# TRAFFIC IMPACT STUDY AND TRAFFIC SIGNAL WARRANT ANALYSIS

## TIPTON, INDIANA

Prepared for:

City of Tipton

Submitted by:

WSP

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*APPENDICES*

## TABLES



## FIGURES

# 1 INTRODUCTION

Jefferson St. (formerly State Road 28) and Main St. (formerly State Road 19) are the two main corridors in Tipton, Indiana. Recently, Indiana Department of Transportation (INDOT) relinquished control of SR 28 throughout Tipton, as well as Main St. from Park Ave. to Jefferson St. State Road 28 is now discontinuous, stopping at County Road 560 W and starting again at the Ash Rd/State Road 19 intersection on the east end of Tipton. State Road 19 now turns east on Park Rd and connects back to existing SR 19 at the Ash Rd. intersection with Jefferson St. The full relinquishment area is shown as a map in Figure 1.

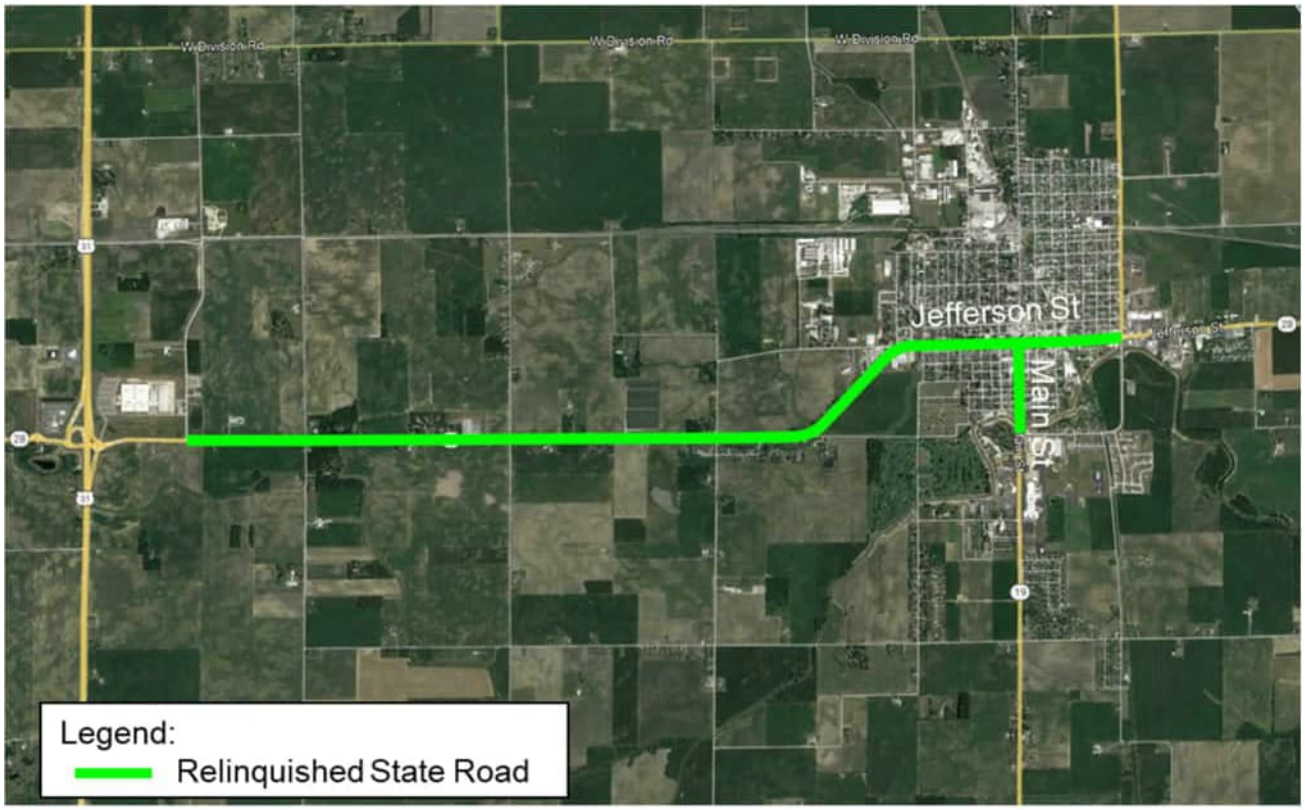



**Figure 1 – Map of Tipton, IN showing relinquished segments**

There are four (4) INDOT traffic signals within the relinquished segments that are now controlled by Tipton, as shown in Figure 2.

