yes |
| 15:00 - 16:00 | 3134 | Yes | 121 | - | Yes | 0 | - | --- | Yes |
| 14:45 - 15:45 | 3098 | Yes | 123 | - | Yes | 0 | - | --- | Yes |
| 17:30 - 18:30 | 2966 | Yes | 109 | - | Yes | 0 | - | --- | Yes |
| 14:30 - 15:30 | 2880 | Yes | 118 | - | Yes | 0 | - | --- | Yes |
| 14:15 - 15:15 | 2797 | Yes | 118 | - | Yes | 0 | - | --- | Yes |
| 14:00 - 15:00 | 2670 | Yes | 124 | - | Yes | 0 | - | --- | Yes |
| 13:15 - 14:15 | 2648 | Yes | 117 | - | Yes | 0 | - | --- | Yes |
| 13:45 - 14:45 | 2640 | Yes | 123 | - | Yes | 0 | - | --- | Yes |
| 13:30 - 14:30 | 2622 | Yes | 124 | - | Yes | 0 | - | --- | Yes |
| 13:00 - 14:00 | 2558 | Yes | 117 | - | Yes | 0 | - | --- | Yes |
| 12:45 - 13:45 | 2486 | Yes | 119 | - | Yes | 0 | - | --- | Yes |
| 12:30 - 13:30 | 2395 | Yes | 117 | - | Yes | 0 | - | --- | Yes |
| 12:00 - 13:00 | 2390 | Yes | 100 | - | Yes | 0 | - | --- | Yes |
| 12:15 - 13:15 | 2365 | Yes | 119 | - | Yes | 0 | - | --- | Yes |
| 11:15 - 12:15 | 2321 | Yes | 105 | - | Yes | 0 | - | --- | Yes |
| 17:45 - 18:45 | 2629 | Yes | 88 | - | No | 0 | - | --- | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2046 Future Background Conditions

**Study Name: T-3110 Driveway #3 (2046 Background)**

**Study Date : 1/23/2024**

## Warrant 3B - Peak Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

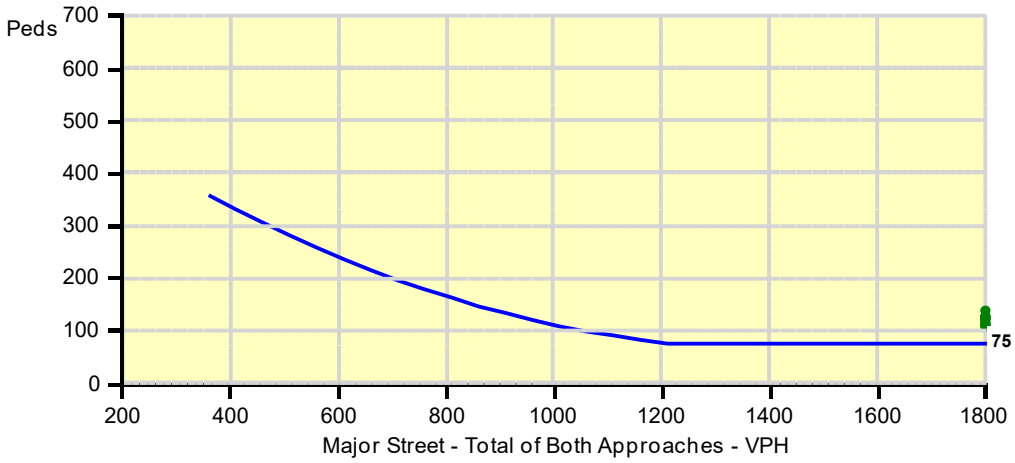
### Summary

38 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Atwoods | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 1517 | + | 1789 | = | 3306 | 127 | 0 | Yes |
| 16:30 - 17:30 | 1521 | + | 1747 | = | 3268 | 128 | 0 | Yes |
| 16:45 - 17:45 | 1598 | + | 1668 | = | 3266 | 137 | 0 | Yes |
| 16:00 - 17:00 | 1490 | + | 1775 | = | 3265 | 121 | 0 | Yes |
| 15:30 - 16:30 | 1503 | + | 1756 | = | 3259 | 111 | 0 | Yes |
| 17:00 - 18:00 | 1642 | + | 1609 | = | 3251 | 126 | 0 | Yes |
| 15:45 - 16:45 | 1465 | + | 1752 | = | 3217 | 110 | 0 | Yes |
| 17:15 - 18:15 | 1586 | + | 1492 | = | 3078 | 113 | 0 | Yes |
| 15:15 - 16:15 | 1444 | + | 1631 | = | 3075 | 111 | 0 | Yes |
| 15:00 - 16:00 | 1416 | + | 1597 | = | 3013 | 121 | 0 | Yes |
| 14:45 - 15:45 | 1364 | + | 1611 | = | 2975 | 123 | 0 | Yes |
| | | | | | | | 0 | Yes |



# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Driveway #3 (2046 Total)**

**Study Date : 1/23/2024**

# Signal Warrants - Summary

## Major Street Approaches

**Northbound: US-75**
Number of Lanes : 2+

Total Approach Volume: 20,151

**Southbound: US-75**
Number of Lanes :2+

Total Approach Volume: 21,418

## Minor Street Approaches

**Eastbound: Atwoods**
Number of Lanes :1

Total Approach Volume: 1,213

**Westbound: Driveway #3**
Number of Lanes :1

Total Approach Volume: 152

## Warrant Summary (Rural Values Apply)

**Warrant 1 - Eight Hour Vehicular Volumes**..... **Satisfied**

**Warrant 1A - Minimum Vehicular Volume**..... **Not Satisfied**
Required volumes reached for 7 hours, 8 are needed

**Warrant 1B - Interruption of Continuous Traffic**..... **Satisfied**
Required volumes reached for 11 hours, 8 are needed

**Warrant 1C - Combination of Warrants**..... **Satisfied**
Required 1A volumes reached for 9 hours, 8 are needed
Required 1B volumes reached for 12 hours, 8 are needed

**Warrant 2 - Four Hour Volumes**..... **Satisfied**
Number of hours (11) volumes exceed minimum >= minimum required (4).

**Warrant 3 - Peak Hour**..... **Satisfied**

**Warrant 3A - Peak Hour Delay**..... **Satisfied**
Number of one hour periods (24) volumes exceed minimum >= required (1). Delay data not evaluated.

**Warrant 3B - Peak Hour Volumes**..... **Satisfied**
Volumes exceed minimums for at least one hour period.

**Warrant 4 - Pedestrian Volumes**..... **Not Evaluated**

**Warrant 5 - School Crossing**..... **Not Evaluated**

**Warrant 6 - Coordinated Signal System**..... **Not Evaluated**

**Warrant 7 - Crash Experience**..... **Not Evaluated**

**Warrant 8 - Roadway Network**..... **Not Evaluated**

**Warrant 9 - Intersection Near a Grade Crossing**..... **Not Evaluated**

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Driveway #3 (2046 Total)**

**Study Date : 1/23/2024**

## Warrant 1A - Minimum Volumes

### Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

### Summary

Only 7 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **420**

Veh/Hr Minor = **105**

| | Major Road US-75 | | | | | Minor Road Atwoods | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 1649 | + | 1915 | = | 3564 | 127 | 12 | Yes |
| 17:15 - 18:15 | 1716 | + | 1609 | = | 3325 | 113 | 11 | Yes |
| 15:15 - 16:15 | 1555 | + | 1750 | = | 3305 | 111 | 12 | Yes |
| 14:15 - 15:15 | 1328 | + | 1582 | = | 2910 | 118 | 12 | Yes |
| 13:15 - 14:15 | 1210 | + | 1547 | = | 2757 | 117 | 9 | Yes |
| 12:15 - 13:15 | 1177 | + | 1271 | = | 2448 | 119 | 8 | Yes |
| 11:15 - 12:15 | 1211 | + | 1189 | = | 2400 | 105 | 8 | Yes |
| 07:30 - 08:30 | 1319 | + | 1182 | = | 2501 | 6 | 6 | No |
| 07:15 - 08:15 | 1303 | + | 1190 | = | 2493 | 4 | 5 | No |
| 07:45 - 08:45 | 1224 | + | 1212 | = | 2436 | 12 | 7 | No |
| 08:00 - 09:00 | 1230 | + | 1204 | = | 2434 | 18 | 8 | No |
| 10:00 - 11:00 | 1115 | + | 1277 | = | 2392 | 83 | 8 | No |
| 07:00 - 08:00 | 1187 | + | 1183 | = | 2370 | 4 | 4 | No |
| 08:15 - 09:15 | 1142 | + | 1227 | = | 2369 | 30 | 7 | No |
| 10:15 - 11:15 | 1085 | + | 1282 | = | 2367 | 85 | 8 | No |
| 11:00 - 12:00 | 1161 | + | 1195 | = | 2356 | 99 | 8 | No |
| 10:45 - 11:45 | 1117 | + | 1197 | = | 2314 | 95 | 8 | No |
| 08:30 - 09:30 | 1122 | + | 1173 | = | 2295 | 46 | 6 | No |
| 10:30 - 11:30 | 1063 | + | 1231 | = | 2294 | 91 | 8 | No |
| 09:45 - 10:45 | 1058 | + | 1235 | = | 2293 | 83 | 7 | No |
| 09:30 - 10:30 | 1039 | + | 1253 | = | 2292 | 81 | 6 | No |
| 08:45 - 09:45 | 1071 | + | 1206 | = | 2277 | 58 | 5 | No |
| 06:45 - 07:45 | 1110 | + | 1133 | = | 2243 | 2 | 3 | No |
| 09:15 - 10:15 | 1032 | + | 1179 | = | 2211 | 72 | 5 | No |
| 18:15 - 19:15 | 1146 | | 1028 | | 2174 | 90 | 8 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Driveway #3 (2046 Total)**

**Study Date : 1/23/2024**

## Warrant 1B - Interruption of Continuous Traffic

### Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

### Summary

11 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **630**

Veh/Hr Minor = **53**

| | Major Road US-75 | | | | | Minor Road Atwoods | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:45 - 17:45 | 1731 | + | 1790 | = | 3521 | 137 | 12 | Yes |
| 15:45 - 16:45 | 1590 | + | 1877 | = | 3467 | 110 | 12 | Yes |
| 14:45 - 15:45 | 1472 | + | 1727 | = | 3199 | 123 | 12 | Yes |
| 17:45 - 18:45 | 1457 | + | 1313 | = | 2770 | 88 | 9 | Yes |
| 13:45 - 14:45 | 1217 | + | 1531 | = | 2748 | 123 | 11 | Yes |
| 12:45 - 13:45 | 1192 | + | 1392 | = | 2584 | 119 | 8 | Yes |
| 11:45 - 12:45 | 1258 | + | 1257 | = | 2515 | 95 | 8 | Yes |
| 10:45 - 11:45 | 1117 | + | 1197 | = | 2314 | 95 | 8 | Yes |
| 09:45 - 10:45 | 1058 | + | 1235 | = | 2293 | 83 | 7 | Yes |
| 08:45 - 09:45 | 1071 | + | 1206 | = | 2277 | 58 | 5 | Yes |
| 18:45 - 19:45 | 977 | + | 807 | = | 1784 | 82 | 8 | Yes |
| 07:30 - 08:30 | 1319 | + | 1182 | = | 2501 | 6 | 6 | No |
| 07:15 - 08:15 | 1303 | + | 1190 | = | 2493 | 4 | 5 | No |
| 07:45 - 08:45 | 1224 | + | 1212 | = | 2436 | 12 | 7 | No |
| 08:00 - 09:00 | 1230 | + | 1204 | = | 2434 | 18 | 8 | No |
| 07:00 - 08:00 | 1187 | + | 1183 | = | 2370 | 4 | 4 | No |
| 08:15 - 09:15 | 1142 | + | 1227 | = | 2369 | 30 | 7 | No |
| 08:30 - 09:30 | 1122 | + | 1173 | = | 2295 | 46 | 6 | No |
| 06:45 - 07:45 | 1110 | + | 1133 | = | 2243 | 2 | 3 | No |
| 06:30 - 07:30 | 939 | + | 1097 | = | 2036 | 2 | 2 | No |
| 06:15 - 07:15 | 778 | + | 983 | = | 1761 | 2 | 1 | No |
| 06:00 - 07:00 | 678 | + | 942 | = | 1620 | 0 | 0 | No |
| 19:45 - 20:45 | 919 | + | 672 | = | 1591 | 44 | 8 | No |
| 20:00 - 21:00 | 832 | + | 610 | = | 1442 | 40 | 8 | No |
| 20:15 - 21:15 | 757 | | 603 | | 1360 | 38 | 8 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Driveway #3 (2046 Total)**

**Study Date : 1/23/2024**

## Warrant 1C Combination of Warrants

### Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

### Summary

9 hours meet 1A minimums.
12 hours meet 1B minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

### Volume Requirements

Rural Factor of 70% applied

| Warrant | 1A | 1B |
|---|---|---|
| Veh/Hr Major = | **336** | **504** |
| Veh/Hr Minor = | **84** | **42** |

**Major Road: US-75** | **Minor Road: Atwoods**

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1A? |
|---|---|---|---|---|---|---|---|---|
| 16:15 - 17:15 | 1649 | + | 1915 | = | 3564 | 127 | 12 | Yes |
| 17:15 - 18:15 | 1716 | + | 1609 | = | 3325 | 113 | 11 | Yes |
| 15:15 - 16:15 | 1555 | + | 1750 | = | 3305 | 111 | 12 | Yes |
| 14:15 - 15:15 | 1328 | + | 1582 | = | 2910 | 118 | 12 | Yes |
| 13:15 - 14:15 | 1210 | + | 1547 | = | 2757 | 117 | 9 | Yes |
| 12:15 - 13:15 | 1177 | + | 1271 | = | 2448 | 119 | 8 | Yes |
| 11:15 - 12:15 | 1211 | + | 1189 | = | 2400 | 105 | 8 | Yes |
| 10:15 - 11:15 | 1085 | + | 1282 | = | 2367 | 85 | 8 | Yes |
| 18:15 - 19:15 | 1146 | + | 1028 | = | 2174 | 90 | 8 | Yes |
| 07:30 - 08:30 | 1319 | + | 1182 | = | 2501 | 6 | 6 | No |
| 07:15 - 08:15 | 1303 | + | 1190 | = | 2493 | 4 | 5 | No |
| 07:45 - 08:45 | 1224 | + | 1212 | = | 2436 | 12 | 7 | No |

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1B? |
|---|---|---|---|---|---|---|---|---|
| 16:30 - 17:30 | 1653 | + | 1871 | = | 3524 | 128 | 12 | Yes |
| 15:30 - 16:30 | 1621 | + | 1878 | = | 3499 | 111 | 12 | Yes |
| 17:30 - 18:30 | 1640 | + | 1456 | = | 3096 | 109 | 10 | Yes |
| 14:30 - 15:30 | 1386 | + | 1604 | = | 2990 | 118 | 12 | Yes |
| 13:30 - 14:30 | 1198 | + | 1528 | = | 2726 | 124 | 10 | Yes |
| 11:30 - 12:30 | 1245 | + | 1265 | = | 2510 | 94 | 8 | Yes |
| 12:30 - 13:30 | 1187 | + | 1300 | = | 2487 | 117 | 8 | Yes |
| 08:30 - 09:30 | 1122 | + | 1173 | = | 2295 | 46 | 6 | Yes |
| 10:30 - 11:30 | 1063 | + | 1231 | = | 2294 | 91 | 8 | Yes |
| 09:30 - 10:30 | 1039 | + | 1253 | = | 2292 | 81 | 6 | Yes |
| 18:30 - 19:30 | 1042 | + | 916 | = | 1958 | 86 | 8 | Yes |
| 19:30 - 20:30 | 858 | + | 652 | = | 1510 | 48 | 8 | Yes |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Driveway #3 (2046 Total)**

**Study Date : 1/23/2024**

## Warrant 2 - Four Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

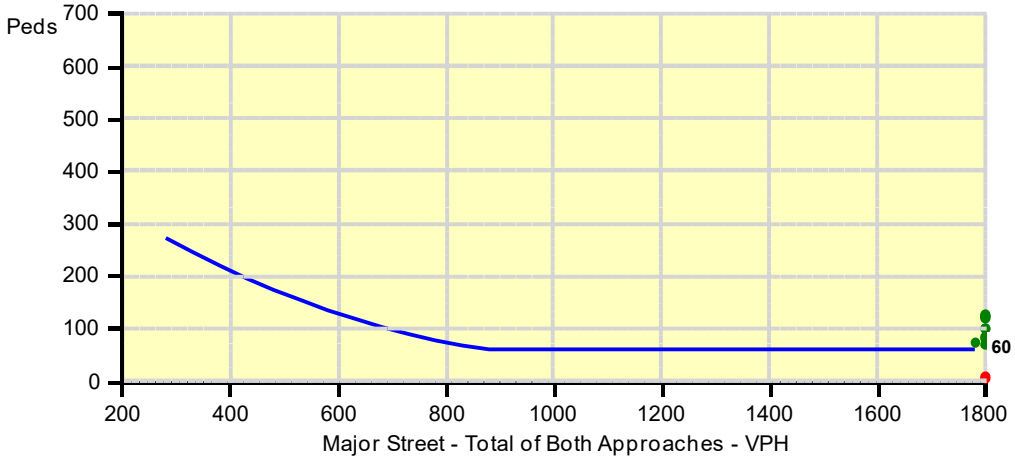
### Summary

11 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Atwoods | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:00 - 17:00 | 1622 | + | 1903 | = | 3525 | 121 | 12 | Yes |
| 17:00 - 18:00 | 1776 | + | 1729 | = | 3505 | 126 | 12 | Yes |
| 15:00 - 16:00 | 1520 | + | 1713 | = | 3233 | 121 | 12 | Yes |
| 14:00 - 15:00 | 1234 | + | 1546 | = | 2780 | 124 | 12 | Yes |
| 13:00 - 14:00 | 1185 | + | 1480 | = | 2665 | 117 | 8 | Yes |
| 12:00 - 13:00 | 1221 | + | 1264 | = | 2485 | 100 | 8 | Yes |
| 10:00 - 11:00 | 1115 | + | 1277 | = | 2392 | 83 | 8 | Yes |
| 18:00 - 19:00 | 1249 | + | 1123 | = | 2372 | 82 | 8 | Yes |
| 11:00 - 12:00 | 1161 | + | 1195 | = | 2356 | 99 | 8 | Yes |
| 09:00 - 10:00 | 980 | + | 1183 | = | 2163 | 70 | 4 | Yes |
| 19:00 - 20:00 | 997 | + | 783 | = | 1780 | 72 | 8 | Yes |
| | | | | | | | 6 | No |



# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Driveway #3 (2046 Total)**

**Study Date : 1/23/2024**

## Warrant 3A - Peak Hour Delay

### Description

Intended for sites where for one hour of the day minor street traffic suffers undue traffic delay entering or crossing the major street.