1. Jefferson St. at West St.
2. Jefferson St. at Main St.
3. Jefferson St. at Independence St.
4. Main St. at Madison St.


**Figure 2 – Location of Tipton's newly controlled traffic signals**

Breaking up SR 28 and rerouting SR 19, as well as restricting heavy truck traffic along the old routes, is thought to have impacted traffic volumes on both Main St. and Jefferson St. Due to this apparent decrease in traffic, Tipton contracted with WSP USA Inc. to perform a traffic impact study and signal warrant analysis to determine potential future intersection control options for the intersections. This study analyzed the existing conditions of the signalized grid, determined if the traffic signals are still warranted based on Indiana guidelines, and identified future operations for traffic control alternatives at each intersection if signals are no longer warranted.

# 2 EXISTING CONDITIONS

Downtown Tipton consists of closely spaced city streets and includes four signals in a T pattern, with signals on Jefferson St. for three consecutive intersections. The middle intersection is with Main St., which has a signal a block south at Madison St. INDOT managed the signal infrastructure and timings at these four intersections prior to relinquishment. While INDOT investigates unsignalized intersections using the Indiana Manual on Uniform Traffic Control Devices (IMUTCD) traffic signal warrant guidance to determine if the intersection should be signalized, the analysis to determine that existing signals still meet the guidelines is rarely investigated. In order to help understand if these intersections could be converted to stop-controlled, the existing signal operations were analyzed.

## 2.1 EXISTING TRAFFIC VOLUMES

Traffic counts were conducted from 6:00 AM – 7:00 PM at each intersection within the study area. These were reviewed to identify the morning (AM) and evening (PM) peak hours of travel. The AM peak hour is from 7:15-8:15AM, and the PM peak hour is from 4:30-5:30 PM. These peak hour volumes were then utilized to examine the existing signal operations, as well as the possible alternatives discussed later in the report. Figure 3 summarizes the existing AM and PM Peak hour turning movements at all four intersections. The detailed traffic counts at each intersection can be found in Appendix A

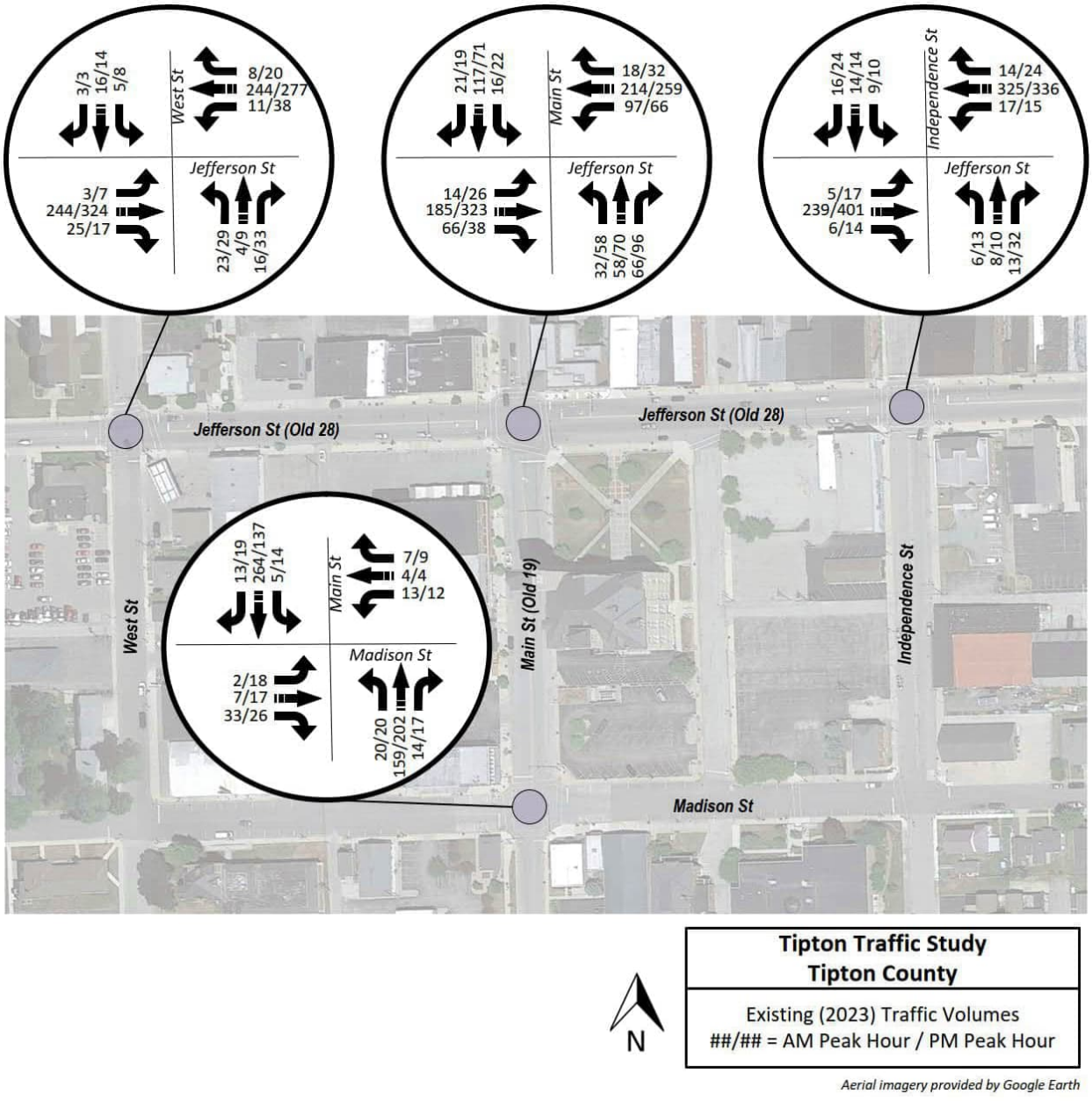



**Figure 3 – Existing (2023) AM and PM Peak Hourly Volumes**

## 2.2 EXISTING OPERATIONAL ANALYSIS

Existing volumes were input into a Synchro model to determine how well the signal system currently functions. Signal timings in the Synchro model were optimized based on the peak hour volumes and spacing between intersections to provide the smallest delay possible. The evaluation began by looking at the Level of Service (LOS) of all movements at each intersection. These LOS ratings are measured in terms of average delay, where delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. LOS A is the best operating condition, and LOS F has the longest delays, therefore making it the worst operating condition. **LOS D or better is considered acceptable in urban settings**, although LOS C or better is desirable. The LOS criteria for intersections is provided in the 2010 Highway Capacity Manual (HCM) and summarized in Table 1 below.

| Level of Service | Description | Average Control Delay Per Vehicle (seconds) | |
|---|---|---|---|
| | | Unsignalized Intersection | Signalized Intersection |
| A | Little or no delay. | ≤ 10.0 | ≤ 10.0 |
| B | Short traffic delays. | > 10.0 and ≤ 15.0 | > 10.0 and ≤ 20.0 |
| C | Average traffic delays. | > 15.0 and ≤ 25.0 | > 20.0 and ≤ 35.0 |
| D | Long traffic delays. | > 25.0 and ≤ 35.0 | > 35.0 and ≤ 55.0 |
| E | Very long traffic delays. | > 35.0 and ≤ 50.0 | > 55.0 and ≤ 80.0 |
| F | Demand exceeds capacity resulting in extreme delays and queuing. | > 50.0 | > 80.0 |

**Table 1 – Level of Service (LOS) Criteria for Intersections**

The results from the Synchro analysis of existing conditions are shown in Table 2. Although the LOS remains acceptable for all movements, delays on the minor approaches should be noted. Traffic signals that are closely spaced operate best when in coordination with each other. When signals are coordinated, the minor approach movements can't be served immediately but only when their scheduled time arrives so that the mainline greens can remain coordinated. This can lead to vehicles on the side street approaches sitting at a red light even when there is little or no traffic on the mainline, leading to driver frustration.