### Summary

65 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

Number of Minor Lanes = **1**

### Volume and Delay Requirements

Veh/Hr All Approaches = **800**
Veh/Hr Minor = **100**
Total Delay (Veh-Hrs) = **4**

| Major Road | Minor Road |
|---|---|
| US-75 | Atwoods |

| Time | Total of All Approaches | Met? | Minor EB | Delay EB | Met? | Minor WB | Delay WB | Met? | Warrant Met? |
|---|---|---|---|---|---|---|---|---|---|
| 16:15 - 17:15 | 3703 | Yes | 127 | - | Yes | 12 | - | --- | Yes |
| 16:45 - 17:45 | 3670 | Yes | 137 | - | Yes | 12 | - | --- | Yes |
| 16:30 - 17:30 | 3664 | Yes | 128 | - | Yes | 12 | - | --- | Yes |
| 16:00 - 17:00 | 3658 | Yes | 121 | - | Yes | 12 | - | --- | Yes |
| 17:00 - 18:00 | 3643 | Yes | 126 | - | Yes | 12 | - | --- | Yes |
| 15:30 - 16:30 | 3622 | Yes | 111 | - | Yes | 12 | - | --- | Yes |
| 15:45 - 16:45 | 3589 | Yes | 110 | - | Yes | 12 | - | --- | Yes |
| 17:15 - 18:15 | 3449 | Yes | 113 | - | Yes | 11 | - | --- | Yes |
| 15:15 - 16:15 | 3428 | Yes | 111 | - | Yes | 12 | - | --- | Yes |
| 15:00 - 16:00 | 3366 | Yes | 121 | - | Yes | 12 | - | --- | Yes |
| 14:45 - 15:45 | 3334 | Yes | 123 | - | Yes | 12 | - | --- | Yes |
| 17:30 - 18:30 | 3215 | Yes | 109 | - | Yes | 10 | - | --- | Yes |
| 14:30 - 15:30 | 3120 | Yes | 118 | - | Yes | 12 | - | --- | Yes |
| 14:15 - 15:15 | 3040 | Yes | 118 | - | Yes | 12 | - | --- | Yes |
| 14:00 - 15:00 | 2916 | Yes | 124 | - | Yes | 12 | - | --- | Yes |
| 13:15 - 14:15 | 2883 | Yes | 117 | - | Yes | 9 | - | --- | Yes |
| 13:45 - 14:45 | 2882 | Yes | 123 | - | Yes | 11 | - | --- | Yes |
| 13:30 - 14:30 | 2860 | Yes | 124 | - | Yes | 10 | - | --- | Yes |
| 13:00 - 14:00 | 2790 | Yes | 117 | - | Yes | 8 | - | --- | Yes |
| 12:45 - 13:45 | 2711 | Yes | 119 | - | Yes | 8 | - | --- | Yes |
| 12:30 - 13:30 | 2612 | Yes | 117 | - | Yes | 8 | - | --- | Yes |
| 12:00 - 13:00 | 2593 | Yes | 100 | - | Yes | 8 | - | --- | Yes |
| 12:15 - 13:15 | 2575 | Yes | 119 | - | Yes | 8 | - | --- | Yes |
| 11:15 - 12:15 | 2513 | Yes | 105 | - | Yes | 8 | - | --- | Yes |
| 17:45 - 18:45 | 2867 | Yes | 88 | - | No | 9 | - | --- | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Driveway #3 in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Driveway #3 (2046 Total)**

**Study Date : 1/23/2024**

## Warrant 3B - Peak Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

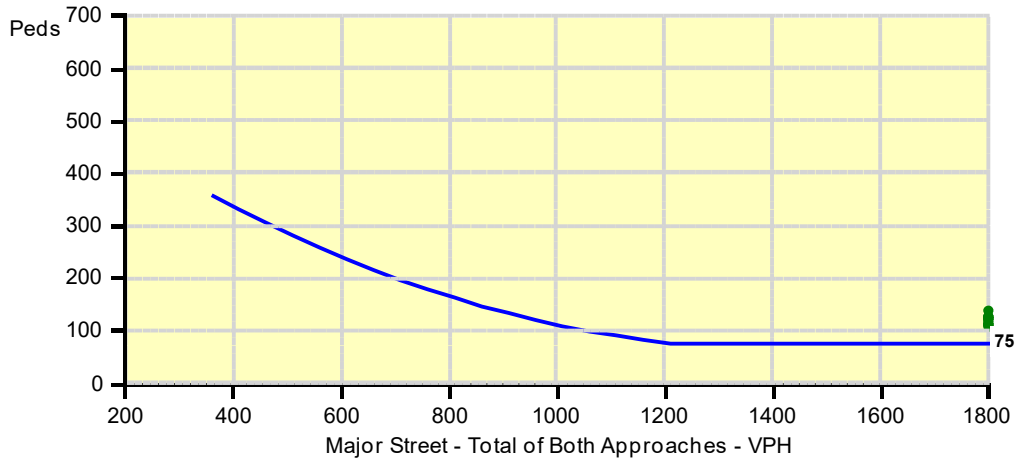
### Summary

38 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Atwoods | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 1649 | + | 1915 | = | 3564 | 127 | 12 | Yes |
| 16:00 - 17:00 | 1622 | + | 1903 | = | 3525 | 121 | 12 | Yes |
| 16:30 - 17:30 | 1653 | + | 1871 | = | 3524 | 128 | 12 | Yes |
| 16:45 - 17:45 | 1731 | + | 1790 | = | 3521 | 137 | 12 | Yes |
| 17:00 - 18:00 | 1776 | + | 1729 | = | 3505 | 126 | 12 | Yes |
| 15:30 - 16:30 | 1621 | + | 1878 | = | 3499 | 111 | 12 | Yes |
| 15:45 - 16:45 | 1590 | + | 1877 | = | 3467 | 110 | 12 | Yes |
| 17:15 - 18:15 | 1716 | + | 1609 | = | 3325 | 113 | 11 | Yes |
| 15:15 - 16:15 | 1555 | + | 1750 | = | 3305 | 111 | 12 | Yes |
| 15:00 - 16:00 | 1520 | + | 1713 | = | 3233 | 121 | 12 | Yes |
| 14:45 - 15:45 | 1472 | + | 1727 | = | 3199 | 123 | 12 | Yes |
| | | | | | | | 10 | Yes |



# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2023 Existing Conditions

**Study Name: T-3110 Rice Creek (Existing)**

**Study Date : 1/24/2024**

# Signal Warrants - Summary

## Major Street Approaches

**Northbound: US-75**
Number of Lanes : 2+

Total Approach Volume: 2,913

**Southbound: US-75**
Number of Lanes :2+

Total Approach Volume: 2,803

## Minor Street Approaches

**Eastbound: Rice Creek Rd**
Number of Lanes :1

Total Approach Volume: 221

**Westbound: Rice Creek Rd**
Number of Lanes :1

Total Approach Volume: 196

## Warrant Summary (Rural Values Apply)

**Warrant 1 - Eight Hour Vehicular Volumes**..... **Not Satisfied**

**Warrant 1A - Minimum Vehicular Volume**..... **Not Satisfied**
Required volumes reached for 0 hours, 8 are needed

**Warrant 1B - Interruption of Continuous Traffic**..... **Not Satisfied**
Required volumes reached for 3 hours, 8 are needed

**Warrant 1C - Combination of Warrants**..... **Not Satisfied**
Required 1A volumes reached for 0 hours, 8 are needed
Required 1B volumes reached for 4 hours, 8 are needed

**Warrant 2 - Four Hour Volumes**..... **Not Satisfied**
Number of hours (2) volumes exceed minimum < minimum required (4).

**Warrant 3 - Peak Hour**..... **Satisfied**

**Warrant 3A - Peak Hour Delay**..... **Not Satisfied**
Approach volumes on minor street don't exceed minimums for any one hour period. Delay data not evaluated.

**Warrant 3B - Peak Hour Volumes**..... **Satisfied**
Volumes exceed minimums for at least one hour period.

**Warrant 4 - Pedestrian Volumes**..... **Not Evaluated**

**Warrant 5 - School Crossing**..... **Not Evaluated**

**Warrant 6 - Coordinated Signal System**..... **Not Evaluated**

**Warrant 7 - Crash Experience**..... **Not Evaluated**

**Warrant 8 - Roadway Network**..... **Not Evaluated**

**Warrant 9 - Intersection Near a Grade Crossing**..... **Not Evaluated**

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2023 Existing Conditions

**Study Name: T-3110 Rice Creek (Existing)**

**Study Date : 1/24/2024**

## Warrant 1A - Minimum Volumes

### Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

### Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **420**

Veh/Hr Minor = **105**

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 812 | + | 925 | = | 1737 | 80 | 59 | No |
| 16:30 - 17:30 | 809 | + | 921 | = | 1730 | 71 | 58 | No |
| 16:45 - 17:45 | 820 | + | 872 | = | 1692 | 75 | 57 | No |
| 16:00 - 17:00 | 789 | + | 898 | = | 1687 | 79 | 51 | No |
| 17:00 - 18:00 | 836 | + | 835 | = | 1671 | 66 | 51 | No |
| 15:45 - 16:45 | 599 | + | 681 | = | 1280 | 59 | 32 | No |
| 07:15 - 08:15 | 720 | + | 532 | = | 1252 | 32 | 53 | No |
| 07:30 - 08:30 | 717 | + | 517 | = | 1234 | 39 | 55 | No |
| 17:15 - 18:15 | 622 | + | 604 | = | 1226 | 43 | 32 | No |
| 07:00 - 08:00 | 676 | + | 549 | = | 1225 | 29 | 46 | No |
| 07:45 - 08:45 | 647 | + | 524 | = | 1171 | 36 | 53 | No |
| 08:00 - 09:00 | 612 | + | 521 | = | 1133 | 47 | 48 | No |
| 06:45 - 07:45 | 485 | + | 405 | = | 890 | 22 | 33 | No |
| 08:15 - 09:15 | 449 | + | 403 | = | 852 | 36 | 29 | No |
| 15:30 - 16:30 | 400 | + | 443 | = | 843 | 43 | 22 | No |
| 17:30 - 18:30 | 416 | + | 369 | = | 785 | 31 | 22 | No |
| 08:30 - 09:30 | 292 | + | 270 | = | 562 | 23 | 19 | No |
| 06:30 - 07:30 | 279 | + | 283 | = | 562 | 14 | 20 | No |
| 15:15 - 16:15 | 191 | + | 204 | = | 395 | 22 | 11 | No |
| 17:45 - 18:45 | 206 | + | 180 | = | 386 | 11 | 13 | No |
| 08:45 - 09:45 | 156 | + | 141 | = | 297 | 18 | 8 | No |
| 06:15 - 07:15 | 119 | + | 135 | = | 254 | 8 | 12 | No |
| 05:30 - 06:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 05:45 - 06:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 06:00 - 07:00 | 0 | | 0 | | 0 | 0 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2023 Existing Conditions

**Study Name: T-3110 Rice Creek (Existing)**

**Study Date : 1/24/2024**

## Warrant 1B - Interruption of Continuous Traffic

### Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

### Summary

Only 3 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **630**

Veh/Hr Minor = **53**

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:45 - 17:45 | 820 | + | 872 | = | 1692 | 75 | 57 | Yes |
| 15:45 - 16:45 | 599 | + | 681 | = | 1280 | 59 | 32 | Yes |
| 07:15 - 08:15 | 720 | + | 532 | = | 1252 | 32 | 53 | Yes |
| 07:00 - 08:00 | 676 | + | 549 | = | 1225 | 29 | 46 | No |
| 06:45 - 07:45 | 485 | + | 405 | = | 890 | 22 | 33 | No |
| 08:15 - 09:15 | 449 | + | 403 | = | 852 | 36 | 29 | No |
| 15:30 - 16:30 | 400 | + | 443 | = | 843 | 43 | 22 | No |
| 08:30 - 09:30 | 292 | + | 270 | = | 562 | 23 | 19 | No |
| 06:30 - 07:30 | 279 | + | 283 | = | 562 | 14 | 20 | No |
| 15:15 - 16:15 | 191 | + | 204 | = | 395 | 22 | 11 | No |
| 17:45 - 18:45 | 206 | + | 180 | = | 386 | 11 | 13 | No |
| 08:45 - 09:45 | 156 | + | 141 | = | 297 | 18 | 8 | No |
| 06:15 - 07:15 | 119 | + | 135 | = | 254 | 8 | 12 | No |
| 05:30 - 06:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 05:45 - 06:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 06:00 - 07:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 05:15 - 06:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 04:15 - 05:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 03:00 - 04:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:15 - 03:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 01:30 - 02:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 01:45 - 02:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:30 - 03:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:45 - 03:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 03:15 - 04:15 | 0 | | 0 | | 0 | 0 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2023 Existing Conditions

**Study Name: T-3110 Rice Creek (Existing)**

**Study Date : 1/24/2024**

## Warrant 1C Combination of Warrants

### Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

### Summary

Only 0 hours meet 1A minimums.
Only 4 hours meet 1B minimums.
Warrant is NOT met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

### Volume Requirements

Rural Factor of 70% applied

| Warrant | 1A | 1B |
|---|---|---|
| Veh/Hr Major = | **336** | **504** |
| Veh/Hr Minor = | **84** | **42** |

**Major Road: US-75** | **Minor Road: Rice Creek Rd**

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1A? |
|---|---|---|---|---|---|---|---|---|
| 16:15 - 17:15 | 812 | + | 925 | = | 1737 | 80 | 59 | No |
| 16:30 - 17:30 | 809 | + | 921 | = | 1730 | 71 | 58 | No |
| 16:45 - 17:45 | 820 | + | 872 | = | 1692 | 75 | 57 | No |
| 16:00 - 17:00 | 789 | + | 898 | = | 1687 | 79 | 51 | No |
| 17:00 - 18:00 | 836 | + | 835 | = | 1671 | 66 | 51 | No |
| 15:45 - 16:45 | 599 | + | 681 | = | 1280 | 59 | 32 | No |
| 07:15 - 08:15 | 720 | + | 532 | = | 1252 | 32 | 53 | No |
| 07:30 - 08:30 | 717 | + | 517 | = | 1234 | 39 | 55 | No |
| 17:15 - 18:15 | 622 | + | 604 | = | 1226 | 43 | 32 | No |
| 07:00 - 08:00 | 676 | + | 549 | = | 1225 | 29 | 46 | No |
| 07:45 - 08:45 | 647 | + | 524 | = | 1171 | 36 | 53 | No |
| 08:00 - 09:00 | 612 | + | 521 | = | 1133 | 47 | 48 | No |

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1B? |
|---|---|---|---|---|---|---|---|---|
| 16:30 - 17:30 | 809 | + | 921 | = | 1730 | 71 | 58 | Yes |
| 07:00 - 08:00 | 676 | + | 549 | = | 1225 | 29 | 46 | Yes |
| 08:00 - 09:00 | 612 | + | 521 | = | 1133 | 47 | 48 | Yes |
| 15:30 - 16:30 | 400 | + | 443 | = | 843 | 43 | 22 | Yes |
| 06:45 - 07:45 | 485 | + | 405 | = | 890 | 22 | 33 | No |
| 17:30 - 18:30 | 416 | + | 369 | = | 785 | 31 | 22 | No |
| 06:30 - 07:30 | 279 | + | 283 | = | 562 | 14 | 20 | No |
| 15:15 - 16:15 | 191 | + | 204 | = | 395 | 22 | 11 | No |
| 17:45 - 18:45 | 206 | + | 180 | = | 386 | 11 | 13 | No |
| 06:15 - 07:15 | 119 | + | 135 | = | 254 | 8 | 12 | No |
| 05:30 - 06:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 05:45 - 06:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2023 Existing Conditions

**Study Name: T-3110 Rice Creek (Existing)**

**Study Date : 1/24/2024**

## Warrant 2 - Four Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

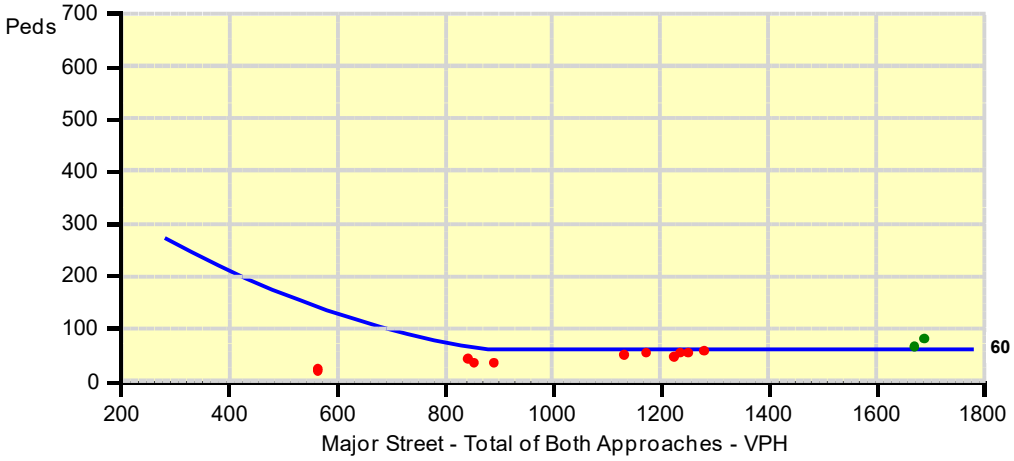
### Summary

Only 2 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:00 - 17:00 | 789 | + | 898 | = | 1687 | 79 | 51 | Yes |
| 17:00 - 18:00 | 836 | + | 835 | = | 1671 | 66 | 51 | Yes |
| 15:45 - 16:45 | 599 | + | 681 | = | 1280 | 59 | 32 | No |
| 07:15 - 08:15 | 720 | + | 532 | = | 1252 | 32 | 53 | No |
| 07:30 - 08:30 | 717 | + | 517 | = | 1234 | 39 | 55 | No |
| 07:00 - 08:00 | 676 | + | 549 | = | 1225 | 29 | 46 | No |
| 07:45 - 08:45 | 647 | + | 524 | = | 1171 | 36 | 53 | No |
| 08:00 - 09:00 | 612 | + | 521 | = | 1133 | 47 | 48 | No |
| 06:45 - 07:45 | 485 | + | 405 | = | 890 | 22 | 33 | No |
| 08:15 - 09:15 | 449 | + | 403 | = | 852 | 36 | 29 | No |
| 15:30 - 16:30 | 400 | + | 443 | = | 843 | 43 | 22 | No |
| | | | | | | | 19 | No |



# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2023 Existing Conditions

**Study Name: T-3110 Rice Creek (Existing)**

**Study Date : 1/24/2024**

## Warrant 3A - Peak Hour Delay

### Description

Intended for sites where for one hour of the day minor street traffic suffers undue traffic delay entering or crossing the major street.

### Summary

16 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Number of Minor Lanes = **1**

### Volume and Delay Requirements

Veh/Hr All Approaches = **800**
Veh/Hr Minor = **100**
Total Delay (Veh-Hrs) = **4**

| | Major Road | | | | | Minor Road | | | |
|---|---|---|---|---|---|---|---|---|---|
| | US-75 | | | | | Rice Creek Rd | | | |
| Time | Total of All Approaches | Met? | Minor EB | Delay EB | Met? | Minor WB | Delay WB | Met? | Warrant Met? |
| 16:15 - 17:15 | 1876 | Yes | 80 | - | No | 59 | - | --- | No |
| 16:30 - 17:30 | 1859 | Yes | 71 | - | No | 58 | - | --- | No |
| 16:45 - 17:45 | 1824 | Yes | 75 | - | No | 57 | - | --- | No |
| 16:00 - 17:00 | 1817 | Yes | 79 | - | No | 51 | - | --- | No |
| 17:00 - 18:00 | 1788 | Yes | 66 | - | No | 51 | - | --- | No |
| 15:45 - 16:45 | 1371 | Yes | 59 | - | No | 32 | - | --- | No |
| 07:15 - 08:15 | 1337 | Yes | 32 | - | --- | 53 | - | No | No |
| 07:30 - 08:30 | 1328 | Yes | 39 | - | --- | 55 | - | No | No |
| 17:15 - 18:15 | 1301 | Yes | 43 | - | No | 32 | - | --- | No |
| 07:00 - 08:00 | 1300 | Yes | 29 | - | --- | 46 | - | No | No |
| 07:45 - 08:45 | 1260 | Yes | 36 | - | --- | 53 | - | No | No |
| 08:00 - 09:00 | 1228 | Yes | 47 | - | --- | 48 | - | No | No |
| 06:45 - 07:45 | 945 | Yes | 22 | - | --- | 33 | - | No | No |
| 08:15 - 09:15 | 917 | Yes | 36 | - | No | 29 | - | --- | No |
| 15:30 - 16:30 | 908 | Yes | 43 | - | No | 22 | - | --- | No |
| 17:30 - 18:30 | 838 | Yes | 31 | - | No | 22 | - | --- | No |
| 08:30 - 09:30 | 604 | No | 23 | - | No | 19 | - | --- | No |
| 06:30 - 07:30 | 596 | No | 14 | - | --- | 20 | - | No | No |
| 15:15 - 16:15 | 428 | No | 22 | - | No | 11 | - | --- | No |
| 17:45 - 18:45 | 410 | No | 11 | - | --- | 13 | - | No | No |
| 08:45 - 09:45 | 323 | No | 18 | - | No | 8 | - | --- | No |
| 06:15 - 07:15 | 274 | No | 8 | - | --- | 12 | - | No | No |
| 05:30 - 06:30 | 0 | No | 0 | - | --- | 0 | - | No | No |
| 05:45 - 06:45 | 0 | No | 0 | - | --- | 0 | - | No | No |
| 06:00 - 07:00 | 0 | No | 0 | - | --- | 0 | - | No | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2023 Existing Conditions

**Study Name: T-3110 Rice Creek (Existing)**

**Study Date : 1/24/2024**

## Warrant 3B - Peak Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

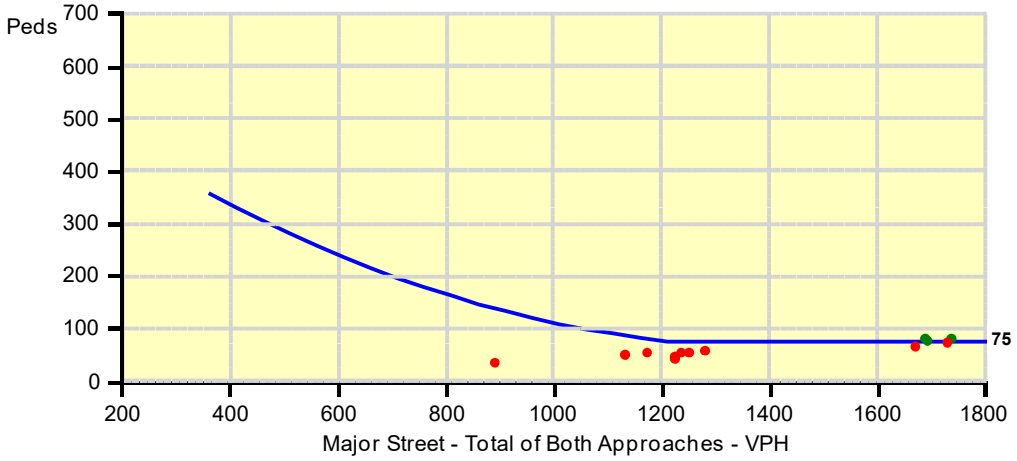
### Summary

3 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 812 | + | 925 | = | 1737 | 80 | 59 | Yes |
| 16:45 - 17:45 | 820 | + | 872 | = | 1692 | 75 | 57 | Yes |
| 16:00 - 17:00 | 789 | + | 898 | = | 1687 | 79 | 51 | Yes |
| 16:30 - 17:30 | 809 | + | 921 | = | 1730 | 71 | 58 | No |
| 17:00 - 18:00 | 836 | + | 835 | = | 1671 | 66 | 51 | No |
| 15:45 - 16:45 | 599 | + | 681 | = | 1280 | 59 | 32 | No |
| 07:15 - 08:15 | 720 | + | 532 | = | 1252 | 32 | 53 | No |
| 07:30 - 08:30 | 717 | + | 517 | = | 1234 | 39 | 55 | No |
| 17:15 - 18:15 | 622 | + | 604 | = | 1226 | 43 | 32 | No |
| 07:00 - 08:00 | 676 | + | 549 | = | 1225 | 29 | 46 | No |
| 07:45 - 08:45 | 647 | + | 524 | = | 1171 | 36 | 53 | No |
| | | | | | | | 48 | No |



# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2026 Future Background Conditions

**Study Name: T-3110 Rice Creek (2026 Background)**

**Study Date : 1/24/2024**

# Signal Warrants - Summary

## Major Street Approaches

**Northbound: US-75**
Number of Lanes : 2+

Total Approach Volume: 3,285

**Southbound: US-75**
Number of Lanes :2+

Total Approach Volume: 3,163

## Minor Street Approaches

**Eastbound: Rice Creek Rd**
Number of Lanes :1

Total Approach Volume: 271

**Westbound: Rice Creek Rd**
Number of Lanes :1

Total Approach Volume: 244

## Warrant Summary (Rural Values Apply)

**Warrant 1 - Eight Hour Vehicular Volumes** ..... **Not Satisfied**

**Warrant 1A - Minimum Vehicular Volume** ..... **Not Satisfied**
Required volumes reached for 0 hours, 8 are needed

**Warrant 1B - Interruption of Continuous Traffic** ..... **Not Satisfied**
Required volumes reached for 4 hours, 8 are needed

**Warrant 1C - Combination of Warrants** ..... **Not Satisfied**
Required 1A volumes reached for 1 hours, 8 are needed
Required 1B volumes reached for 4 hours, 8 are needed

**Warrant 2 - Four Hour Volumes** ..... **Not Satisfied**
Number of hours (3) volumes exceed minimum < minimum required (4).