| Intersection | Approach | Movement | LOS | | Delay (s/veh) | | 95th Percentile Queue (ft) | |
|---|---|---|---|---|---|---|---|---|
| | | | AM | PM | AM | PM | AM | PM |
| Jefferson St. & West St. | Eastbound | LT | A | A | 3.7 | 3.6 | 2 | 4 |
| | | TH/RT | A | A | 3.6 | 4.2 | 60 | 80 |
| | Westbound | LT | A | A | 2.5 | 2.7 | 4 | 9 |
| | | TH/RT | A | A | 2.3 | 2.7 | 38 | 45 |
| | Northbound | LT/TH/RT | C | B | 20.6 | 18.7 | 31 | 41 |
| | Southbound | LT/TH/RT | C | C | 23.7 | 22.9 | 20 | 23 |
| Jefferson St. & Main St. | Eastbound | LT | A | A | 3.6 | 3.4 | 4 | 7 |
| | | TH/RT | A | A | 4.4 | 4.4 | 28 | 47 |
| | Westbound | LT | A | A | 4.2 | 3.4 | 15 | 12 |
| | | TH/RT | A | A | 4.2 | 4.0 | 28 | 34 |
| | Northbound | LT | B | C | 17.8 | 21.2 | 14 | 47 |
| | | TH/RT | B | B | 10.8 | 11.7 | 10 | 64 |
| | Southbound | LT | B | C | 19.2 | 21.5 | 17 | 21 |
| | | TH/RT | C | C | 24.0 | 20.5 | 75 | 51 |
| Jefferson St. & Independence St. | Eastbound | LT | A | A | 2.6 | 2.7 | 2 | 5 |
| | | TH/RT | A | A | 2.3 | 2.8 | 36 | 66 |
| | Westbound | LT | A | A | 3.6 | 3.7 | 7 | 7 |
| | | TH/RT | A | A | 3.7 | 3.8 | 80 | 87 |
| | Northbound | LT/TH/RT | B | B | 18.2 | 16.8 | 19 | 36 |
| | Southbound | LT/TH/RT | B | B | 19.6 | 18.1 | 29 | 31 |
| Main St. & Madison St. | Northbound | LT/TH/RT | A | A | 3.6 | 4.3 | 40 | 61 |
| | Southbound | LT/TH/RT | A | A | 3.8 | 3.1 | 73 | 38 |
| | Eastbound | LT/TH/RT | B | B | 13.8 | 19.8 | 15 | 36 |
| | Westbound | LT/TH/RT | C | B | 21.3 | 19.0 | 22 | 19 |

**Table 2 – Summary of Existing Signal Operation**

## 2.3 TRAFFIC SIGNAL WARRANT ANALYSIS

Traffic signals are a useful tool in traffic operations, however they are not a one-size-fits-all solution. A traffic signal assigns the right-of-way to the various traffic movements, helping minor movements proceed when the major movements are busy, and also helping progress vehicles efficiently through multiple intersections. Signal warrants are performed to determine whether installation of a traffic signal is justified at a particular location. There are nine warrants, with the criteria for each provided in the Indiana Manual on Uniform Traffic Control Devices (IMUTCD). The most commonly used signal warrants are the eight-hour vehicular volume warrant and the peak hour warrant.

The eight-hour warrant includes two conditions. Each condition establishes a minimum volume of total traffic on the mainline and a minimum of total traffic on the side street approach with the heaviest volume, based on the conditions of the intersection. Both approaches must meet the minimum volume of either Condition A or Condition B for at least eight hours of a 24-hour day to meet this traffic signal warrant. Condition A was established for locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal. Condition B was established for locations where Condition A is not satisfied and where the traffic volume on a major street is so heavy that the side street suffers undue delay.

A peak hour warrant is intended for use at locations where traffic conditions result in undue delay on side street approaches for one hour of a 24-hour period. This warrant is typically used at intersection near facilities that attract or discharge large numbers of vehicles, such as shift changes at a large factory.

A traffic signal warrant analysis was completed at all four intersections. The eight-hour warrant and peak hour warrants are discussed below, with results from each fully shown in Appendix C.