**Warrant 3 - Peak Hour** ..... **Satisfied**

**Warrant 3A - Peak Hour Delay** ..... **Not Satisfied**
Approach volumes on minor street don't exceed minimums for any one hour period. Delay data not evaluated.

**Warrant 3B - Peak Hour Volumes** ..... **Satisfied**
Volumes exceed minimums for at least one hour period.

**Warrant 4 - Pedestrian Volumes** ..... **Not Evaluated**

**Warrant 5 - School Crossing** ..... **Not Evaluated**

**Warrant 6 - Coordinated Signal System** ..... **Not Evaluated**

**Warrant 7 - Crash Experience** ..... **Not Evaluated**

**Warrant 8 - Roadway Network** ..... **Not Evaluated**

**Warrant 9 - Intersection Near a Grade Crossing** ..... **Not Evaluated**

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2026 Future Background Conditions

**Study Name: T-3110 Rice Creek (2026 Background)**

**Study Date : 1/24/2024**

## Warrant 1A - Minimum Volumes

### Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

### Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **420**

Veh/Hr Minor = **105**

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 915 | + | 1042 | = | 1957 | 96 | 71 | No |
| 16:30 - 17:30 | 912 | + | 1037 | = | 1949 | 86 | 71 | No |
| 16:45 - 17:45 | 924 | + | 982 | = | 1906 | 91 | 70 | No |
| 16:00 - 17:00 | 889 | + | 1012 | = | 1901 | 94 | 62 | No |
| 17:00 - 18:00 | 941 | + | 940 | = | 1881 | 80 | 64 | No |
| 15:45 - 16:45 | 674 | + | 767 | = | 1441 | 70 | 40 | No |
| 07:15 - 08:15 | 812 | + | 603 | = | 1415 | 42 | 66 | No |
| 07:30 - 08:30 | 809 | + | 586 | = | 1395 | 51 | 67 | No |
| 07:00 - 08:00 | 763 | + | 621 | = | 1384 | 37 | 58 | No |
| 17:15 - 18:15 | 700 | + | 680 | = | 1380 | 52 | 41 | No |
| 07:45 - 08:45 | 731 | + | 594 | = | 1325 | 48 | 65 | No |
| 08:00 - 09:00 | 692 | + | 590 | = | 1282 | 60 | 60 | No |
| 06:45 - 07:45 | 547 | + | 458 | = | 1005 | 27 | 42 | No |
| 08:15 - 09:15 | 508 | + | 456 | = | 964 | 46 | 37 | No |
| 15:30 - 16:30 | 450 | + | 499 | = | 949 | 51 | 27 | No |
| 17:30 - 18:30 | 468 | + | 416 | = | 884 | 37 | 28 | No |
| 08:30 - 09:30 | 331 | + | 305 | = | 636 | 29 | 25 | No |
| 06:30 - 07:30 | 315 | + | 320 | = | 635 | 17 | 26 | No |
| 15:15 - 16:15 | 215 | + | 230 | = | 445 | 26 | 14 | No |
| 17:45 - 18:45 | 232 | + | 203 | = | 435 | 13 | 16 | No |
| 08:45 - 09:45 | 177 | + | 159 | = | 336 | 22 | 11 | No |
| 06:15 - 07:15 | 135 | + | 152 | = | 287 | 9 | 15 | No |
| 05:30 - 06:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 05:45 - 06:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 06:00 - 07:00 | 0 | | 0 | | 0 | 0 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2026 Future Background Conditions

**Study Name: T-3110 Rice Creek (2026 Background)**

**Study Date : 1/24/2024**

## Warrant 1B - Interruption of Continuous Traffic

### Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

### Summary

Only 4 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **630**

Veh/Hr Minor = **53**

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:45 - 17:45 | 924 | + | 982 | = | 1906 | 91 | 70 | Yes |
| 15:45 - 16:45 | 674 | + | 767 | = | 1441 | 70 | 40 | Yes |
| 07:00 - 08:00 | 763 | + | 621 | = | 1384 | 37 | 58 | Yes |
| 08:00 - 09:00 | 692 | + | 590 | = | 1282 | 60 | 60 | Yes |
| 06:45 - 07:45 | 547 | + | 458 | = | 1005 | 27 | 42 | No |
| 15:30 - 16:30 | 450 | + | 499 | = | 949 | 51 | 27 | No |
| 06:30 - 07:30 | 315 | + | 320 | = | 635 | 17 | 26 | No |
| 15:15 - 16:15 | 215 | + | 230 | = | 445 | 26 | 14 | No |
| 17:45 - 18:45 | 232 | + | 203 | = | 435 | 13 | 16 | No |
| 06:15 - 07:15 | 135 | + | 152 | = | 287 | 9 | 15 | No |
| 05:30 - 06:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 05:45 - 06:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 06:00 - 07:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 05:15 - 06:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 04:15 - 05:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 03:00 - 04:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:00 - 03:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 01:30 - 02:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 01:45 - 02:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:30 - 03:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:45 - 03:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 03:15 - 04:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 04:00 - 05:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 05:00 - 06:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 09:00 - 10:00 | 0 | | 0 | | 0 | 0 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2026 Future Background Conditions

**Study Name: T-3110 Rice Creek (2026 Background)**

**Study Date : 1/24/2024**

## Warrant 1C Combination of Warrants

### Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

### Summary

Only 1 hours meet 1A minimums.
Only 4 hours meet 1B minimums.
Warrant is NOT met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

### Volume Requirements

Rural Factor of 70% applied

| Warrant | 1A | 1B |
|---|---|---|
| Veh/Hr Major = | **336** | **504** |
| Veh/Hr Minor = | **84** | **42** |

**Major Road: US-75** | **Minor Road: Rice Creek Rd**

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1A? |
|---|---|---|---|---|---|---|---|---|
| 16:00 - 17:00 | 889 | + | 1012 | = | 1901 | 94 | 62 | Yes |
| 17:00 - 18:00 | 941 | + | 940 | = | 1881 | 80 | 64 | No |
| 15:45 - 16:45 | 674 | + | 767 | = | 1441 | 70 | 40 | No |
| 07:15 - 08:15 | 812 | + | 603 | = | 1415 | 42 | 66 | No |
| 07:30 - 08:30 | 809 | + | 586 | = | 1395 | 51 | 67 | No |
| 07:00 - 08:00 | 763 | + | 621 | = | 1384 | 37 | 58 | No |
| 17:15 - 18:15 | 700 | + | 680 | = | 1380 | 52 | 41 | No |
| 07:45 - 08:45 | 731 | + | 594 | = | 1325 | 48 | 65 | No |
| 08:00 - 09:00 | 692 | + | 590 | = | 1282 | 60 | 60 | No |
| 06:45 - 07:45 | 547 | + | 458 | = | 1005 | 27 | 42 | No |
| 08:15 - 09:15 | 508 | + | 456 | = | 964 | 46 | 37 | No |
| 15:30 - 16:30 | 450 | + | 499 | = | 949 | 51 | 27 | No |

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1B? |
|---|---|---|---|---|---|---|---|---|
| 16:30 - 17:30 | 912 | + | 1037 | = | 1949 | 86 | 71 | Yes |
| 07:45 - 08:45 | 731 | + | 594 | = | 1325 | 48 | 65 | Yes |
| 06:45 - 07:45 | 547 | + | 458 | = | 1005 | 27 | 42 | Yes |
| 15:30 - 16:30 | 450 | + | 499 | = | 949 | 51 | 27 | Yes |
| 17:30 - 18:30 | 468 | + | 416 | = | 884 | 37 | 28 | No |
| 06:30 - 07:30 | 315 | + | 320 | = | 635 | 17 | 26 | No |
| 15:15 - 16:15 | 215 | + | 230 | = | 445 | 26 | 14 | No |
| 17:45 - 18:45 | 232 | + | 203 | = | 435 | 13 | 16 | No |
| 08:45 - 09:45 | 177 | + | 159 | = | 336 | 22 | 11 | No |
| 06:15 - 07:15 | 135 | + | 152 | = | 287 | 9 | 15 | No |
| 04:45 - 05:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 05:00 - 06:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2026 Future Background Conditions

**Study Name: T-3110 Rice Creek (2026 Background)**

**Study Date : 1/24/2024**

## Warrant 2 - Four Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

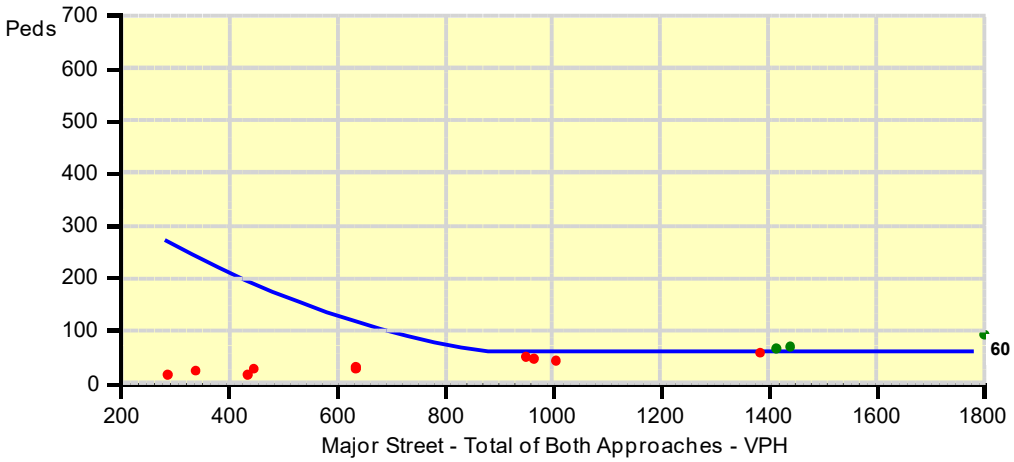
### Summary

Only 3 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:45 - 17:45 | 924 | + | 982 | = | 1906 | 91 | 70 | Yes |
| 15:45 - 16:45 | 674 | + | 767 | = | 1441 | 70 | 40 | Yes |
| 07:15 - 08:15 | 812 | + | 603 | = | 1415 | 42 | 66 | Yes |
| 07:00 - 08:00 | 763 | + | 621 | = | 1384 | 37 | 58 | No |
| 06:45 - 07:45 | 547 | + | 458 | = | 1005 | 27 | 42 | No |
| 08:15 - 09:15 | 508 | + | 456 | = | 964 | 46 | 37 | No |
| 15:30 - 16:30 | 450 | + | 499 | = | 949 | 51 | 27 | No |
| 08:30 - 09:30 | 331 | + | 305 | = | 636 | 29 | 25 | No |
| 06:30 - 07:30 | 315 | + | 320 | = | 635 | 17 | 26 | No |
| 15:15 - 16:15 | 215 | + | 230 | = | 445 | 26 | 14 | No |
| 17:45 - 18:45 | 232 | + | 203 | = | 435 | 13 | 16 | No |
| | | | | | | | 11 | No |



# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2026 Future Background Conditions

**Study Name: T-3110 Rice Creek (2026 Background)**

**Study Date : 1/24/2024**

## Warrant 3A - Peak Hour Delay

### Description

Intended for sites where for one hour of the day minor street traffic suffers undue traffic delay entering or crossing the major street.

### Summary

16 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Number of Minor Lanes = **1**

### Volume and Delay Requirements

Veh/Hr All Approaches = **800**
Veh/Hr Minor = **100**
Total Delay (Veh-Hrs) = **4**

| | Major Road | | Minor Road | | | | | |
|---|---|---|---|---|---|---|---|---|
| | US-75 | | Rice Creek Rd | | | | | |
| Time | Total of All Approaches | Met? | Minor EB | Delay EB | Met? | Minor WB | Delay WB | Met? | Warrant Met? |
| 16:15 - 17:15 | 2124 | Yes | 96 | - | No | 71 | - | --- | No |
| 16:30 - 17:30 | 2106 | Yes | 86 | - | No | 71 | - | --- | No |
| 16:45 - 17:45 | 2067 | Yes | 91 | - | No | 70 | - | --- | No |
| 16:00 - 17:00 | 2057 | Yes | 94 | - | No | 62 | - | --- | No |
| 17:00 - 18:00 | 2025 | Yes | 80 | - | No | 64 | - | --- | No |
| 15:45 - 16:45 | 1551 | Yes | 70 | - | No | 40 | - | --- | No |
| 07:15 - 08:15 | 1523 | Yes | 42 | - | --- | 66 | - | No | No |
| 07:30 - 08:30 | 1513 | Yes | 51 | - | --- | 67 | - | No | No |
| 07:00 - 08:00 | 1479 | Yes | 37 | - | --- | 58 | - | No | No |
| 17:15 - 18:15 | 1473 | Yes | 52 | - | No | 41 | - | --- | No |
| 07:45 - 08:45 | 1438 | Yes | 48 | - | --- | 65 | - | No | No |
| 08:00 - 09:00 | 1402 | Yes | 60 | - | --- | 60 | - | No | No |
| 06:45 - 07:45 | 1074 | Yes | 27 | - | --- | 42 | - | No | No |
| 08:15 - 09:15 | 1047 | Yes | 46 | - | No | 37 | - | --- | No |
| 15:30 - 16:30 | 1027 | Yes | 51 | - | No | 27 | - | --- | No |
| 17:30 - 18:30 | 949 | Yes | 37 | - | No | 28 | - | --- | No |
| 08:30 - 09:30 | 690 | No | 29 | - | No | 25 | - | --- | No |
| 06:30 - 07:30 | 678 | No | 17 | - | --- | 26 | - | No | No |
| 15:15 - 16:15 | 485 | No | 26 | - | No | 14 | - | --- | No |
| 17:45 - 18:45 | 464 | No | 13 | - | --- | 16 | - | No | No |
| 08:45 - 09:45 | 369 | No | 22 | - | No | 11 | - | --- | No |
| 06:15 - 07:15 | 311 | No | 9 | - | --- | 15 | - | No | No |
| 05:30 - 06:30 | 0 | No | 0 | - | --- | 0 | - | No | No |
| 05:45 - 06:45 | 0 | No | 0 | - | --- | 0 | - | No | No |
| 06:00 - 07:00 | 0 | No | 0 | - | --- | 0 | - | No | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2026 Future Background Conditions

**Study Name: T-3110 Rice Creek (2026 Background)**

**Study Date : 1/24/2024**

## Warrant 3B - Peak Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

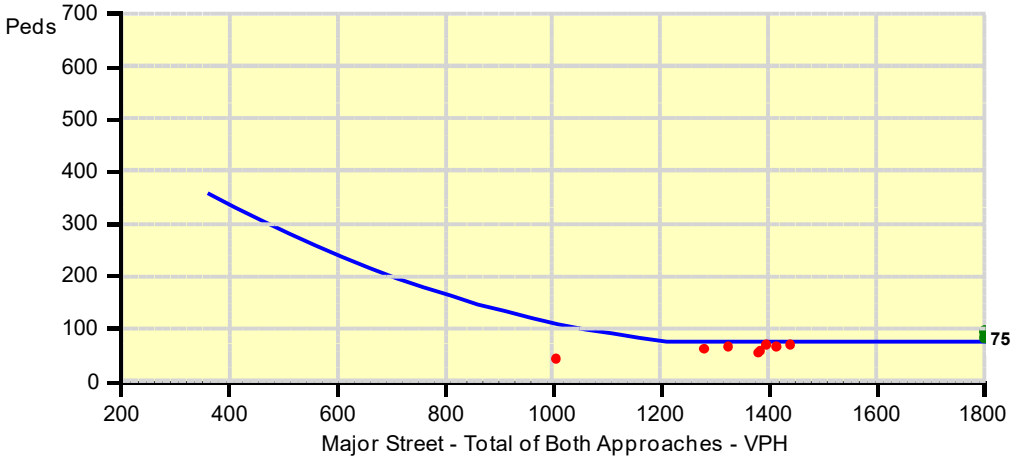
### Summary

5 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 915 | + | 1042 | = | 1957 | 96 | 71 | Yes |
| 16:30 - 17:30 | 912 | + | 1037 | = | 1949 | 86 | 71 | Yes |
| 16:45 - 17:45 | 924 | + | 982 | = | 1906 | 91 | 70 | Yes |
| 16:00 - 17:00 | 889 | + | 1012 | = | 1901 | 94 | 62 | Yes |
| 17:00 - 18:00 | 941 | + | 940 | = | 1881 | 80 | 64 | Yes |
| 15:45 - 16:45 | 674 | + | 767 | = | 1441 | 70 | 40 | No |
| 07:15 - 08:15 | 812 | + | 603 | = | 1415 | 42 | 66 | No |
| 07:30 - 08:30 | 809 | + | 586 | = | 1395 | 51 | 67 | No |
| 07:00 - 08:00 | 763 | + | 621 | = | 1384 | 37 | 58 | No |
| 17:15 - 18:15 | 700 | + | 680 | = | 1380 | 52 | 41 | No |
| 07:45 - 08:45 | 731 | + | 594 | = | 1325 | 48 | 65 | No |
| | | | | | | | 60 | No |



# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Rice Creek (2026 Total)**

**Study Date : 1/24/2024**

# Signal Warrants - Summary

## Major Street Approaches

**Northbound: US-75**
Number of Lanes : 2+

Total Approach Volume: 3,673

**Southbound: US-75**
Number of Lanes :2+

Total Approach Volume: 3,527

## Minor Street Approaches

**Eastbound: Rice Creek Rd**
Number of Lanes :1

Total Approach Volume: 271

**Westbound: Rice Creek Rd**
Number of Lanes :1

Total Approach Volume: 244

## Warrant Summary (Rural Values Apply)

**Warrant 1 - Eight Hour Vehicular Volumes** ..... **Not Satisfied**

**Warrant 1A - Minimum Vehicular Volume** ..... **Not Satisfied**
Required volumes reached for 0 hours, 8 are needed

**Warrant 1B - Interruption of Continuous Traffic** ..... **Not Satisfied**
Required volumes reached for 4 hours, 8 are needed

**Warrant 1C - Combination of Warrants** ..... **Not Satisfied**
Required 1A volumes reached for 1 hours, 8 are needed
Required 1B volumes reached for 4 hours, 8 are needed

**Warrant 2 - Four Hour Volumes** ..... **Not Satisfied**
Number of hours (3) volumes exceed minimum < minimum required (4).

**Warrant 3 - Peak Hour** ..... **Satisfied**

**Warrant 3A - Peak Hour Delay** ..... **Not Satisfied**
Approach volumes on minor street don't exceed minimums for any one hour period. Delay data not evaluated.

**Warrant 3B - Peak Hour Volumes** ..... **Satisfied**
Volumes exceed minimums for at least one hour period.

**Warrant 4 - Pedestrian Volumes** ..... **Not Evaluated**

**Warrant 5 - School Crossing** ..... **Not Evaluated**

**Warrant 6 - Coordinated Signal System** ..... **Not Evaluated**

**Warrant 7 - Crash Experience** ..... **Not Evaluated**

**Warrant 8 - Roadway Network** ..... **Not Evaluated**

**Warrant 9 - Intersection Near a Grade Crossing** ..... **Not Evaluated**

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Rice Creek (2026 Total)**

**Study Date : 1/24/2024**

## Warrant 1A - Minimum Volumes

### Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

### Summary

Only 0 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **420**

Veh/Hr Minor = **105**

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 1044 | + | 1168 | = | 2212 | 96 | 71 | No |
| 16:30 - 17:30 | 1042 | + | 1161 | = | 2203 | 86 | 71 | No |
| 16:45 - 17:45 | 1055 | + | 1104 | = | 2159 | 91 | 70 | No |
| 16:00 - 17:00 | 1017 | + | 1140 | = | 2157 | 94 | 62 | No |
| 17:00 - 18:00 | 1073 | + | 1060 | = | 2133 | 80 | 64 | No |
| 15:45 - 16:45 | 770 | + | 863 | = | 1633 | 70 | 40 | No |
| 17:15 - 18:15 | 799 | + | 770 | = | 1569 | 52 | 41 | No |
| 07:15 - 08:15 | 874 | + | 656 | = | 1530 | 42 | 66 | No |
| 07:30 - 08:30 | 873 | + | 644 | = | 1517 | 51 | 67 | No |
| 07:00 - 08:00 | 823 | + | 669 | = | 1492 | 37 | 58 | No |
| 07:45 - 08:45 | 797 | + | 657 | = | 1454 | 48 | 65 | No |
| 08:00 - 09:00 | 760 | + | 658 | = | 1418 | 60 | 60 | No |
| 06:45 - 07:45 | 592 | + | 494 | = | 1086 | 27 | 42 | No |
| 15:30 - 16:30 | 514 | + | 563 | = | 1077 | 51 | 27 | No |
| 08:15 - 09:15 | 559 | + | 507 | = | 1066 | 46 | 37 | No |
| 17:30 - 18:30 | 534 | + | 476 | = | 1010 | 37 | 28 | No |
| 08:30 - 09:30 | 365 | + | 339 | = | 704 | 29 | 25 | No |
| 06:30 - 07:30 | 345 | + | 344 | = | 689 | 17 | 26 | No |
| 15:15 - 16:15 | 247 | + | 262 | = | 509 | 26 | 14 | No |
| 17:45 - 18:45 | 265 | + | 233 | = | 498 | 13 | 16 | No |
| 08:45 - 09:45 | 194 | + | 176 | = | 370 | 22 | 11 | No |
| 06:15 - 07:15 | 150 | + | 164 | = | 314 | 9 | 15 | No |
| 05:30 - 06:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 05:45 - 06:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 06:00 - 07:00 | 0 | | 0 | | 0 | 0 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Rice Creek (2026 Total)**

**Study Date : 1/24/2024**

## Warrant 1B - Interruption of Continuous Traffic

### Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

### Summary

Only 4 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **630**

Veh/Hr Minor = **53**

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:45 - 17:45 | 1055 | + | 1104 | = | 2159 | 91 | 70 | Yes |
| 15:45 - 16:45 | 770 | + | 863 | = | 1633 | 70 | 40 | Yes |
| 07:00 - 08:00 | 823 | + | 669 | = | 1492 | 37 | 58 | Yes |
| 08:00 - 09:00 | 760 | + | 658 | = | 1418 | 60 | 60 | Yes |
| 06:45 - 07:45 | 592 | + | 494 | = | 1086 | 27 | 42 | No |
| 15:30 - 16:30 | 514 | + | 563 | = | 1077 | 51 | 27 | No |
| 06:30 - 07:30 | 345 | + | 344 | = | 689 | 17 | 26 | No |
| 15:15 - 16:15 | 247 | + | 262 | = | 509 | 26 | 14 | No |
| 17:45 - 18:45 | 265 | + | 233 | = | 498 | 13 | 16 | No |
| 06:15 - 07:15 | 150 | + | 164 | = | 314 | 9 | 15 | No |
| 05:30 - 06:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 05:45 - 06:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 06:00 - 07:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 05:15 - 06:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 04:15 - 05:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 03:00 - 04:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:15 - 03:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 01:45 - 02:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:00 - 03:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:30 - 03:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:45 - 03:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 03:30 - 04:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 04:00 - 05:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 05:00 - 06:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 09:00 - 10:00 | 0 | | 0 | | 0 | 0 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Rice Creek (2026 Total)**

**Study Date : 1/24/2024**

## Warrant 1C Combination of Warrants

### Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

### Summary

Only 1 hours meet 1A minimums.
Only 4 hours meet 1B minimums.
Warrant is NOT met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

### Volume Requirements

Rural Factor of 70% applied

| Warrant | 1A | 1B |
|---|---|---|
| Veh/Hr Major = | **336** | **504** |
| Veh/Hr Minor = | **84** | **42** |

**Major Road: US-75** | **Minor Road: Rice Creek Rd**

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1A? |
|---|---|---|---|---|---|---|---|---|
| 16:00 - 17:00 | 1017 | + | 1140 | = | 2157 | 94 | 62 | Yes |
| 17:00 - 18:00 | 1073 | + | 1060 | = | 2133 | 80 | 64 | No |
| 15:45 - 16:45 | 770 | + | 863 | = | 1633 | 70 | 40 | No |
| 17:15 - 18:15 | 799 | + | 770 | = | 1569 | 52 | 41 | No |
| 07:15 - 08:15 | 874 | + | 656 | = | 1530 | 42 | 66 | No |
| 07:30 - 08:30 | 873 | + | 644 | = | 1517 | 51 | 67 | No |
| 07:00 - 08:00 | 823 | + | 669 | = | 1492 | 37 | 58 | No |
| 07:45 - 08:45 | 797 | + | 657 | = | 1454 | 48 | 65 | No |
| 08:00 - 09:00 | 760 | + | 658 | = | 1418 | 60 | 60 | No |
| 06:45 - 07:45 | 592 | + | 494 | = | 1086 | 27 | 42 | No |
| 15:30 - 16:30 | 514 | + | 563 | = | 1077 | 51 | 27 | No |
| 08:15 - 09:15 | 559 | + | 507 | = | 1066 | 46 | 37 | No |

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1B? |
|---|---|---|---|---|---|---|---|---|
| 16:30 - 17:30 | 1042 | + | 1161 | = | 2203 | 86 | 71 | Yes |
| 07:45 - 08:45 | 797 | + | 657 | = | 1454 | 48 | 65 | Yes |
| 06:45 - 07:45 | 592 | + | 494 | = | 1086 | 27 | 42 | Yes |
| 15:30 - 16:30 | 514 | + | 563 | = | 1077 | 51 | 27 | Yes |
| 17:30 - 18:30 | 534 | + | 476 | = | 1010 | 37 | 28 | No |
| 06:30 - 07:30 | 345 | + | 344 | = | 689 | 17 | 26 | No |
| 15:15 - 16:15 | 247 | + | 262 | = | 509 | 26 | 14 | No |
| 17:45 - 18:45 | 265 | + | 233 | = | 498 | 13 | 16 | No |
| 08:45 - 09:45 | 194 | + | 176 | = | 370 | 22 | 11 | No |
| 06:15 - 07:15 | 150 | + | 164 | = | 314 | 9 | 15 | No |
| 04:45 - 05:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 05:00 - 06:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Rice Creek (2026 Total)**

**Study Date : 1/24/2024**

## Warrant 2 - Four Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

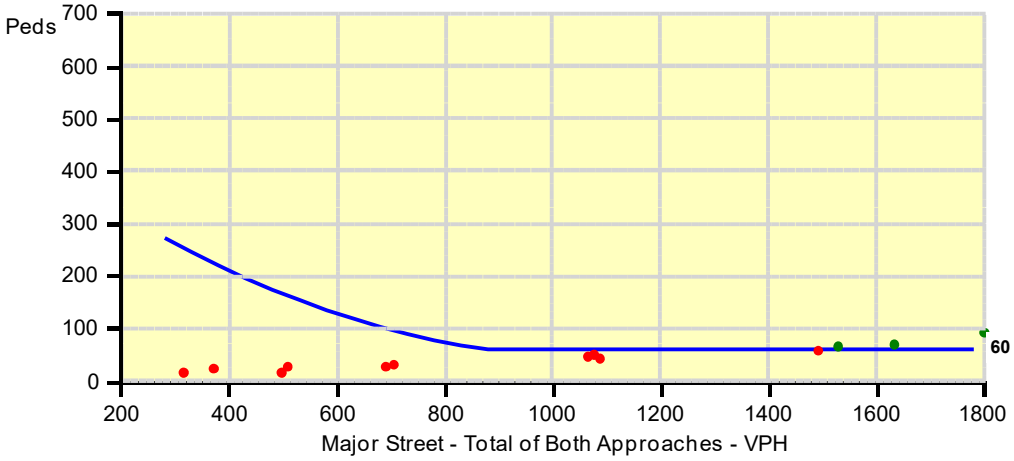
### Summary

Only 3 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:45 - 17:45 | 1055 | + | 1104 | = | 2159 | 91 | 70 | Yes |
| 15:45 - 16:45 | 770 | + | 863 | = | 1633 | 70 | 40 | Yes |
| 07:15 - 08:15 | 874 | + | 656 | = | 1530 | 42 | 66 | Yes |
| 07:00 - 08:00 | 823 | + | 669 | = | 1492 | 37 | 58 | No |
| 06:45 - 07:45 | 592 | + | 494 | = | 1086 | 27 | 42 | No |
| 15:30 - 16:30 | 514 | + | 563 | = | 1077 | 51 | 27 | No |
| 08:15 - 09:15 | 559 | + | 507 | = | 1066 | 46 | 37 | No |
| 08:30 - 09:30 | 365 | + | 339 | = | 704 | 29 | 25 | No |
| 06:30 - 07:30 | 345 | + | 344 | = | 689 | 17 | 26 | No |
| 15:15 - 16:15 | 247 | + | 262 | = | 509 | 26 | 14 | No |
| 17:45 - 18:45 | 265 | + | 233 | = | 498 | 13 | 16 | No |
| | | | | | | | 11 | No |



# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Rice Creek (2026 Total)**

**Study Date : 1/24/2024**

## Warrant 3A - Peak Hour Delay

### Description

Intended for sites where for one hour of the day minor street traffic suffers undue traffic delay entering or crossing the major street.

### Summary

16 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Number of Minor Lanes = **1**

### Volume and Delay Requirements

Veh/Hr All Approaches = **800**
Veh/Hr Minor = **100**
Total Delay (Veh-Hrs) = **4**

| | Major Road | | Minor Road | | | | | |
|---|---|---|---|---|---|---|---|---|
| | US-75 | | Rice Creek Rd | | | | | |
| Time | Total of All Approaches | Met? | Minor EB | Delay EB | Met? | Minor WB | Delay WB | Met? | Warrant Met? |
| 16:15 - 17:15 | 2379 | Yes | 96 | - | No | 71 | - | --- | No |
| 16:30 - 17:30 | 2360 | Yes | 86 | - | No | 71 | - | --- | No |
| 16:45 - 17:45 | 2320 | Yes | 91 | - | No | 70 | - | --- | No |
| 16:00 - 17:00 | 2313 | Yes | 94 | - | No | 62 | - | --- | No |
| 17:00 - 18:00 | 2277 | Yes | 80 | - | No | 64 | - | --- | No |
| 15:45 - 16:45 | 1743 | Yes | 70 | - | No | 40 | - | --- | No |
| 17:15 - 18:15 | 1662 | Yes | 52 | - | No | 41 | - | --- | No |
| 07:15 - 08:15 | 1638 | Yes | 42 | - | --- | 66 | - | No | No |
| 07:30 - 08:30 | 1635 | Yes | 51 | - | --- | 67 | - | No | No |
| 07:00 - 08:00 | 1587 | Yes | 37 | - | --- | 58 | - | No | No |
| 07:45 - 08:45 | 1567 | Yes | 48 | - | --- | 65 | - | No | No |
| 08:00 - 09:00 | 1538 | Yes | 60 | - | --- | 60 | - | No | No |
| 06:45 - 07:45 | 1155 | Yes | 27 | - | --- | 42 | - | No | No |
| 15:30 - 16:30 | 1155 | Yes | 51 | - | No | 27 | - | --- | No |
| 08:15 - 09:15 | 1149 | Yes | 46 | - | No | 37 | - | --- | No |
| 17:30 - 18:30 | 1075 | Yes | 37 | - | No | 28 | - | --- | No |
| 08:30 - 09:30 | 758 | No | 29 | - | No | 25 | - | --- | No |
| 06:30 - 07:30 | 732 | No | 17 | - | --- | 26 | - | No | No |
| 15:15 - 16:15 | 549 | No | 26 | - | No | 14 | - | --- | No |
| 17:45 - 18:45 | 527 | No | 13 | - | --- | 16 | - | No | No |
| 08:45 - 09:45 | 403 | No | 22 | - | No | 11 | - | --- | No |
| 06:15 - 07:15 | 338 | No | 9 | - | --- | 15 | - | No | No |
| 05:30 - 06:30 | 0 | No | 0 | - | --- | 0 | - | No | No |
| 05:45 - 06:45 | 0 | No | 0 | - | --- | 0 | - | No | No |
| 06:00 - 07:00 | 0 | No | 0 | - | --- | 0 | - | No | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2026 Total Conditions

**Study Name: T-3110 Rice Creek (2026 Total)**

**Study Date : 1/24/2024**

## Warrant 3B - Peak Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

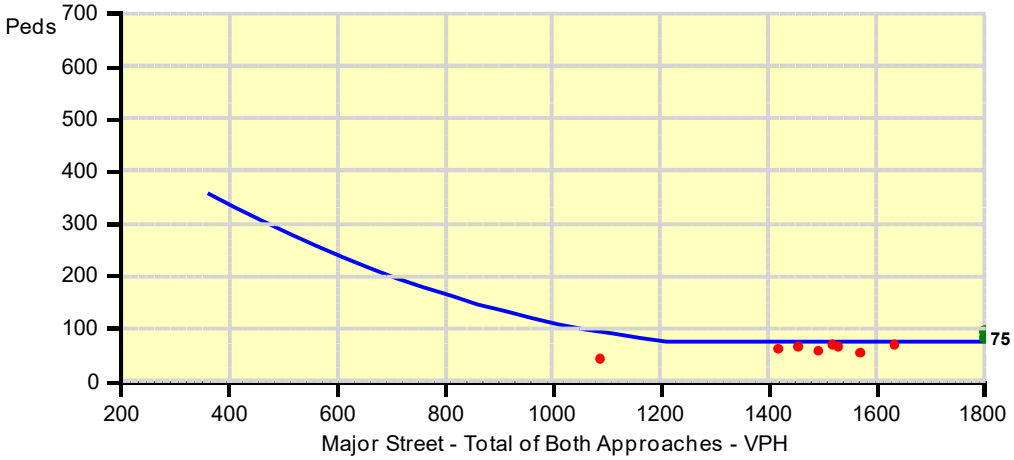
### Summary

5 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 1044 | + | 1168 | = | 2212 | 96 | 71 | Yes |
| 16:30 - 17:30 | 1042 | + | 1161 | = | 2203 | 86 | 71 | Yes |
| 16:45 - 17:45 | 1055 | + | 1104 | = | 2159 | 91 | 70 | Yes |
| 16:00 - 17:00 | 1017 | + | 1140 | = | 2157 | 94 | 62 | Yes |
| 17:00 - 18:00 | 1073 | + | 1060 | = | 2133 | 80 | 64 | Yes |
| 15:45 - 16:45 | 770 | + | 863 | = | 1633 | 70 | 40 | No |
| 17:15 - 18:15 | 799 | + | 770 | = | 1569 | 52 | 41 | No |
| 07:15 - 08:15 | 874 | + | 656 | = | 1530 | 42 | 66 | No |
| 07:30 - 08:30 | 873 | + | 644 | = | 1517 | 51 | 67 | No |
| 07:00 - 08:00 | 823 | + | 669 | = | 1492 | 37 | 58 | No |
| 07:45 - 08:45 | 797 | + | 657 | = | 1454 | 48 | 65 | No |
| | | | | | | | 60 | No |



# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2046 Future Background Conditions

**Study Name: T-3110 Rice Creek (2046 Background)**

**Study Date : 1/24/2024**

# Signal Warrants - Summary

## Major Street Approaches

**Northbound: US-75**
Number of Lanes : 2+

Total Approach Volume: 5,616

**Southbound: US-75**
Number of Lanes :2+

Total Approach Volume: 5,402

## Minor Street Approaches

**Eastbound: Rice Creek Rd**
Number of Lanes :1

Total Approach Volume: 437

**Westbound: Rice Creek Rd**
Number of Lanes :1

Total Approach Volume: 391

## Warrant Summary (Rural Values Apply)

**Warrant 1 - Eight Hour Vehicular Volumes**..... **Not Satisfied**

**Warrant 1A - Minimum Vehicular Volume**..... **Not Satisfied**
Required volumes reached for 3 hours, 8 are needed

**Warrant 1B - Interruption of Continuous Traffic**..... **Not Satisfied**
Required volumes reached for 5 hours, 8 are needed

**Warrant 1C - Combination of Warrants**..... **Not Satisfied**
Required 1A volumes reached for 4 hours, 8 are needed
Required 1B volumes reached for 5 hours, 8 are needed

**Warrant 2 - Four Hour Volumes**..... **Satisfied**
Number of hours (5) volumes exceed minimum >= minimum required (4).

**Warrant 3 - Peak Hour**..... **Satisfied**

**Warrant 3A - Peak Hour Delay**..... **Satisfied**
Number of one hour periods (9) volumes exceed minimum >= required (1). Delay data not evaluated.

**Warrant 3B - Peak Hour Volumes**..... **Satisfied**
Volumes exceed minimums for at least one hour period.

**Warrant 4 - Pedestrian Volumes**..... Not Evaluated

**Warrant 5 - School Crossing**..... Not Evaluated

**Warrant 6 - Coordinated Signal System**..... Not Evaluated

**Warrant 7 - Crash Experience**..... Not Evaluated

**Warrant 8 - Roadway Network**..... Not Evaluated

**Warrant 9 - Intersection Near a Grade Crossing**..... Not Evaluated

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2046 Future Background Conditions

**Study Name: T-3110 Rice Creek (2046 Background)**

**Study Date : 1/24/2024**

## Warrant 1A - Minimum Volumes

### Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

### Summary

Only 3 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **420**

Veh/Hr Minor = **105**

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:45 - 17:45 | 1581 | + | 1681 | = | 3262 | 148 | 113 | Yes |
| 15:45 - 16:45 | 1154 | + | 1312 | = | 2466 | 115 | 64 | Yes |
| 07:15 - 08:15 | 1390 | + | 1025 | = | 2415 | 64 | 106 | Yes |
| 07:00 - 08:00 | 1304 | + | 1058 | = | 2362 | 58 | 92 | No |
| 06:45 - 07:45 | 935 | + | 780 | = | 1715 | 44 | 66 | No |
| 08:15 - 09:15 | 865 | + | 777 | = | 1642 | 72 | 58 | No |
| 15:30 - 16:30 | 771 | + | 854 | = | 1625 | 84 | 44 | No |
| 08:30 - 09:30 | 563 | + | 521 | = | 1084 | 46 | 38 | No |
| 06:30 - 07:30 | 538 | + | 545 | = | 1083 | 28 | 40 | No |
| 15:15 - 16:15 | 368 | + | 394 | = | 762 | 43 | 22 | No |
| 17:45 - 18:45 | 397 | + | 347 | = | 744 | 22 | 26 | No |
| 08:45 - 09:45 | 301 | + | 272 | = | 573 | 36 | 16 | No |
| 06:15 - 07:15 | 229 | + | 260 | = | 489 | 16 | 24 | No |
| 05:30 - 06:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 05:45 - 06:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 06:00 - 07:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 05:15 - 06:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 04:15 - 05:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 03:00 - 04:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:15 - 03:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 01:45 - 02:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:00 - 03:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:30 - 03:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:45 - 03:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 03:30 - 04:30 | 0 | | 0 | | 0 | 0 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2046 Future Background Conditions

**Study Name: T-3110 Rice Creek (2046 Background)**

**Study Date : 1/24/2024**

## Warrant 1B - Interruption of Continuous Traffic

### Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

### Summary

Only 5 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **630**

Veh/Hr Minor = **53**

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:30 - 17:30 | 1559 | + | 1775 | = | 3334 | 139 | 115 | Yes |
| 07:45 - 08:45 | 1248 | + | 1010 | = | 2258 | 72 | 106 | Yes |
| 06:45 - 07:45 | 935 | + | 780 | = | 1715 | 44 | 66 | Yes |
| 15:30 - 16:30 | 771 | + | 854 | = | 1625 | 84 | 44 | Yes |
| 17:30 - 18:30 | 802 | + | 711 | = | 1513 | 62 | 44 | Yes |
| 06:30 - 07:30 | 538 | + | 545 | = | 1083 | 28 | 40 | No |
| 15:15 - 16:15 | 368 | + | 394 | = | 762 | 43 | 22 | No |
| 08:45 - 09:45 | 301 | + | 272 | = | 573 | 36 | 16 | No |
| 06:15 - 07:15 | 229 | + | 260 | = | 489 | 16 | 24 | No |
| 03:15 - 04:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 03:30 - 04:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 03:45 - 04:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 03:00 - 04:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:00 - 03:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 01:00 - 02:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 00:45 - 01:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 00:30 - 01:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 22:45 - 23:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 23:15 - 00:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 23:30 - 00:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 01:15 - 02:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 04:00 - 05:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 04:15 - 05:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 04:30 - 05:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 04:45 - 05:45 | 0 | | 0 | | 0 | 0 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2046 Future Background Conditions

**Study Name: T-3110 Rice Creek (2046 Background)**

**Study Date : 1/24/2024**

## Warrant 1C Combination of Warrants

### Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

### Summary

Only 4 hours meet 1A minimums.
Only 5 hours meet 1B minimums.
Warrant is NOT met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

### Volume Requirements

Rural Factor of 70% applied

| Warrant | 1A | 1B |
|---|---|---|
| Veh/Hr Major = | **336** | **504** |
| Veh/Hr Minor = | **84** | **42** |

**Major Road: US-75** | **Minor Road: Rice Creek Rd**

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1A? |
|---|---|---|---|---|---|---|---|---|
| 16:30 - 17:30 | 1559 | + | 1775 | = | 3334 | 139 | 115 | Yes |
| 07:00 - 08:00 | 1304 | + | 1058 | = | 2362 | 58 | 92 | Yes |
| 08:00 - 09:00 | 1180 | + | 1004 | = | 2184 | 94 | 96 | Yes |
| 15:30 - 16:30 | 771 | + | 854 | = | 1625 | 84 | 44 | Yes |
| 06:45 - 07:45 | 935 | + | 780 | = | 1715 | 44 | 66 | No |
| 17:30 - 18:30 | 802 | + | 711 | = | 1513 | 62 | 44 | No |
| 06:30 - 07:30 | 538 | + | 545 | = | 1083 | 28 | 40 | No |
| 15:15 - 16:15 | 368 | + | 394 | = | 762 | 43 | 22 | No |
| 17:45 - 18:45 | 397 | + | 347 | = | 744 | 22 | 26 | No |
| 06:15 - 07:15 | 229 | + | 260 | = | 489 | 16 | 24 | No |
| 02:15 - 03:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:30 - 03:30 | 0 | | 0 | | 0 | 0 | 0 | No |