### 2.3.1 EIGHT-HOUR TRAFFIC SIGNAL WARRANT ANALYSIS

Counts were collected at each intersection. These volumes were compared against signal warrant standard volumes to determine if either warrant was met. Unlike other hourly warrants, the eight-hour warrant doesn't require the criteria to be met for eight consecutive hours, but rather for any eight hours within a 24-hour day.

The IMUTCD eight-hour signal warrant traffic volume thresholds depend on the number of lanes for each approach, as well as speed limit of the road and size of the community. These thresholds are provided in Table 3. Tipton has a population of 5,275 as of the 2020 census, meaning the study may use the 70% volume requirements noted below in note c. To ensure the analysis considered a worst-case scenario, the thresholds for 8-hour warrant used the 70% values shown in Table 3.

**Condition A—Minimum Vehicular Volume**

| Number of lanes for moving traffic on each approach | | Vehicles per hour on major street (total of both approaches) | | | | Vehicles per hour on higher-volum minor-street approach (one direction only) | | | |
|---|---|---|---|---|---|---|---|---|---|
| Major Street | Minor Street | 100%[a] | 80%[b] | 70%[c] | 56%[d] | 100%[a] | 80%[b] | 70%[c] | 56%[d] |
| 1 | 1 | 500 | 400 | 350 | 280 | 150 | 120 | 105 | 84 |
| 2 or more | 1 | 600 | 480 | 420 | 336 | 150 | 120 | 105 | 84 |
| 2 or more | 2 or more | 600 | 480 | 420 | 336 | 200 | 160 | 140 | 112 |
| 1 | 2 or more | 500 | 400 | 350 | 280 | 200 | 160 | 140 | 112 |

**Condition B—Interruption of Continuous Traffic**

| Number of lanes for moving traffic on each approach | | Vehicles per hour on major street (total of both approaches) | | | | Vehicles per hour on higher-volum minor-street approach (one direction only) | | | |
|---|---|---|---|---|---|---|---|---|---|
| Major Street | Minor Street | 100%[a] | 80%[b] | 70%[c] | 56%[d] | 100%[a] | 80%[b] | 70%[c] | 56%[d] |
| 1 | 1 | 750 | 600 | 525 | 420 | 75 | 60 | 53 | 42 |
| 2 or more | 1 | 900 | 720 | 630 | 504 | 75 | 60 | 53 | 42 |
| 2 or more | 2 or more | 900 | 720 | 630 | 504 | 100 | 80 | 70 | 56 |
| 1 | 2 or more | 750 | 600 | 525 | 420 | 100 | 80 | 70 | 56 |

[a] Basic minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000
[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

**Table 3 – Eight-Hour Signal Warrant Vehicle Volume Thresholds**

At the intersection of Jefferson St. & West St. the 8-hour warrant was not met in either Condition A or Condition B. Condition A met 0 hours of the day and Condition B met 3 hours. Full results are shown in Appendix C.

At the intersection of Jefferson St. & Main St. the 8-hour warrant was not met in either Condition A or Condition B. Condition A met 5 hours of the day and Condition B met 3 hours. Full results are shown in Appendix C.

At the intersection of Jefferson St. & Independence St. the 8-hour warrant was not met in either Condition A or Condition B. Condition A met 0 hours of the day and Condition B met 2 hours. Full results are shown in Appendix C.

At the intersection of Main St. & Madison St. the 8-hour warrant was not met in either Condition A or Condition B. Condition A met 0 hours of the day and Condition B met 0 hours. Full results are shown in Appendix C.

### 2.3.2 PEAK HOUR TRAFFIC SIGNAL WARRANT ANALYSIS

A peak hour warrant is traditionally used for unusual cases, such as office complexes or manufacturing plants, that attract or discharge large numbers of vehicles over a short time. While none of the four signals downtown Tipton seem to fit this theme, the FCA Transmission Plant west of town is a large volume generator. Although that plant likely doesn't seriously affect downtown intersections, because the peak hour warrant is the second most common warrant used in signal analysis it's worth investigating whether or not it is met.

The category of isolated town with a population under 10,000 again applies, meaning only 70% of the threshold volumes are required to meet the warrant. The peak hour warrant thresholds depend on the number of lanes for each approach and are a relationship between total vehicles on both directions of the major road and vehicles on the busier minor approach. These changing thresholds can be seen by the black lines Figure 4.

The peak hour warrant was not met for any of the four intersections. Jefferson St. & Main St. was the closest during the PM Peak with 744 vehicles on both Jefferson St. approaches and 224 vehicles on the northbound Main St. approach, but those volumes fall below the line for 2 or more lanes on all approaches, as shown by the red diamond in Figure 4.

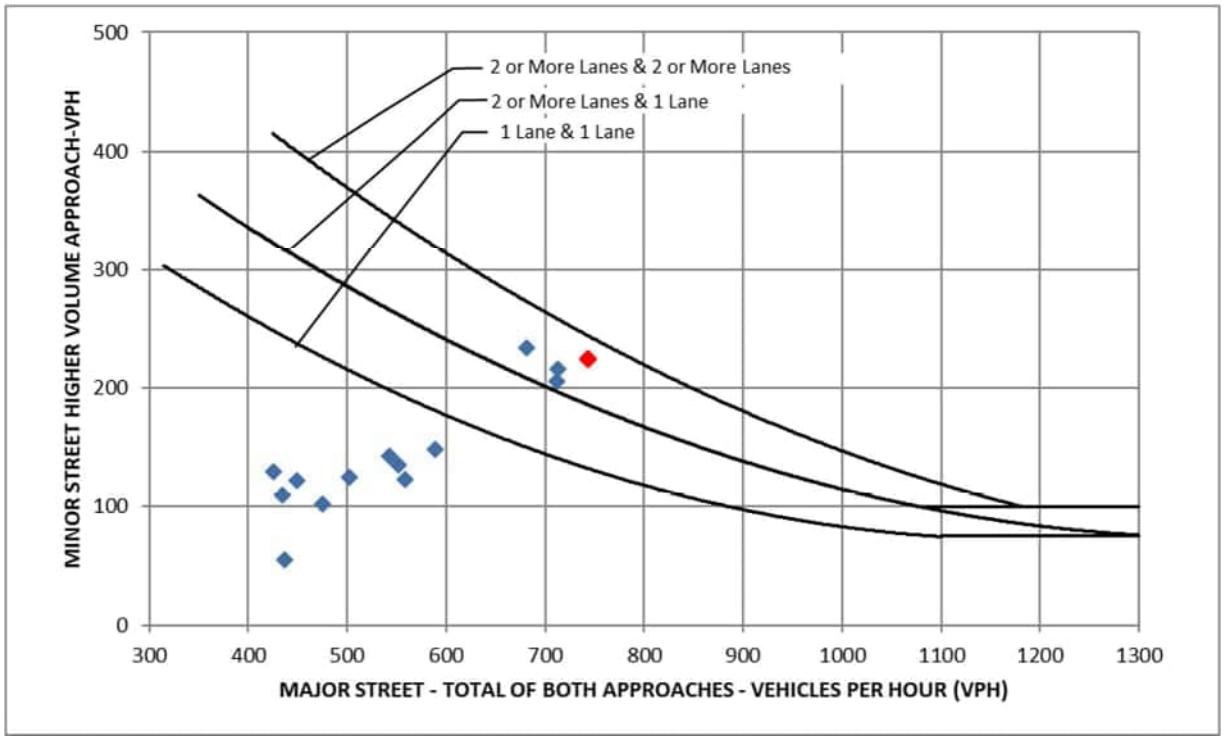



**Figure 4 – Peak Hour Warrant Volume Diagram at Jefferson St. & Main St. (70% Factor)**

# 3 CONVERTING INTERSECTION TO STOP-CONTROLLED

The signal warrant analysis stated in the previous section determined that the four intersections analyzed do not currently warrant a traffic signal. The next step was to determine which intersection control method would be best if signals are removed. The only methods that were analyzed were two-way stop-controlled and all-way stop-controlled intersections; while roundabouts are a great alternative to traffic signals in terms of safety and in some cases delay, this alternative wasn't considered due to cost and footprint needs.