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1B? |
|---|---|---|---|---|---|---|---|---|
| 16:15 - 17:15 | 1565 | + | 1782 | = | 3347 | 156 | 117 | Yes |
| 17:15 - 18:15 | 1199 | + | 1164 | = | 2363 | 86 | 64 | Yes |
| 07:45 - 08:45 | 1248 | + | 1010 | = | 2258 | 72 | 106 | Yes |
| 06:45 - 07:45 | 935 | + | 780 | = | 1715 | 44 | 66 | Yes |
| 15:15 - 16:15 | 368 | + | 394 | = | 762 | 43 | 22 | Yes |
| 06:30 - 07:30 | 538 | + | 545 | = | 1083 | 28 | 40 | No |
| 08:45 - 09:45 | 301 | + | 272 | = | 573 | 36 | 16 | No |
| 06:15 - 07:15 | 229 | + | 260 | = | 489 | 16 | 24 | No |
| 02:30 - 03:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:45 - 03:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 03:00 - 04:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 03:15 - 04:15 | 0 | | 0 | | 0 | 0 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2046 Future Background Conditions

**Study Name: T-3110 Rice Creek (2046 Background)**

**Study Date : 1/24/2024**

## Warrant 2 - Four Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

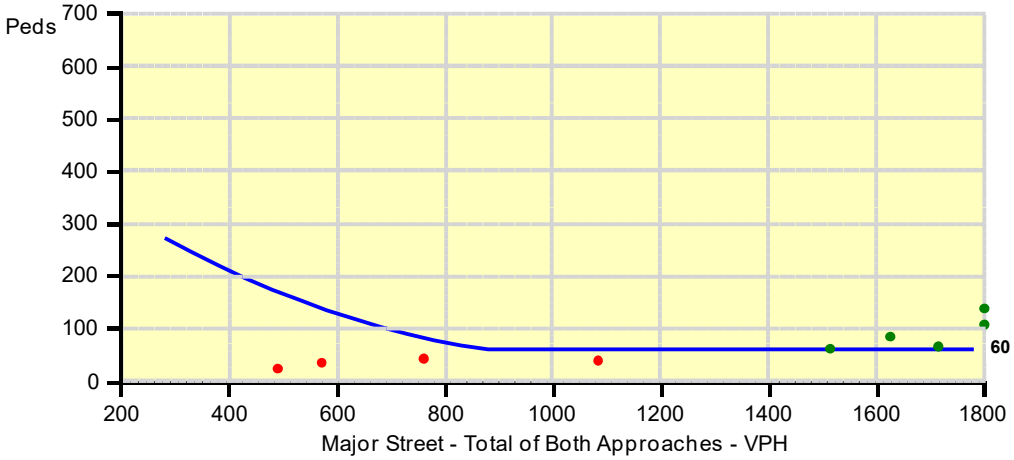
### Summary

5 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:30 - 17:30 | 1559 | + | 1775 | = | 3334 | 139 | 115 | Yes |
| 07:45 - 08:45 | 1248 | + | 1010 | = | 2258 | 72 | 106 | Yes |
| 06:45 - 07:45 | 935 | + | 780 | = | 1715 | 44 | 66 | Yes |
| 15:30 - 16:30 | 771 | + | 854 | = | 1625 | 84 | 44 | Yes |
| 17:30 - 18:30 | 802 | + | 711 | = | 1513 | 62 | 44 | Yes |
| 06:30 - 07:30 | 538 | + | 545 | = | 1083 | 28 | 40 | No |
| 15:15 - 16:15 | 368 | + | 394 | = | 762 | 43 | 22 | No |
| 08:45 - 09:45 | 301 | + | 272 | = | 573 | 36 | 16 | No |
| 06:15 - 07:15 | 229 | + | 260 | = | 489 | 16 | 24 | No |
| 02:00 - 03:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:15 - 03:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| | | | | | | | 0 | No |



# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2046 Future Background Conditions

**Study Name: T-3110 Rice Creek (2046 Background)**

**Study Date : 1/24/2024**

## Warrant 3A - Peak Hour Delay

### Description

Intended for sites where for one hour of the day minor street traffic suffers undue traffic delay entering or crossing the major street.

### Summary

19 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

Number of Minor Lanes = **1**

### Volume and Delay Requirements

Veh/Hr All Approaches = **800**
Veh/Hr Minor = **100**
Total Delay (Veh-Hrs) = **4**

| | Major Road | | Minor Road | | | | | |
|---|---|---|---|---|---|---|---|---|
| | US-75 | | Rice Creek Rd | | | | | |
| Time | Total of All Approaches | Met? | Minor EB | Delay EB | Met? | Minor WB | Delay WB | Met? | Warrant Met? |
| 16:15 - 17:15 | 3620 | Yes | 156 | - | Yes | 117 | - | --- | Yes |
| 16:30 - 17:30 | 3588 | Yes | 139 | - | Yes | 115 | - | --- | Yes |
| 16:45 - 17:45 | 3523 | Yes | 148 | - | Yes | 113 | - | --- | Yes |
| 16:00 - 17:00 | 3507 | Yes | 154 | - | Yes | 101 | - | --- | Yes |
| 17:00 - 18:00 | 3453 | Yes | 131 | - | Yes | 102 | - | --- | Yes |
| 15:45 - 16:45 | 2645 | Yes | 115 | - | Yes | 64 | - | --- | Yes |
| 07:15 - 08:15 | 2585 | Yes | 64 | - | --- | 106 | - | Yes | Yes |
| 07:30 - 08:30 | 2567 | Yes | 78 | - | --- | 110 | - | Yes | Yes |
| 07:45 - 08:45 | 2436 | Yes | 72 | - | --- | 106 | - | Yes | Yes |
| 17:15 - 18:15 | 2513 | Yes | 86 | - | No | 64 | - | --- | No |
| 07:00 - 08:00 | 2512 | Yes | 58 | - | --- | 92 | - | No | No |
| 08:00 - 09:00 | 2374 | Yes | 94 | - | --- | 96 | - | No | No |
| 06:45 - 07:45 | 1825 | Yes | 44 | - | --- | 66 | - | No | No |
| 08:15 - 09:15 | 1772 | Yes | 72 | - | No | 58 | - | --- | No |
| 15:30 - 16:30 | 1753 | Yes | 84 | - | No | 44 | - | --- | No |
| 17:30 - 18:30 | 1619 | Yes | 62 | - | No | 44 | - | --- | No |
| 08:30 - 09:30 | 1168 | Yes | 46 | - | No | 38 | - | --- | No |
| 06:30 - 07:30 | 1151 | Yes | 28 | - | --- | 40 | - | No | No |
| 15:15 - 16:15 | 827 | Yes | 43 | - | No | 22 | - | --- | No |
| 17:45 - 18:45 | 792 | No | 22 | - | --- | 26 | - | No | No |
| 08:45 - 09:45 | 625 | No | 36 | - | No | 16 | - | --- | No |
| 06:15 - 07:15 | 529 | No | 16 | - | --- | 24 | - | No | No |
| 05:30 - 06:30 | 0 | No | 0 | - | --- | 0 | - | No | No |
| 05:45 - 06:45 | 0 | No | 0 | - | --- | 0 | - | No | No |
| 06:00 - 07:00 | 0 | No | 0 | - | --- | 0 | - | No | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2046 Future Background Conditions

**Study Name: T-3110 Rice Creek (2046 Background)**

**Study Date : 1/24/2024**

## Warrant 3B - Peak Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

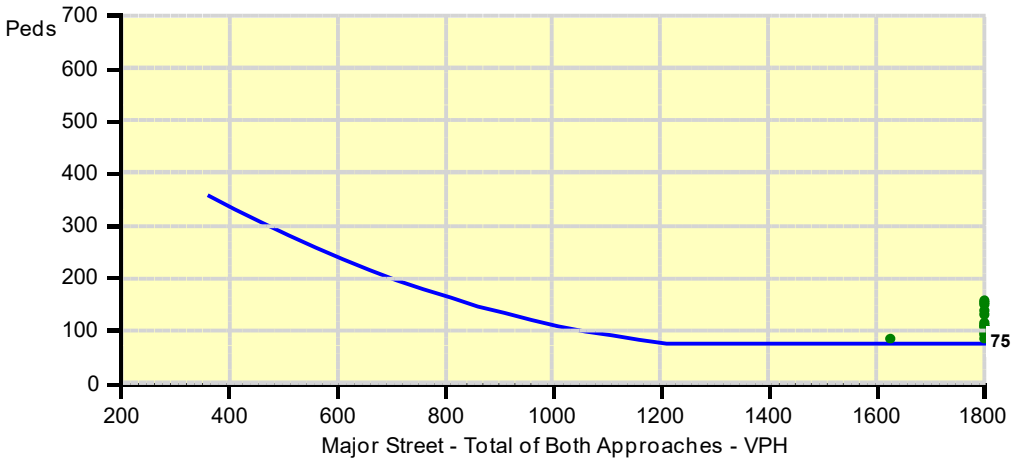
### Summary

13 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 1565 | + | 1782 | = | 3347 | 156 | 117 | Yes |
| 16:30 - 17:30 | 1559 | + | 1775 | = | 3334 | 139 | 115 | Yes |
| 16:45 - 17:45 | 1581 | + | 1681 | = | 3262 | 148 | 113 | Yes |
| 16:00 - 17:00 | 1521 | + | 1731 | = | 3252 | 154 | 101 | Yes |
| 17:00 - 18:00 | 1611 | + | 1609 | = | 3220 | 131 | 102 | Yes |
| 15:45 - 16:45 | 1154 | + | 1312 | = | 2466 | 115 | 64 | Yes |
| 07:15 - 08:15 | 1390 | + | 1025 | = | 2415 | 64 | 106 | Yes |
| 07:30 - 08:30 | 1383 | + | 996 | = | 2379 | 78 | 110 | Yes |
| 17:15 - 18:15 | 1199 | + | 1164 | = | 2363 | 86 | 64 | Yes |
| 07:00 - 08:00 | 1304 | + | 1058 | = | 2362 | 58 | 92 | Yes |
| 07:45 - 08:45 | 1248 | + | 1010 | = | 2258 | 72 | 106 | Yes |
| | | | | | | | 96 | Yes |



# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Rice Creek (2046 Total)**

**Study Date : 1/24/2024**

# Signal Warrants - Summary

## Major Street Approaches

**Northbound: US-75**
Number of Lanes : 2+

Total Approach Volume: 6,004

**Southbound: US-75**
Number of Lanes :2+

Total Approach Volume: 5,766

## Minor Street Approaches

**Eastbound: Rice Creek Rd**
Number of Lanes :1

Total Approach Volume: 437

**Westbound: Rice Creek Rd**
Number of Lanes :1

Total Approach Volume: 391

## Warrant Summary (Rural Values Apply)

**Warrant 1 - Eight Hour Vehicular Volumes**..... **Not Satisfied**

**Warrant 1A - Minimum Vehicular Volume**..... **Not Satisfied**
Required volumes reached for 3 hours, 8 are needed

**Warrant 1B - Interruption of Continuous Traffic**..... **Not Satisfied**
Required volumes reached for 5 hours, 8 are needed

**Warrant 1C - Combination of Warrants**..... **Not Satisfied**
Required 1A volumes reached for 4 hours, 8 are needed
Required 1B volumes reached for 5 hours, 8 are needed

**Warrant 2 - Four Hour Volumes**..... **Satisfied**
Number of hours (5) volumes exceed minimum >= minimum required (4).

**Warrant 3 - Peak Hour**..... **Satisfied**

**Warrant 3A - Peak Hour Delay**..... **Satisfied**
Number of one hour periods (9) volumes exceed minimum >= required (1). Delay data not evaluated.

**Warrant 3B - Peak Hour Volumes**..... **Satisfied**
Volumes exceed minimums for at least one hour period.

**Warrant 4 - Pedestrian Volumes**..... **Not Evaluated**

**Warrant 5 - School Crossing**..... **Not Evaluated**

**Warrant 6 - Coordinated Signal System**..... **Not Evaluated**

**Warrant 7 - Crash Experience**..... **Not Evaluated**

**Warrant 8 - Roadway Network**..... **Not Evaluated**

**Warrant 9 - Intersection Near a Grade Crossing**..... **Not Evaluated**

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Rice Creek (2046 Total)**

**Study Date : 1/24/2024**

## Warrant 1A - Minimum Volumes

### Description

Intended for sites where the volume of intersecting traffic is the principal reason for consideration of a signal installation.

### Summary

Only 3 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **420**

Veh/Hr Minor = **105**

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:45 - 17:45 | 1712 | + | 1803 | = | 3515 | 148 | 113 | Yes |
| 15:45 - 16:45 | 1250 | + | 1408 | = | 2658 | 115 | 64 | Yes |
| 07:15 - 08:15 | 1452 | + | 1078 | = | 2530 | 64 | 106 | Yes |
| 07:00 - 08:00 | 1364 | + | 1106 | = | 2470 | 58 | 92 | No |
| 06:45 - 07:45 | 980 | + | 816 | = | 1796 | 44 | 66 | No |
| 15:30 - 16:30 | 835 | + | 918 | = | 1753 | 84 | 44 | No |
| 08:15 - 09:15 | 916 | + | 828 | = | 1744 | 72 | 58 | No |
| 08:30 - 09:30 | 597 | + | 555 | = | 1152 | 46 | 38 | No |
| 06:30 - 07:30 | 568 | + | 569 | = | 1137 | 28 | 40 | No |
| 15:15 - 16:15 | 400 | + | 426 | = | 826 | 43 | 22 | No |
| 17:45 - 18:45 | 430 | + | 377 | = | 807 | 22 | 26 | No |
| 08:45 - 09:45 | 318 | + | 289 | = | 607 | 36 | 16 | No |
| 06:15 - 07:15 | 244 | + | 272 | = | 516 | 16 | 24 | No |
| 05:30 - 06:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 05:45 - 06:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 06:00 - 07:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 09:00 - 10:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 09:15 - 10:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 05:15 - 06:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 04:15 - 05:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 09:30 - 10:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 09:45 - 10:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 10:00 - 11:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 03:15 - 04:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:15 - 03:15 | 0 | | 0 | | 0 | 0 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Rice Creek (2046 Total)**

**Study Date : 1/24/2024**

## Warrant 1B - Interruption of Continuous Traffic

### Description

Intended for sites where the volume of the major street is so heavy that traffic on the minor street suffers excessive delay or hazard.

### Summary

Only 5 one hour periods meet minimums.
Warrant is NOT met.

### Site Data Required

Rural Settings Apply = **True**
Number of Major Lanes = **2 or more**
Number of Minor Lanes = **1**

### Volume Requirements

Rural Factor of 70 % applied
Veh/Hr Major = **630**

Veh/Hr Minor = **53**

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:30 - 17:30 | 1689 | + | 1899 | = | 3588 | 139 | 115 | Yes |
| 07:45 - 08:45 | 1314 | + | 1073 | = | 2387 | 72 | 106 | Yes |
| 06:45 - 07:45 | 980 | + | 816 | = | 1796 | 44 | 66 | Yes |
| 15:30 - 16:30 | 835 | + | 918 | = | 1753 | 84 | 44 | Yes |
| 17:30 - 18:30 | 868 | + | 771 | = | 1639 | 62 | 44 | Yes |
| 06:30 - 07:30 | 568 | + | 569 | = | 1137 | 28 | 40 | No |
| 15:15 - 16:15 | 400 | + | 426 | = | 826 | 43 | 22 | No |
| 08:45 - 09:45 | 318 | + | 289 | = | 607 | 36 | 16 | No |
| 06:15 - 07:15 | 244 | + | 272 | = | 516 | 16 | 24 | No |
| 03:15 - 04:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 03:30 - 04:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 03:45 - 04:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 03:00 - 04:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:00 - 03:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 01:00 - 02:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 00:45 - 01:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 00:30 - 01:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 23:00 - 00:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 23:15 - 00:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 23:30 - 00:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 01:30 - 02:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 01:45 - 02:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:45 - 03:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 04:00 - 05:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 04:15 - 05:15 | 0 | | 0 | | 0 | 0 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Rice Creek (2046 Total)**

**Study Date : 1/24/2024**

## Warrant 1C Combination of Warrants

### Description

Intended for sites where the traffic volumes don't meet individual warrants but where Warrants 1A and 1B are both met to 80% of their stated values.

### Summary

Only 4 hours meet 1A minimums.
Only 5 hours meet 1B minimums.
Warrant is NOT met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

### Volume Requirements

Rural Factor of 70% applied

| Warrant | 1A | 1B |
|---|---|---|
| Veh/Hr Major = | **336** | **504** |
| Veh/Hr Minor = | **84** | **42** |

**Major Road: US-75** | **Minor Road: Rice Creek Rd**

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1A? |
|---|---|---|---|---|---|---|---|---|
| 16:30 - 17:30 | 1689 | + | 1899 | = | 3588 | 139 | 115 | Yes |
| 07:00 - 08:00 | 1364 | + | 1106 | = | 2470 | 58 | 92 | Yes |
| 08:00 - 09:00 | 1248 | + | 1072 | = | 2320 | 94 | 96 | Yes |
| 15:30 - 16:30 | 835 | + | 918 | = | 1753 | 84 | 44 | Yes |
| 06:45 - 07:45 | 980 | + | 816 | = | 1796 | 44 | 66 | No |
| 17:30 - 18:30 | 868 | + | 771 | = | 1639 | 62 | 44 | No |
| 06:30 - 07:30 | 568 | + | 569 | = | 1137 | 28 | 40 | No |
| 15:15 - 16:15 | 400 | + | 426 | = | 826 | 43 | 22 | No |
| 17:45 - 18:45 | 430 | + | 377 | = | 807 | 22 | 26 | No |
| 06:15 - 07:15 | 244 | + | 272 | = | 516 | 16 | 24 | No |
| 02:15 - 03:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:30 - 03:30 | 0 | | 0 | | 0 | 0 | 0 | No |

| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met1B? |
|---|---|---|---|---|---|---|---|---|
| 16:15 - 17:15 | 1694 | + | 1908 | = | 3602 | 156 | 117 | Yes |
| 17:15 - 18:15 | 1298 | + | 1254 | = | 2552 | 86 | 64 | Yes |
| 07:45 - 08:45 | 1314 | + | 1073 | = | 2387 | 72 | 106 | Yes |
| 06:45 - 07:45 | 980 | + | 816 | = | 1796 | 44 | 66 | Yes |
| 15:15 - 16:15 | 400 | + | 426 | = | 826 | 43 | 22 | Yes |
| 06:30 - 07:30 | 568 | + | 569 | = | 1137 | 28 | 40 | No |
| 08:45 - 09:45 | 318 | + | 289 | = | 607 | 36 | 16 | No |
| 06:15 - 07:15 | 244 | + | 272 | = | 516 | 16 | 24 | No |
| 02:30 - 03:30 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:45 - 03:45 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 03:00 - 04:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 03:15 - 04:15 | 0 | | 0 | | 0 | 0 | 0 | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Rice Creek (2046 Total)**

**Study Date : 1/24/2024**

## Warrant 2 - Four Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during any four hours of the day is the principal reason for consideration of a signal installation.

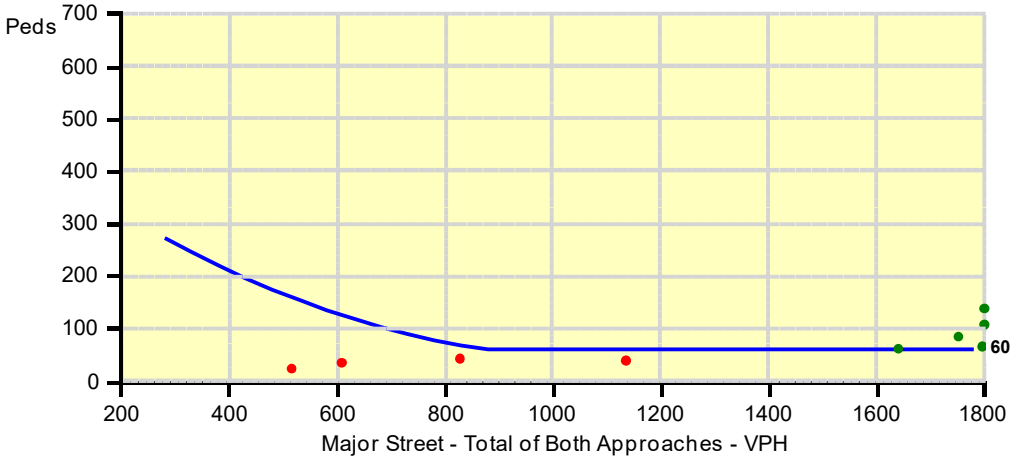
### Summary

5 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:30 - 17:30 | 1689 | + | 1899 | = | 3588 | 139 | 115 | Yes |
| 07:45 - 08:45 | 1314 | + | 1073 | = | 2387 | 72 | 106 | Yes |
| 06:45 - 07:45 | 980 | + | 816 | = | 1796 | 44 | 66 | Yes |
| 15:30 - 16:30 | 835 | + | 918 | = | 1753 | 84 | 44 | Yes |
| 17:30 - 18:30 | 868 | + | 771 | = | 1639 | 62 | 44 | Yes |
| 06:30 - 07:30 | 568 | + | 569 | = | 1137 | 28 | 40 | No |
| 15:15 - 16:15 | 400 | + | 426 | = | 826 | 43 | 22 | No |
| 08:45 - 09:45 | 318 | + | 289 | = | 607 | 36 | 16 | No |
| 06:15 - 07:15 | 244 | + | 272 | = | 516 | 16 | 24 | No |
| 02:00 - 03:00 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| 02:15 - 03:15 | 0 | + | 0 | = | 0 | 0 | 0 | No |
| | | | | | | | 0 | No |



# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Rice Creek (2046 Total)**

**Study Date : 1/24/2024**

## Warrant 3A - Peak Hour Delay

### Description

Intended for sites where for one hour of the day minor street traffic suffers undue traffic delay entering or crossing the major street.

### Summary

20 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

Number of Minor Lanes = **1**

### Volume and Delay Requirements

Veh/Hr All Approaches = **800**
Veh/Hr Minor = **100**
Total Delay (Veh-Hrs) = **4**

| | Major Road | | Minor Road | | | | | |
|---|---|---|---|---|---|---|---|---|
| | US-75 | | Rice Creek Rd | | | | | |
| Time | Total of All Approaches | Met? | Minor EB | Delay EB | Met? | Minor WB | Delay WB | Met? | Warrant Met? |
| 16:15 - 17:15 | 3875 | Yes | 156 | - | Yes | 117 | - | --- | Yes |
| 16:30 - 17:30 | 3842 | Yes | 139 | - | Yes | 115 | - | --- | Yes |
| 16:45 - 17:45 | 3776 | Yes | 148 | - | Yes | 113 | - | --- | Yes |
| 16:00 - 17:00 | 3763 | Yes | 154 | - | Yes | 101 | - | --- | Yes |
| 17:00 - 18:00 | 3705 | Yes | 131 | - | Yes | 102 | - | --- | Yes |
| 15:45 - 16:45 | 2837 | Yes | 115 | - | Yes | 64 | - | --- | Yes |
| 07:15 - 08:15 | 2700 | Yes | 64 | - | --- | 106 | - | Yes | Yes |
| 07:30 - 08:30 | 2689 | Yes | 78 | - | --- | 110 | - | Yes | Yes |
| 07:45 - 08:45 | 2565 | Yes | 72 | - | --- | 106 | - | Yes | Yes |
| 17:15 - 18:15 | 2702 | Yes | 86 | - | No | 64 | - | --- | No |
| 07:00 - 08:00 | 2620 | Yes | 58 | - | --- | 92 | - | No | No |
| 08:00 - 09:00 | 2510 | Yes | 94 | - | --- | 96 | - | No | No |
| 06:45 - 07:45 | 1906 | Yes | 44 | - | --- | 66 | - | No | No |
| 15:30 - 16:30 | 1881 | Yes | 84 | - | No | 44 | - | --- | No |
| 08:15 - 09:15 | 1874 | Yes | 72 | - | No | 58 | - | --- | No |
| 17:30 - 18:30 | 1745 | Yes | 62 | - | No | 44 | - | --- | No |
| 08:30 - 09:30 | 1236 | Yes | 46 | - | No | 38 | - | --- | No |
| 06:30 - 07:30 | 1205 | Yes | 28 | - | --- | 40 | - | No | No |
| 15:15 - 16:15 | 891 | Yes | 43 | - | No | 22 | - | --- | No |
| 17:45 - 18:45 | 855 | Yes | 22 | - | --- | 26 | - | No | No |
| 08:45 - 09:45 | 659 | No | 36 | - | No | 16 | - | --- | No |
| 06:15 - 07:15 | 556 | No | 16 | - | --- | 24 | - | No | No |
| 05:30 - 06:30 | 0 | No | 0 | - | --- | 0 | - | No | No |
| 05:45 - 06:45 | 0 | No | 0 | - | --- | 0 | - | No | No |
| 06:00 - 07:00 | 0 | No | 0 | - | --- | 0 | - | No | No |

# Traffic Engineering Consultants, Inc.

## US-75 & Rice Creek Rd in Bartlesville, OK

### 2046 Total Conditions

**Study Name: T-3110 Rice Creek (2046 Total)**

**Study Date : 1/24/2024**

## Warrant 3B - Peak Hour Volumes

### Description

Intended for sites where the volume of intersecting traffic during one hour of the day is the principal reason for consideration of a signal installation.

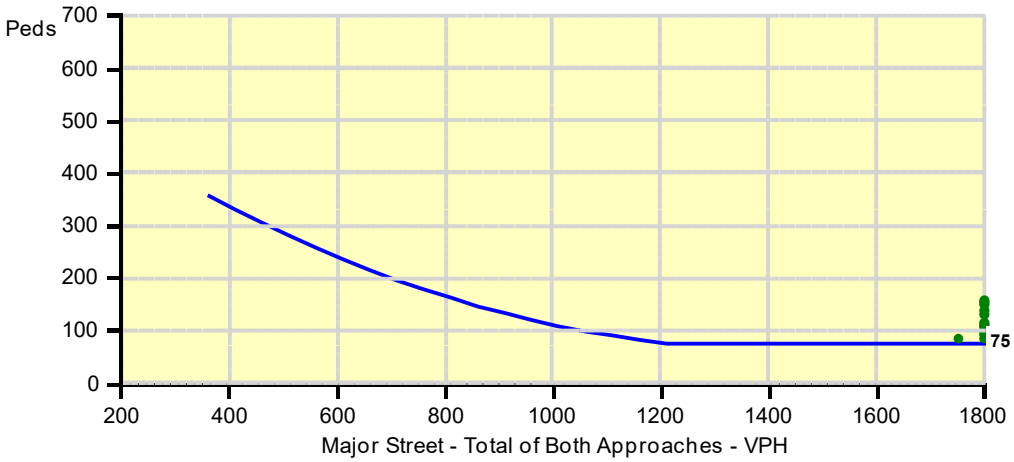
### Summary

13 one hour periods meet minimums.
Warrant IS met.

### Site Data Required

| | |
|---|---|
| Rural Settings Apply = | **True** |
| Number of Major Lanes = | **2 or more** |
| Number of Minor Lanes = | **1** |

| | Major Road US-75 | | | | | Minor Road Rice Creek Rd | | |
|---|---|---|---|---|---|---|---|---|
| Time | Major NB | + | Major SB | = | Total | Minor EB | Minor WB | Met? |
| 16:15 - 17:15 | 1694 | + | 1908 | = | 3602 | 156 | 117 | Yes |
| 16:30 - 17:30 | 1689 | + | 1899 | = | 3588 | 139 | 115 | Yes |
| 16:45 - 17:45 | 1712 | + | 1803 | = | 3515 | 148 | 113 | Yes |
| 16:00 - 17:00 | 1649 | + | 1859 | = | 3508 | 154 | 101 | Yes |
| 17:00 - 18:00 | 1743 | + | 1729 | = | 3472 | 131 | 102 | Yes |
| 15:45 - 16:45 | 1250 | + | 1408 | = | 2658 | 115 | 64 | Yes |
| 17:15 - 18:15 | 1298 | + | 1254 | = | 2552 | 86 | 64 | Yes |
| 07:15 - 08:15 | 1452 | + | 1078 | = | 2530 | 64 | 106 | Yes |
| 07:30 - 08:30 | 1447 | + | 1054 | = | 2501 | 78 | 110 | Yes |
| 07:00 - 08:00 | 1364 | + | 1106 | = | 2470 | 58 | 92 | Yes |
| 07:45 - 08:45 | 1314 | + | 1073 | = | 2387 | 72 | 106 | Yes |
| | | | | | | | 96 | Yes |



Appendix H

# EJScreen Community Report

# EJSCREEN COMMUNITY REPORT

## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

## Bartlesville 14.993-acre Gaming and Fee-to-Trust Project

Washington County, OK | January 2024

**Requested By:**

Acorn Environmental
5170 Golden Foothill Parkway
El Dorado Hills, CA 95762
916.235.8224
www.acorn-env.com

**Source:** https:// https://ejscreen.epa.gov/mapper/mobile/EJSCREEN_mobile.aspx
**Date Accessed:** January 2024

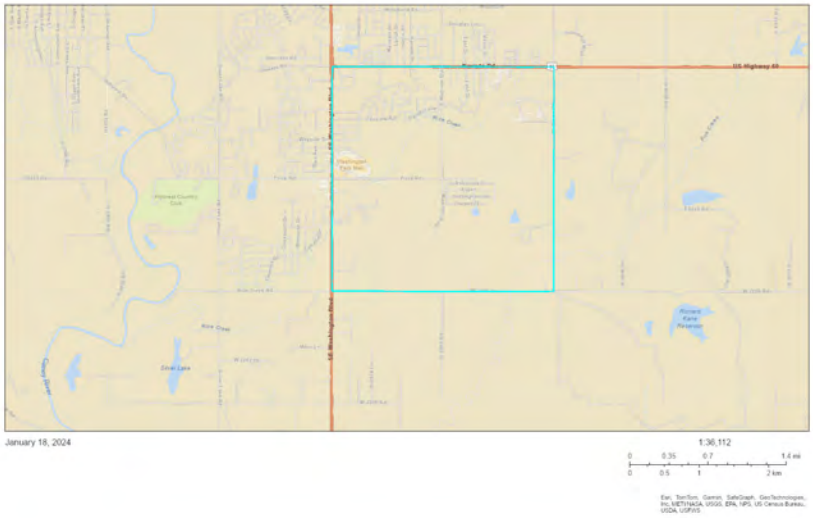
# EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

## Bartlesville, OK

Tract: 40147000602
Population: 2,984
Area in square miles: 3.98

A3 Landscape




### LANGUAGES SPOKEN AT HOME

| LANGUAGE | PERCENT |
|---|---|
| English | 93% |
| Spanish | 1% |
| Other Indo-European | 1% |
| Chinese (including Mandarin, Cantonese) | 1% |
| Other Asian and Pacific Island | 4% |
| Total Non-English | 7% |

### COMMUNITY INFORMATION

Low income: 14 percent
People of color: 22 percent
Less than high school education: 8 percent
Limited English households: 0 percent
Unemployment: 3 percent
Persons with disabilities: 13 percent
Male: 53 percent
Female: 47 percent
77 years
Average life expectancy
$42,942
Per capita income
Number of households: 1,126
Owner occupied: 86 percent

### BREAKDOWN BY RACE

White: 78%
Black: 2%
American Indian: 6%
Asian: 6%
Hawaiian/Pacific Islander: 0%
Other race: 0%
Two or more races: 6%
Hispanic: 3%

### BREAKDOWN BY AGE

| | |
|---|---|
| From Ages 1 to 4 | 4% |
| From Ages 1 to 18 | 24% |
| From Ages 18 and up | 76% |
| From Ages 65 and up | 15% |

### LIMITED ENGLISH SPEAKING BREAKDOWN

| | |
|---|---|
| Speak Spanish | 0% |
| Speak Other Indo-European Languages | 0% |
| Speak Asian-Pacific Island Languages | 100% |
| Speak Other Languages | 0% |

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2017 -2021. Life expectancy data comes from the Centers for Disease Control.

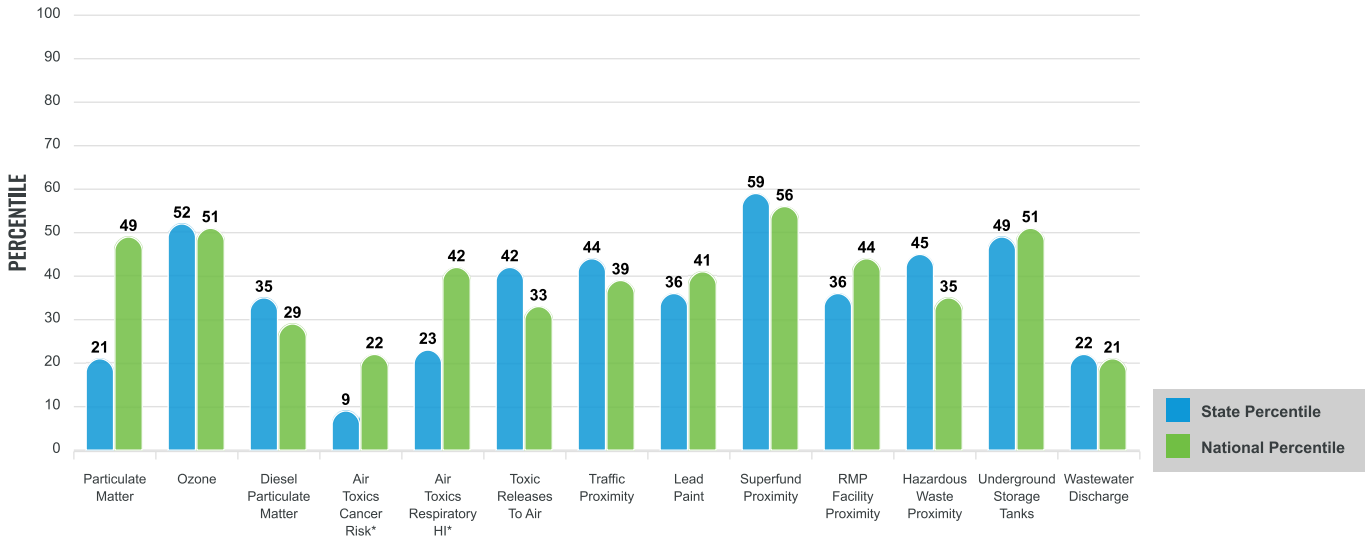
# Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

## EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

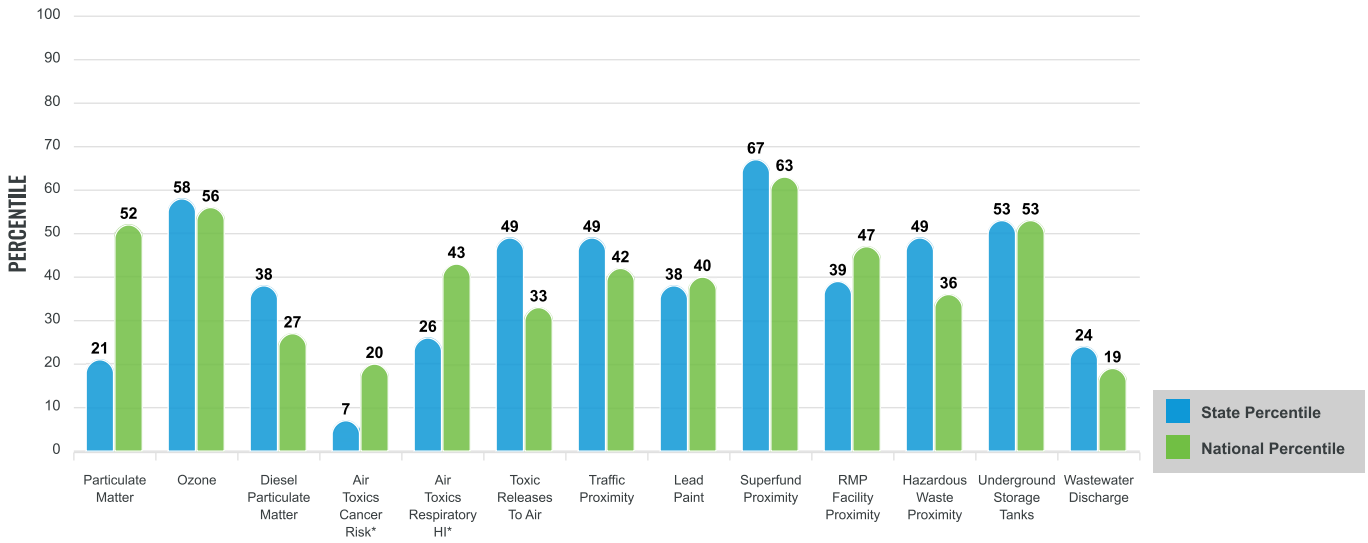
### EJ INDEXES FOR THE SELECTED LOCATION




## SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

### SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION




These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for Tract: 40147000602

# EJScreen Environmental and Socioeconomic Indicators Data

| SELECTED VARIABLES | VALUE | STATE AVERAGE | PERCENTILE IN STATE | USA AVERAGE | PERCENTILE IN USA |
|---|---|---|---|---|---|
| **POLLUTION AND SOURCES** | | | | | |
| Particulate Matter (µg/m$^3$) | 8.69 | 9.03 | 32 | 8.08 | 64 |
| Ozone (ppb) | 63.7 | 62.3 | 77 | 61.6 | 68 |
| Diesel Particulate Matter (µg/m$^3$) | 0.143 | 0.166 | 46 | 0.261 | 29 |
| Air Toxics Cancer Risk* (lifetime risk per million) | 20 | 25 | 1 | 25 | 5 |
| Air Toxics Respiratory HI* | 0.3 | 0.3 | 11 | 0.31 | 31 |
| Toxic Releases to Air | 280 | 4,100 | 65 | 4,600 | 37 |
| Traffic Proximity (daily traffic count/distance to road) | 65 | 83 | 62 | 210 | 45 |
| Lead Paint (% Pre-1960 Housing) | 0.19 | 0.25 | 56 | 0.3 | 47 |
| Superfund Proximity (site count/km distance) | 0.14 | 0.048 | 94 | 0.13 | 77 |
| RMP Facility Proximity (facility count/km distance) | 0.18 | 0.38 | 46 | 0.43 | 53 |
| Hazardous Waste Proximity (facility count/km distance) | 0.22 | 0.43 | 61 | 1.9 | 37 |
| Underground Storage Tanks (count/km$^2$) | 2.5 | 1.7 | 75 | 3.9 | 63 |
| Wastewater Discharge (toxicity-weighted concentration/m distance) | 2.1E-05 | 0.058 | 33 | 22 | 21 |
| **SOCIOECONOMIC INDICATORS** | | | | | |
| Demographic Index | 18% | 36% | 15 | 35% | 28 |
| Supplemental Demographic Index | 9% | 16% | 18 | 14% | 29 |
| People of Color | 22% | 35% | 28 | 39% | 41 |
| Low Income | 14% | 37% | 15 | 31% | 26 |
| Unemployment Rate | 3% | 5% | 41 | 6% | 43 |
| Limited English Speaking Households | 0% | 2% | 0 | 5% | 0 |
| Less Than High School Education | 8% | 12% | 39 | 12% | 48 |
| Under Age 5 | 4% | 6% | 30 | 6% | 40 |
| Over Age 64 | 15% | 16% | 51 | 17% | 49 |
| Low Life Expectancy | 21% | 22% | 36 | 20% | 63 |

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

### Sites reporting to EPA within defined area:

| | |
|---|---|
| Superfund | 0 |
| Hazardous Waste, Treatment, Storage, and Disposal Facilities | 0 |
| Water Dischargers | 0 |
| Air Pollution | 2 |
| Brownfields | 0 |
| Toxic Release Inventory | 0 |

### Other community features within defined area:

| | |
|---|---|
| Schools | 0 |
| Hospitals | 0 |
| Places of Worship | 2 |

### Other environmental data:

| | |
|---|---|
| Air Non-attainment | No |
| Impaired Waters | Yes |

| | |
|---|---|
| Selected location contains American Indian Reservation Lands* | Yes |
| Selected location contains a "Justice40 (CEJST)" disadvantaged community | Yes |
| Selected location contains an EPA IRA disadvantaged community | Yes |

*Report for Tract: 40147000602*

# EJScreen Environmental and Socioeconomic Indicators Data

## HEALTH INDICATORS

| INDICATOR | VALUE | STATE AVERAGE | STATE PERCENTILE | US AVERAGE | US PERCENTILE |
|---|---|---|---|---|---|
| Low Life Expectancy | 21% | 22% | 36 | 20% | 63 |
| Heart Disease | 7.7 | 7.1 | 58 | 6.1 | 80 |
| Asthma | 10.3 | 11.1 | 24 | 10 | 64 |
| Cancer | 8.1 | 6.3 | 94 | 6.1 | 90 |
| Persons with Disabilities | 12.7% | 16.9% | 25 | 13.4% | 51 |

## CLIMATE INDICATORS

| INDICATOR | VALUE | STATE AVERAGE | STATE PERCENTILE | US AVERAGE | US PERCENTILE |
|---|---|---|---|---|---|
| Flood Risk | 11% | 8% | 74 | 12% | 68 |
| Wildfire Risk | 100% | 43% | 90 | 14% | 96 |

## CRITICAL SERVICE GAPS

| INDICATOR | VALUE | STATE AVERAGE | STATE PERCENTILE | US AVERAGE | US PERCENTILE |
|---|---|---|---|---|---|
| Broadband Internet | 12% | 17% | 41 | 14% | 53 |
| Lack of Health Insurance | 8% | 15% | 17 | 9% | 56 |
| Housing Burden | No | N/A | N/A | N/A | N/A |
| Transportation Access | Yes | N/A | N/A | N/A | N/A |
| Food Desert | No | N/A | N/A | N/A | N/A |

Footnotes

*Report for Tract: 40147000602*

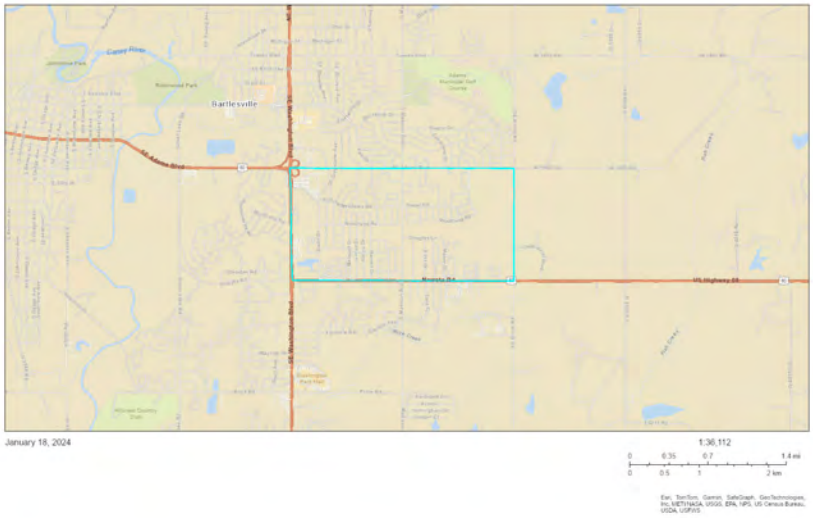
# EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

## Bartlesville, OK

Tract: 40147000601
Population: 4,674
Area in square miles: 2.00

A3 Landscape




### LANGUAGES SPOKEN AT HOME

| LANGUAGE | PERCENT |
|---|---|
| English | 95% |
| Spanish | 1% |
| Other Indo-European | 1% |
| Other Asian and Pacific Island | 1% |
| Other and Unspecified | 1% |
| Total Non-English | 5% |

### COMMUNITY INFORMATION

- Low income: 38 percent
- People of color: 23 percent
- Less than high school education: 8 percent
- Limited English households: 2 percent
- Unemployment: 4 percent
- Persons with disabilities: 22 percent
- Male: 50 percent
- Female: 50 percent
- 77 years — Average life expectancy
- $32,907 — Per capita income
- Number of households: 2,192
- Owner occupied: 60 percent

### BREAKDOWN BY RACE

- White: 77%
- Black: 5%
- American Indian: 3%
- Asian: 2%
- Hawaiian/Pacific Islander: 0%
- Other race: 0%
- Two or more races: 7%
- Hispanic: 5%

### BREAKDOWN BY AGE

| | |
|---|---|
| From Ages 1 to 4 | 6% |
| From Ages 1 to 18 | 22% |
| From Ages 18 and up | 78% |
| From Ages 65 and up | 24% |

### LIMITED ENGLISH SPEAKING BREAKDOWN

| | |
|---|---|
| Speak Spanish | 0% |
| Speak Other Indo-European Languages | 0% |
| Speak Asian-Pacific Island Languages | 0% |
| Speak Other Languages | 100% |

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2017 -2021. Life expectancy data comes from the Centers for Disease Control.