## 3.1 SCENARIO ONE: TWO-WAY STOP-CONTROLLED

The first alternative investigated would be to convert the intersections to two-way stop-controlled (TWSC), where the side street would have a stop sign and the mainline would operate as free flow. For the intersections within the study area, Jefferson St. would be the mainline at all three of its intersections, and Main St. would be at Madison St. This scenario would retain the preferential treatment of Jefferson St. that the signalized operation provides.

### *3.1.1 TWO-WAY STOP-CONTROLLED OPERATION*

Table 4 shows the LOS, delay, and queuing at each intersection when the Synchro model analyzed all intersections as TWSC. Jefferson St. movements are anticipated to operate at LOS A, which would be expected given free flow operation. The expected operation on the side street approaches were all LOS C or better at all intersections except Jefferson St. at Main St. At this intersection, the analysis indicated unacceptable operations on the side street approaches if the mainline approaches weren't controlled. The AM peak displayed LOS F for the northbound left turn lane and LOS E for the southbound through/right turn lane. Similarly, the PM peak displayed LOS E for both northbound and southbound left turn lanes. Not only are these results considered unacceptable under Highway Capacity Manual guidelines, but they are also worse than the current signalized operation.

| Intersection | Approach | Movement | LOS | | Delay (s/veh) | | 95th Percentile Queue (ft) | |
|---|---|---|---|---|---|---|---|---|
| | | | AM | PM | AM | PM | AM | PM |
| Jefferson St. & West St. | Eastbound | LT | A | A | 7.9 | 8 | 0 | 0 |
| | | TH/RT | A | A | 0 | 0 | 0 | 0 |
| | Westbound | LT | A | A | 8.0 | 8.1 | 1 | 3 |
| | | TH/RT | A | A | 0 | 0 | 0 | 0 |
| | Northbound | LT/TH/RT | C | C | 15.4 | 16.4 | 15 | 20 |
| | Southbound | LT/TH/RT | C | C | 15.7 | 17.9 | 11 | 10 |
| Jefferson St. & Main St. | Eastbound | LT | A | A | 7.8 | 8.0 | 1 | 2 |
| | | TH/RT | A | A | 0 | 0 | 0 | 0 |
| | Westbound | LT | A | A | 8.2 | 8.2 | 8 | 5 |
| | | TH/RT | A | A | 0 | 0 | 0 | 0 |
| | Northbound | LT | F | E | 61.5 | 46.9 | 52 | 54 |
| | | TH/RT | C | C | 21.8 | 22.4 | 68 | 67 |
| | Southbound | LT | D | E | 34.8 | 42.0 | 14 | 23 |
| | | TH/RT | E | D | 38.1 | 25.9 | 109 | 53 |
| Jefferson St. & Independence St. | Eastbound | LT | A | A | 8 | 8.1 | 0 | 1 |
| | | TH/RT | A | A | 0 | 0 | 0 | 0 |
| | Westbound | LT | A | A | 7.9 | 8.4 | 1 | 1 |
| | | TH/RT | A | A | 0 | 0 | 0 | 0 |
| | Northbound | LT/TH/RT | B | C | 13.8 | 17 | 8 | 15 |
| | Southbound | LT/TH/RT | B | C | 14.6 | 17.4 | 10 | 16 |
| Main St. & Madison St. | Northbound | LT/TH/RT | A | A | 1.1 | 0.8 | 2 | 1 |
| | Southbound | LT/TH/RT | A | A | 0.2 | 0.7 | 0 | 1 |
| | Eastbound | LT/TH/RT | B | B | 13.0 | 12.4 | 12 | 13 |
| | Westbound | LT/TH/RT | C | B | 17.7 | 12.8 | 8 | 6 |

**Table 4 – Summary of Operations: All Intersections Two-Way Stop-Controlled**

## 3.2 SCENARIO TWO: ALL-WAY STOP-CONTROLLED

A second alternative to signalized intersections would be converting the four intersections to all-way stop-controlled (AWSC). This alternative would slow down progression on Jefferson St., but would decrease delays for side street movements and limit the ability for drivers on Jefferson St. to speed through town. However, a drawback of AWSC is a tendency for drivers to ignore the stop signs when they rarely have to stop for conflicting traffic.