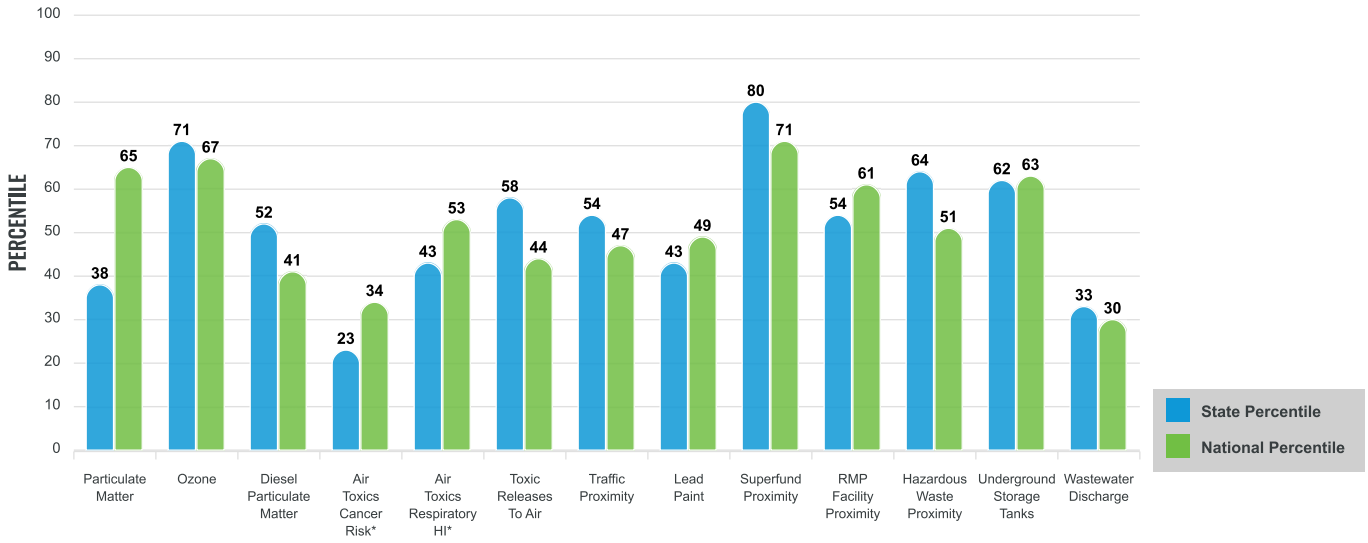
# Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

## EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

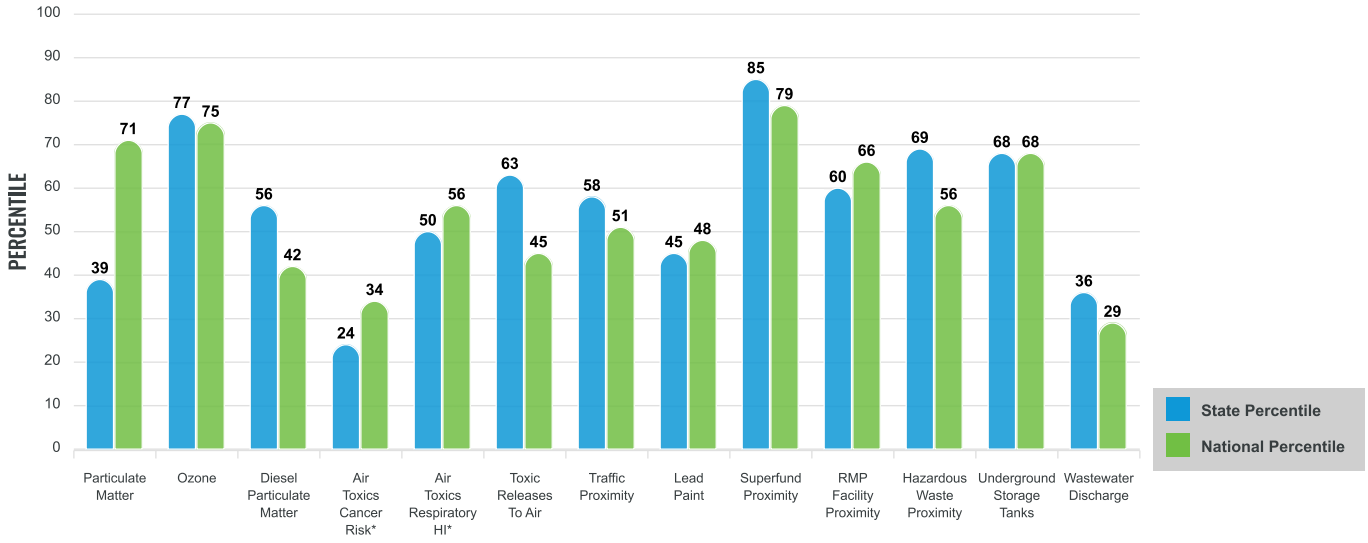
### EJ INDEXES FOR THE SELECTED LOCATION




## SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

### SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION




These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for Tract: 40147000601

# EJScreen Environmental and Socioeconomic Indicators Data

| SELECTED VARIABLES | VALUE | STATE AVERAGE | PERCENTILE IN STATE | USA AVERAGE | PERCENTILE IN USA |
|---|---|---|---|---|---|
| **POLLUTION AND SOURCES** | | | | | |
| Particulate Matter (µg/m$^3$) | 8.69 | 9.03 | 32 | 8.08 | 64 |
| Ozone (ppb) | 63.7 | 62.3 | 77 | 61.6 | 68 |
| Diesel Particulate Matter (µg/m$^3$) | 0.143 | 0.166 | 46 | 0.261 | 29 |
| Air Toxics Cancer Risk* (lifetime risk per million) | 20 | 25 | 1 | 25 | 5 |
| Air Toxics Respiratory HI* | 0.3 | 0.3 | 11 | 0.31 | 31 |
| Toxic Releases to Air | 230 | 4,100 | 61 | 4,600 | 34 |
| Traffic Proximity (daily traffic count/distance to road) | 50 | 83 | 55 | 210 | 40 |
| Lead Paint (% Pre-1960 Housing) | 0.16 | 0.25 | 51 | 0.3 | 43 |
| Superfund Proximity (site count/km distance) | 0.15 | 0.048 | 94 | 0.13 | 78 |
| RMP Facility Proximity (facility count/km distance) | 0.21 | 0.38 | 54 | 0.43 | 59 |
| Hazardous Waste Proximity (facility count/km distance) | 0.31 | 0.43 | 69 | 1.9 | 43 |
| Underground Storage Tanks (count/km$^2$) | 2.4 | 1.7 | 74 | 3.9 | 62 |
| Wastewater Discharge (toxicity-weighted concentration/m distance) | 2E-05 | 0.058 | 32 | 22 | 21 |
| **SOCIOECONOMIC INDICATORS** | | | | | |
| Demographic Index | 30% | 36% | 40 | 35% | 51 |
| Supplemental Demographic Index | 14% | 16% | 47 | 14% | 58 |
| People of Color | 23% | 35% | 28 | 39% | 41 |
| Low Income | 38% | 37% | 51 | 31% | 66 |
| Unemployment Rate | 4% | 5% | 54 | 6% | 54 |
| Limited English Speaking Households | 2% | 2% | 73 | 5% | 61 |
| Less Than High School Education | 8% | 12% | 39 | 12% | 48 |
| Under Age 5 | 6% | 6% | 49 | 6% | 58 |
| Over Age 64 | 24% | 16% | 83 | 17% | 79 |
| Low Life Expectancy | 21% | 22% | 36 | 20% | 63 |

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

### Sites reporting to EPA within defined area:

| | |
|---|---|
| Superfund | 0 |
| Hazardous Waste, Treatment, Storage, and Disposal Facilities | 0 |
| Water Dischargers | 0 |
| Air Pollution | 0 |
| Brownfields | 0 |
| Toxic Release Inventory | 0 |

### Other community features within defined area:

| | |
|---|---|
| Schools | 1 |
| Hospitals | 0 |
| Places of Worship | 6 |

### Other environmental data:

| | |
|---|---|
| Air Non-attainment | No |
| Impaired Waters | No |

| | |
|---|---|
| Selected location contains American Indian Reservation Lands* | Yes |
| Selected location contains a "Justice40 (CEJST)" disadvantaged community | Yes |
| Selected location contains an EPA IRA disadvantaged community | Yes |

*Report for Tract: 40147000601*

# EJScreen Environmental and Socioeconomic Indicators Data

## HEALTH INDICATORS

| INDICATOR | VALUE | STATE AVERAGE | STATE PERCENTILE | US AVERAGE | US PERCENTILE |
|---|---|---|---|---|---|
| Low Life Expectancy | 21% | 22% | 36 | 20% | 63 |
| Heart Disease | 7.7 | 7.1 | 58 | 6.1 | 80 |
| Asthma | 10.3 | 11.1 | 24 | 10 | 64 |
| Cancer | 8.1 | 6.3 | 94 | 6.1 | 90 |
| Persons with Disabilities | 21.3% | 16.9% | 76 | 13.4% | 89 |

## CLIMATE INDICATORS

| INDICATOR | VALUE | STATE AVERAGE | STATE PERCENTILE | US AVERAGE | US PERCENTILE |
|---|---|---|---|---|---|
| Flood Risk | 7% | 8% | 54 | 12% | 53 |
| Wildfire Risk | 99% | 43% | 88 | 14% | 95 |

## CRITICAL SERVICE GAPS

| INDICATOR | VALUE | STATE AVERAGE | STATE PERCENTILE | US AVERAGE | US PERCENTILE |
|---|---|---|---|---|---|
| Broadband Internet | 16% | 17% | 54 | 14% | 65 |
| Lack of Health Insurance | 9% | 15% | 21 | 9% | 62 |
| Housing Burden | No | N/A | N/A | N/A | N/A |
| Transportation Access | No | N/A | N/A | N/A | N/A |
| Food Desert | No | N/A | N/A | N/A | N/A |

Footnotes

*Report for Tract: 40147000601*

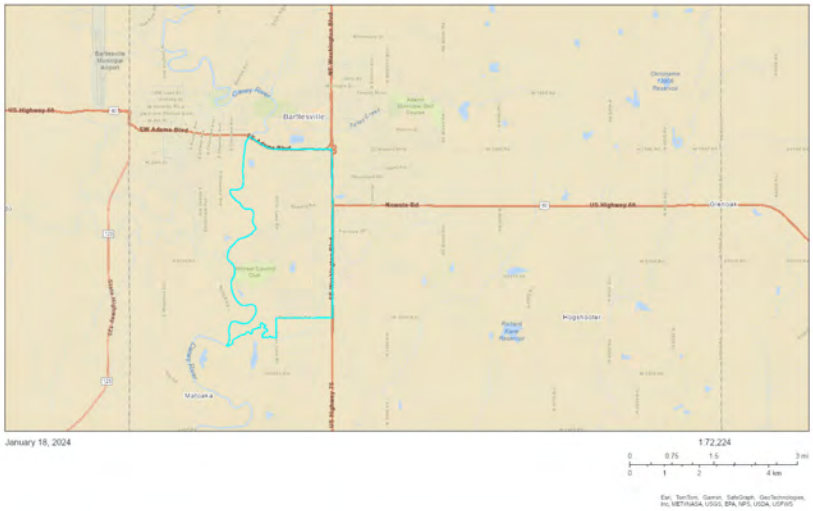
# EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

## Bartlesville, OK

Tract: 40147000700
Population: 6,490
Area in square miles: 5.19

A3 Landscape




### LANGUAGES SPOKEN AT HOME

| LANGUAGE | PERCENT |
|---|---|
| English | 94% |
| Spanish | 3% |
| Chinese (including Mandarin, Cantonese) | 1% |
| Vietnamese | 1% |
| Total Non-English | 6% |

### COMMUNITY INFORMATION

Low income: 14 percent

People of color: 21 percent

Less than high school education: 2 percent

Limited English households: 1 percent

Unemployment: 4 percent

Persons with disabilities: 12 percent

Male: 49 percent

Female: 51 percent

83 years
Average life expectancy

$47,629
Per capita income

Number of households: 2,387

Owner occupied: 87 percent

### BREAKDOWN BY RACE

White: 79%

Black: 2%

American Indian: 6%

Asian: 3%

Hawaiian/Pacific Islander: 0%

Other race: 0%

Two or more races: 6%

Hispanic: 4%

### BREAKDOWN BY AGE

| | |
|---|---|
| From Ages 1 to 4 | 8% |
| From Ages 1 to 18 | 24% |
| From Ages 18 and up | 76% |
| From Ages 65 and up | 27% |

### LIMITED ENGLISH SPEAKING BREAKDOWN

| | |
|---|---|
| Speak Spanish | 100% |
| Speak Other Indo-European Languages | 0% |
| Speak Asian-Pacific Island Languages | 0% |
| Speak Other Languages | 0% |

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2017 -2021. Life expectancy data comes from the Centers for Disease Control.

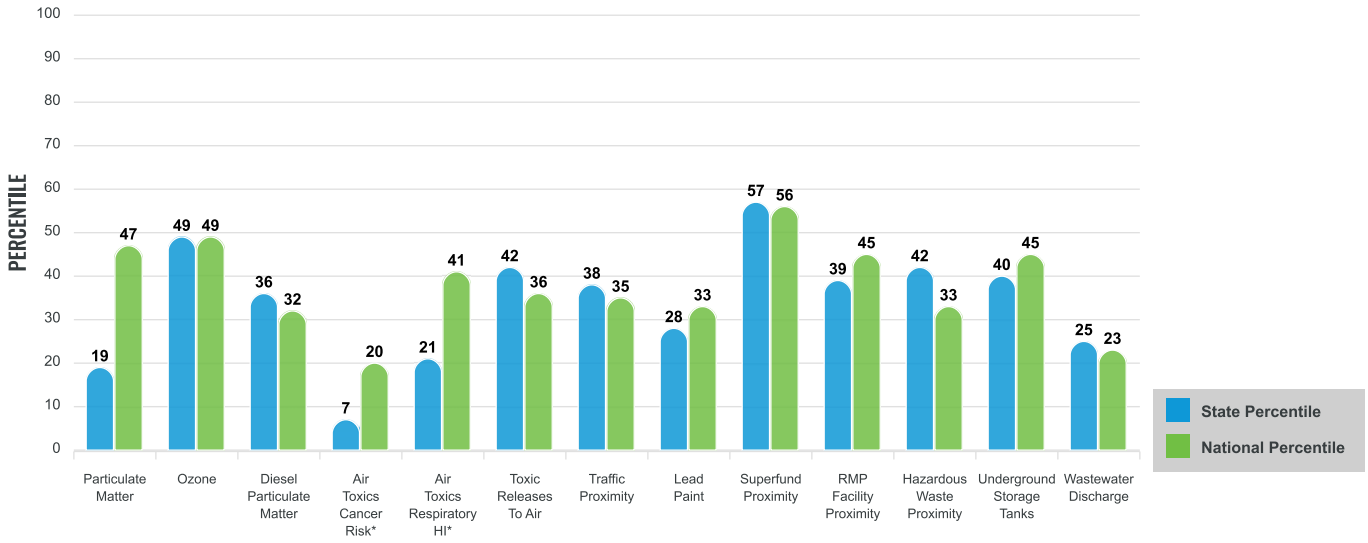
# Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

## EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

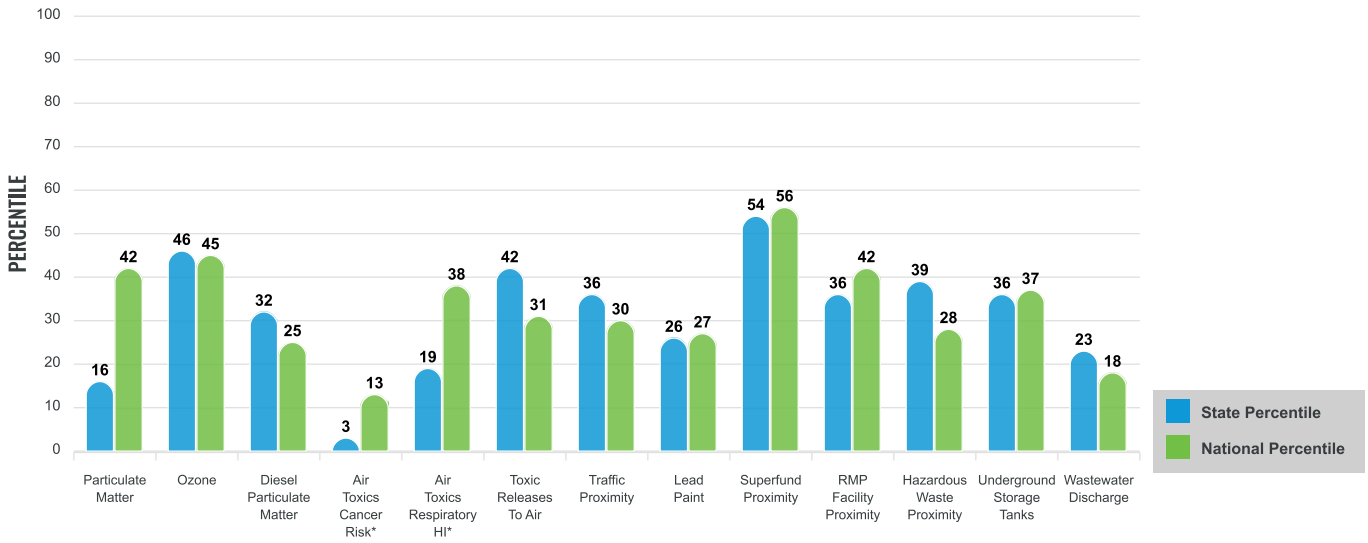
### EJ INDEXES FOR THE SELECTED LOCATION




## SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

### SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION




These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for Tract: 40147000700

# EJScreen Environmental and Socioeconomic Indicators Data

| SELECTED VARIABLES | VALUE | STATE AVERAGE | PERCENTILE IN STATE | USA AVERAGE | PERCENTILE IN USA |
|---|---|---|---|---|---|
| **POLLUTION AND SOURCES** | | | | | |
| Particulate Matter (µg/m$^3$) | 8.68 | 9.03 | 32 | 8.08 | 64 |
| Ozone (ppb) | 63.6 | 62.3 | 76 | 61.6 | 67 |
| Diesel Particulate Matter (µg/m$^3$) | 0.162 | 0.166 | 52 | 0.261 | 35 |
| Air Toxics Cancer Risk* (lifetime risk per million) | 20 | 25 | 1 | 25 | 5 |
| Air Toxics Respiratory HI* | 0.3 | 0.3 | 11 | 0.31 | 31 |
| Toxic Releases to Air | 460 | 4,100 | 71 | 4,600 | 45 |
| Traffic Proximity (daily traffic count/distance to road) | 62 | 83 | 61 | 210 | 45 |
| Lead Paint (% Pre-1960 Housing) | 0.15 | 0.25 | 50 | 0.3 | 41 |
| Superfund Proximity (site count/km distance) | 0.19 | 0.048 | 96 | 0.13 | 84 |
| RMP Facility Proximity (facility count/km distance) | 0.24 | 0.38 | 59 | 0.43 | 63 |
| Hazardous Waste Proximity (facility count/km distance) | 0.23 | 0.43 | 62 | 1.9 | 38 |
| Underground Storage Tanks (count/km$^2$) | 1.5 | 1.7 | 61 | 3.9 | 54 |
| Wastewater Discharge (toxicity-weighted concentration/m distance) | 6.1E-05 | 0.058 | 43 | 22 | 27 |
| **SOCIOECONOMIC INDICATORS** | | | | | |
| Demographic Index | 17% | 36% | 13 | 35% | 25 |
| Supplemental Demographic Index | 7% | 16% | 9 | 14% | 17 |
| People of Color | 21% | 35% | 24 | 39% | 39 |
| Low Income | 14% | 37% | 14 | 31% | 25 |
| Unemployment Rate | 4% | 5% | 54 | 6% | 54 |
| Limited English Speaking Households | 1% | 2% | 69 | 5% | 59 |
| Less Than High School Education | 2% | 12% | 14 | 12% | 20 |
| Under Age 5 | 8% | 6% | 70 | 6% | 74 |
| Over Age 64 | 27% | 16% | 89 | 17% | 85 |
| Low Life Expectancy | 14% | 22% | 2 | 20% | 9 |

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

### Sites reporting to EPA within defined area:

Superfund ..... 0
Hazardous Waste, Treatment, Storage, and Disposal Facilities ..... 0
Water Dischargers ..... 0
Air Pollution ..... 4
Brownfields ..... 0
Toxic Release Inventory ..... 0

### Other community features within defined area:

Schools ..... 4
Hospitals ..... 0
Places of Worship ..... 6

### Other environmental data:

Air Non-attainment ..... No
Impaired Waters ..... Yes

Selected location contains American Indian Reservation Lands* ..... Yes
Selected location contains a "Justice40 (CEJST)" disadvantaged community ..... Yes
Selected location contains an EPA IRA disadvantaged community ..... Yes

*Report for Tract: 40147000700*

# EJScreen Environmental and Socioeconomic Indicators Data

## HEALTH INDICATORS

| INDICATOR | VALUE | STATE AVERAGE | STATE PERCENTILE | US AVERAGE | US PERCENTILE |
|---|---|---|---|---|---|
| Low Life Expectancy | 14% | 22% | 2 | 20% | 9 |
| Heart Disease | 7.4 | 7.1 | 53 | 6.1 | 76 |
| Asthma | 9.3 | 11.1 | 5 | 10 | 33 |
| Cancer | 9.3 | 6.3 | 99 | 6.1 | 97 |
| Persons with Disabilities | 11.5% | 16.9% | 19 | 13.4% | 43 |

## CLIMATE INDICATORS

| INDICATOR | VALUE | STATE AVERAGE | STATE PERCENTILE | US AVERAGE | US PERCENTILE |
|---|---|---|---|---|---|
| Flood Risk | 12% | 8% | 79 | 12% | 71 |
| Wildfire Risk | 98% | 43% | 85 | 14% | 94 |

## CRITICAL SERVICE GAPS

| INDICATOR | VALUE | STATE AVERAGE | STATE PERCENTILE | US AVERAGE | US PERCENTILE |
|---|---|---|---|---|---|
| Broadband Internet | 11% | 17% | 40 | 14% | 51 |
| Lack of Health Insurance | 6% | 15% | 10 | 9% | 42 |
| Housing Burden | No | N/A | N/A | N/A | N/A |
| Transportation Access | Yes | N/A | N/A | N/A | N/A |
| Food Desert | No | N/A | N/A | N/A | N/A |

Footnotes

*Report for Tract: 40147000700*

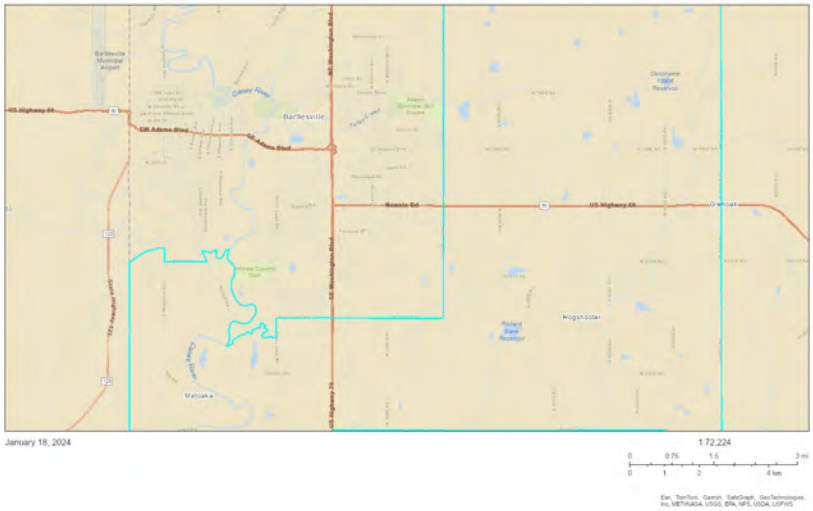
# EJScreen Community Report

This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

## Washington County, OK

Tract: 40147001200
Population: 2,490
Area in square miles: 60.24

A3 Landscape




### LANGUAGES SPOKEN AT HOME

| LANGUAGE | PERCENT |
|---|---|
| English | 98% |
| Spanish | 1% |
| Other Asian and Pacific Island | 1% |
| Total Non-English | 2% |

### COMMUNITY INFORMATION

Low income: 18 percent
People of color: 13 percent
Less than high school education: 4 percent
Limited English households: 0 percent
Unemployment: 2 percent
Persons with disabilities: 18 percent
Male: 55 percent
Female: 45 percent
80 years
Average life expectancy
$53,704
Per capita income
Number of households: 1,054
Owner occupied: 90 percent

### BREAKDOWN BY RACE

White: 87%
Black: 0%
American Indian: 6%
Asian: 1%
Hawaiian/Pacific Islander: 0%
Other race: 0%
Two or more races: 5%
Hispanic: 2%

### BREAKDOWN BY AGE

| | |
|---|---|
| From Ages 1 to 4 | 3% |
| From Ages 1 to 18 | 19% |
| From Ages 18 and up | 81% |
| From Ages 65 and up | 27% |

### LIMITED ENGLISH SPEAKING BREAKDOWN

| | |
|---|---|
| Speak Spanish | 0% |
| Speak Other Indo-European Languages | 0% |
| Speak Asian-Pacific Island Languages | 0% |
| Speak Other Languages | 0% |

Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race.
Source: U.S. Census Bureau, American Community Survey (ACS) 2017 -2021. Life expectancy data comes from the Centers for Disease Control.

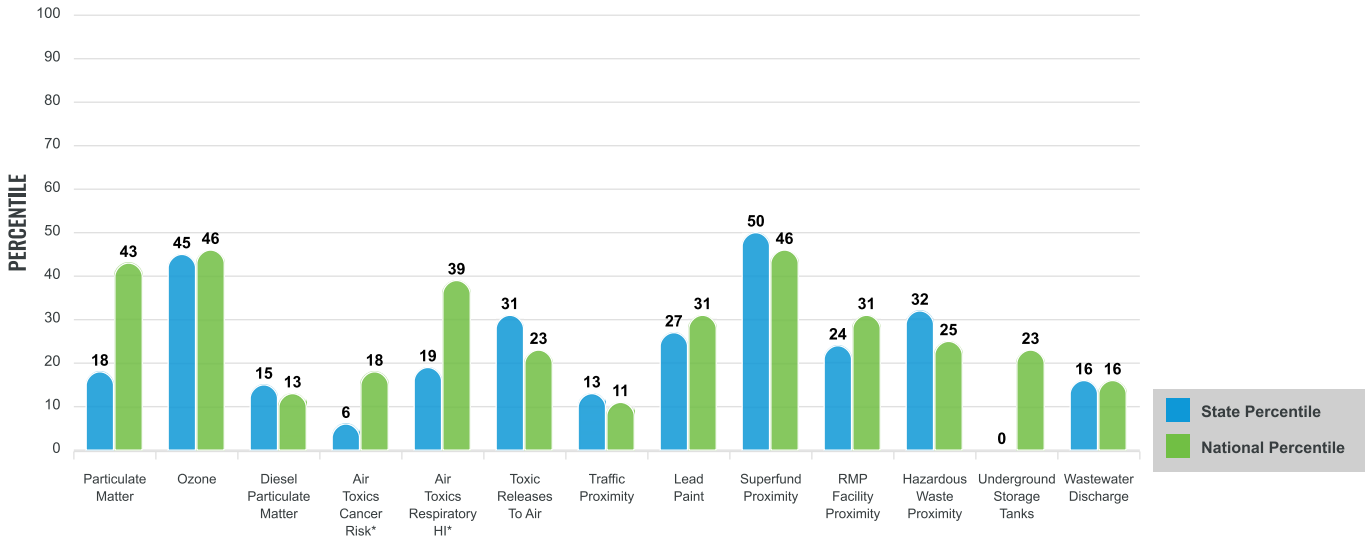
# Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the EJScreen website.

## EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

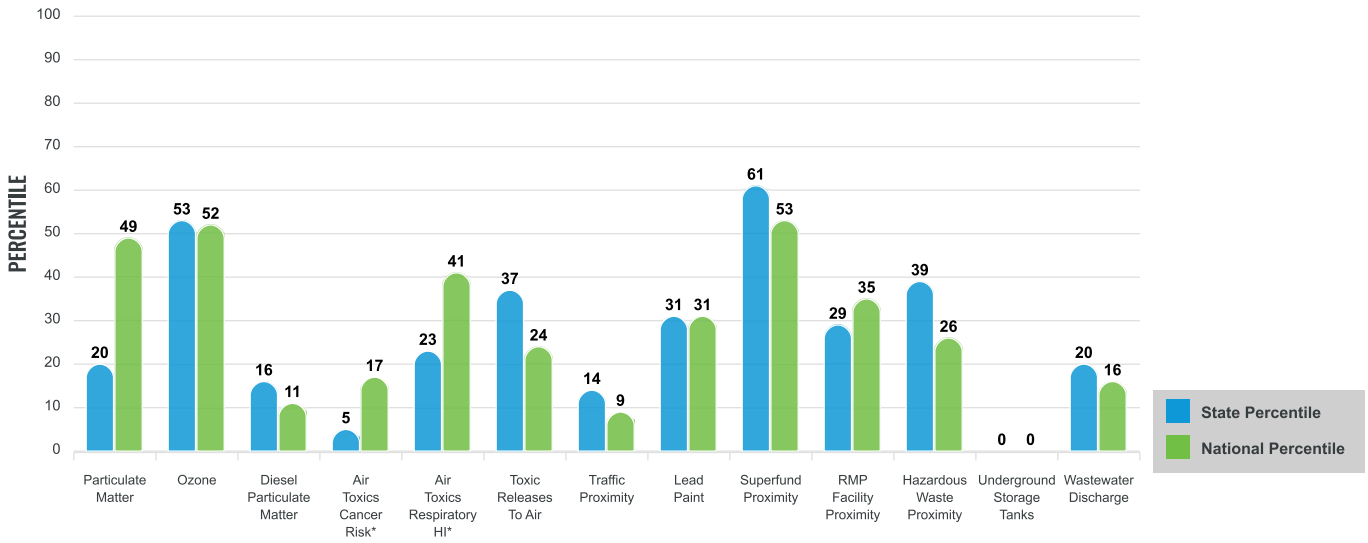
### EJ INDEXES FOR THE SELECTED LOCATION




## SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low-income, percent linguistically isolated, percent less than high school education, percent unemployed, and low life expectancy with a single environmental indicator.

### SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION




These percentiles provide perspective on how the selected block group or buffer area compares to the entire state or nation.

Report for Tract: 40147001200

# EJScreen Environmental and Socioeconomic Indicators Data

| SELECTED VARIABLES | VALUE | STATE AVERAGE | PERCENTILE IN STATE | USA AVERAGE | PERCENTILE IN USA |
|---|---|---|---|---|---|
| **POLLUTION AND SOURCES** | | | | | |
| Particulate Matter (µg/m$^3$) | 8.69 | 9.03 | 33 | 8.08 | 64 |
| Ozone (ppb) | 63.5 | 62.3 | 75 | 61.6 | 67 |
| Diesel Particulate Matter (µg/m$^3$) | 0.0949 | 0.166 | 24 | 0.261 | 14 |
| Air Toxics Cancer Risk* (lifetime risk per million) | 20 | 25 | 1 | 25 | 5 |
| Air Toxics Respiratory HI* | 0.3 | 0.3 | 11 | 0.31 | 31 |
| Toxic Releases to Air | 160 | 4,100 | 52 | 4,600 | 29 |
| Traffic Proximity (daily traffic count/distance to road) | 5.4 | 83 | 21 | 210 | 11 |
| Lead Paint (% Pre-1960 Housing) | 0.13 | 0.25 | 48 | 0.3 | 40 |
| Superfund Proximity (site count/km distance) | 0.11 | 0.048 | 93 | 0.13 | 70 |
| RMP Facility Proximity (facility count/km distance) | 0.15 | 0.38 | 39 | 0.43 | 46 |
| Hazardous Waste Proximity (facility count/km distance) | 0.17 | 0.43 | 53 | 1.9 | 31 |
| Underground Storage Tanks (count/km$^2$) | 0.0055 | 1.7 | 12 | 3.9 | 0 |
| Wastewater Discharge (toxicity-weighted concentration/m distance) | 2.2E-05 | 0.058 | 34 | 22 | 21 |
| **SOCIOECONOMIC INDICATORS** | | | | | |
| Demographic Index | 15% | 36% | 10 | 35% | 21 |
| Supplemental Demographic Index | 8% | 16% | 14 | 14% | 25 |
| People of Color | 13% | 35% | 9 | 39% | 27 |
| Low Income | 18% | 37% | 20 | 31% | 33 |
| Unemployment Rate | 2% | 5% | 32 | 6% | 34 |
| Limited English Speaking Households | 0% | 2% | 0 | 5% | 0 |
| Less Than High School Education | 4% | 12% | 23 | 12% | 32 |
| Under Age 5 | 3% | 6% | 26 | 6% | 36 |
| Over Age 64 | 27% | 16% | 89 | 17% | 84 |
| Low Life Expectancy | 18% | 22% | 14 | 20% | 33 |

*Diesel particulate matter, air toxics cancer risk, and air toxics respiratory hazard index are from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. Cancer risks and hazard indices from the Air Toxics Data Update are reported to one significant figure and any additional significant figures here are due to rounding. More information on the Air Toxics Data Update can be found at: https://www.epa.gov/haps/air-toxics-data-update.

### Sites reporting to EPA within defined area:

Superfund ..... 0
Hazardous Waste, Treatment, Storage, and Disposal Facilities ..... 0
Water Dischargers ..... 3
Air Pollution ..... 5
Brownfields ..... 0
Toxic Release Inventory ..... 1

### Other community features within defined area:

Schools ..... 0
Hospitals ..... 0
Places of Worship ..... 1

### Other environmental data:

Air Non-attainment ..... No
Impaired Waters ..... Yes

Selected location contains American Indian Reservation Lands* ..... Yes
Selected location contains a "Justice40 (CEJST)" disadvantaged community ..... Yes
Selected location contains an EPA IRA disadvantaged community ..... Yes

*Report for Tract: 40147001200*

# EJScreen Environmental and Socioeconomic Indicators Data

## HEALTH INDICATORS

| INDICATOR | VALUE | STATE AVERAGE | STATE PERCENTILE | US AVERAGE | US PERCENTILE |
|---|---|---|---|---|---|
| Low Life Expectancy | 18% | 22% | 14 | 20% | 33 |
| Heart Disease | 7.2 | 7.1 | 49 | 6.1 | 72 |
| Asthma | 10 | 11.1 | 15 | 10 | 55 |
| Cancer | 8.3 | 6.3 | 95 | 6.1 | 92 |
| Persons with Disabilities | 17.3% | 16.9% | 56 | 13.4% | 77 |

## CLIMATE INDICATORS

| INDICATOR | VALUE | STATE AVERAGE | STATE PERCENTILE | US AVERAGE | US PERCENTILE |
|---|---|---|---|---|---|
| Flood Risk | 12% | 8% | 79 | 12% | 71 |
| Wildfire Risk | 89% | 43% | 71 | 14% | 90 |

## CRITICAL SERVICE GAPS

| INDICATOR | VALUE | STATE AVERAGE | STATE PERCENTILE | US AVERAGE | US PERCENTILE |
|---|---|---|---|---|---|
| Broadband Internet | 14% | 17% | 48 | 14% | 60 |
| Lack of Health Insurance | 8% | 15% | 18 | 9% | 58 |
| Housing Burden | No | N/A | N/A | N/A | N/A |
| Transportation Access | Yes | N/A | N/A | N/A | N/A |
| Food Desert | No | N/A | N/A | N/A | N/A |

Footnotes

*Report for Tract: 40147001200*

Appendix I

# FAA Notice Criteria Tool

# NOTICE CRITERIA TOOL

## FEDERAL AVIATION ADMINISTRATION

# Bartlesville 14.993-acre Gaming and Fee-to-Trust Project

Washington County, OK | February 2024

**Requested By:**

Acorn Environmental
5170 Golden Foothill Parkway
El Dorado Hills, CA 95762
916.235.8224
www.acorn-env.com

**Source:** https://oeaaa.faa.gov/oeaaa/external/gisTools/gisAction.jsp
**Date Accessed:** February 2024

Federal Aviation Administration

« OE/AAA

## Notice Criteria Tool

Notice Criteria Tool - Desk Reference Guide V_2018.2.0

The requirements for filing with the Federal Aviation Administration for proposed structures vary based on a number of factors: height, proximity to an airport, location, and frequencies emitted from the structure, etc. For more details, please reference CFR Title 14 Part 77.9.

You must file with the FAA at least 45 days prior to construction if:

- your structure will exceed 200ft above ground level
- your structure will be in proximity to an airport and will exceed the slope ratio
- your structure involves construction of a traverseway (i.e. highway, railroad, waterway etc...) and once adjusted upward with the appropriate vertical distance would exceed a standard of 77.9(a) or (b)
- your structure will emit frequencies, and does not meet the conditions of the FAA Co-location Policy
- your structure will be in an instrument approach area and might exceed part 77 Subpart C
- your proposed structure will be in proximity to a navigation facility and may impact the assurance of navigation signal reception
- your structure will be on an airport or heliport
- filing has been requested by the FAA

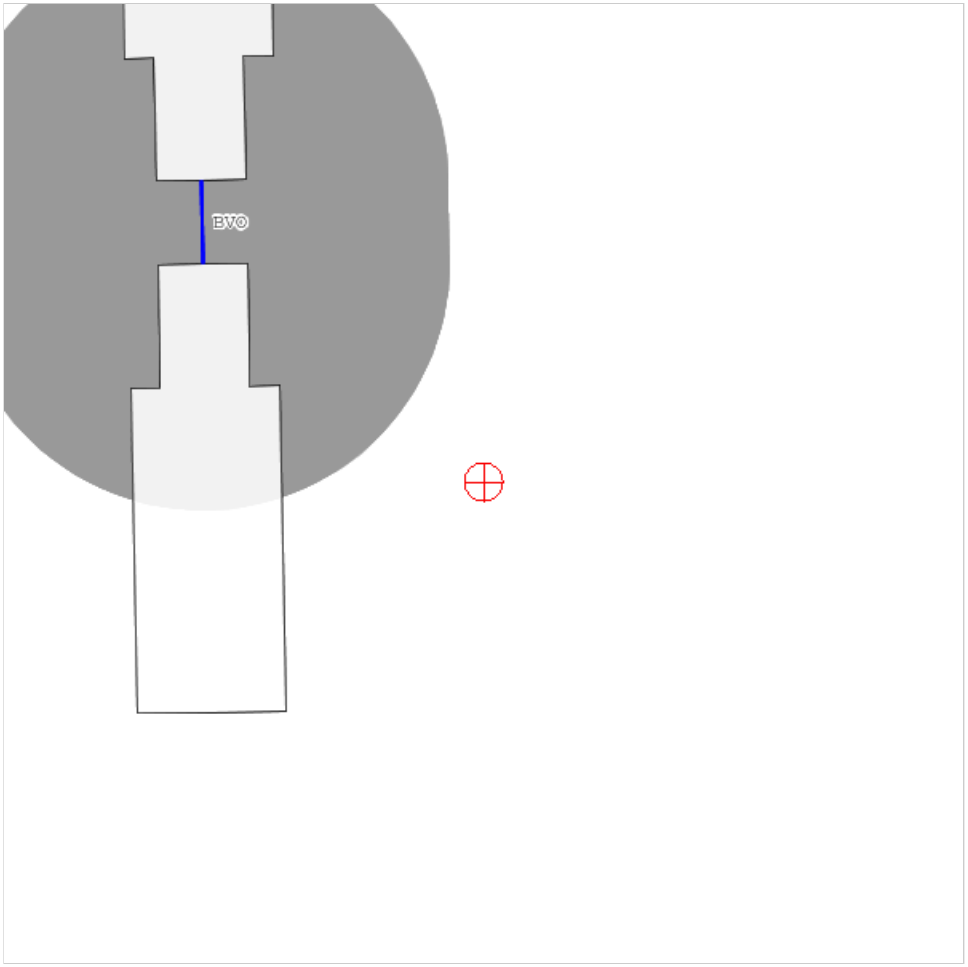
If you require additional information regarding the filing requirements for your structure, please identify and contact the appropriate FAA representative using the Air Traffic Areas of Responsibility map for Off Airport construction, or contact the FAA Airports Region / District Office for On Airport construction.

The tool below will assist in applying Part 77 Notice Criteria.

| | |
|---|---|
| * **Structure Type:** | BUILDING \| Commercial Use Building<br>Please select structure type and complete location point information. |
| **Latitude:** | 36 Deg 42 M 18 S N |
| **Longitude:** | 95 Deg 55 M 59 S W |
| **Horizontal Datum:** | NAD83 |
| **Site Elevation (SE):** | 750 (nearest foot) |
| **Structure Height :** | 200 (nearest foot) |
| **Is structure on airport:** | (•) No<br>( ) Yes |

**Results**

You do not exceed Notice Criteria.


BVO