The results from changing every intersection to AWSC are shown in Table 5. No intersections are anticipated to experience operations worse than LOS C. In this scenario there are fewer movements experiencing LOS A than in the other alternatives, which is also to be expected due to all vehicles stopping in AWSC. There is also more queuing in AWSC than the other alternatives because Jefferson St. has many more vehicles than the minor movements and forcing them to stop will cause larger queues during the peak hours.

| Intersection | Approach | Movement | LOS | | Delay (s/veh) | | 95th Percentile Queue (ft) | |
|---|---|---|---|---|---|---|---|---|
| | | | AM | PM | AM | PM | AM | PM |
| Jefferson St. & West St. | Eastbound | LT | A | A | 8.4 | 8.6 | 1 | 1 |
| | | TH/RT | B | B | 12.9 | 13.4 | 58 | 55 |
| | Westbound | LT | A | A | 8.5 | 8.9 | 2 | 4 |
| | | TH/RT | B | B | 11.7 | 12.6 | 44 | 51 |
| | Northbound | LT/TH/RT | A | A | 9.3 | 9.5 | 6 | 9 |
| | Southbound | LT/TH/RT | A | A | 9.2 | 9.3 | 4 | 5 |
| Jefferson St. & Main St. | Eastbound | LT | B | B | 10.5 | 10.5 | 2 | 4 |
| | | TH/RT | C | C | 19.9 | 24.2 | 82 | 112 |
| | Westbound | LT | B | B | 12.5 | 11.4 | 18 | 10 |
| | | TH/RT | B | C | 16.8 | 19.8 | 58 | 81 |
| | Northbound | LT | B | B | 11.7 | 12.2 | 8 | 13 |
| | | TH/RT | B | B | 14.5 | 14.3 | 40 | 37 |
| | Southbound | LT | A | B | 11.2 | 11.7 | 4 | 4 |
| | | TH/RT | B | B | 15 | 13.2 | 38 | 22 |
| Jefferson St. & Independence St. | Eastbound | LT | A | A | 8.4 | 8.8 | 1 | 2 |
| | | TH/RT | B | C | 11.6 | 19.2 | 44 | 109 |
| | Westbound | LT | A | A | 8.5 | 8.8 | 2 | 3 |
| | | TH/RT | B | C | 12.8 | 15.3 | 58 | 78 |
| | Northbound | LT/TH/RT | A | A | 8.9 | 9.7 | 4 | 6 |
| | Southbound | LT/TH/RT | A | A | 9.0 | 9.8 | 6 | 9 |
| Main St. & Madison St. | Northbound | LT/TH/RT | B | A | 11.3 | 9.9 | 44 | 32 |
| | Southbound | LT/TH/RT | B | A | 12.9 | 8.9 | 65 | 19 |
| | Eastbound | LT/TH/RT | A | A | 8.9 | 8.5 | 5 | 8 |
| | Westbound | LT/TH/RT | A | A | 9.1 | 8.3 | 7 | 4 |

**Table 5 – Summary of Operations: All Intersections All-Way Stop-Controlled**

## 3.3 SCENARIO THREE: MIX OF STOP-CONTROL

A third alternative would be to mix scenarios one and two, with TWSC for Jefferson St. at West St., Jefferson St. at Independence St., and Main St. at Madison St., and AWSC for Jefferson St. at Main St.

Since these alternatives were previously analyzed, the results are the same as in Table 4 (TWSC)and Table 5 (AWSC) for each respective intersection type. The next section will compare expected operations for all three proposed scenarios with existing operations.

## 3.4 COMPARING ALL SCENARIOS WITH EXISTING CONDITIONS

In order to compare the scenarios against each other, Table 6 examines the average delay across the entire intersection. The total intersection delay is the average delay that each vehicle experiences. These results, combined with the earlier LOS results for each scenario, assist in determining a preferred scenario and recommendation.

A new delay value was calculated and shown below in Table 6 to give an overall comparison of all three scenarios: total delay. This value took the intersection delay in seconds per vehicle one step further by normalizing the delay of all vehicles using all four intersections. This helped balance the results because the total volume at Jefferson St. at Main St. is about 50% more than the average total volume at the other three. Notice here that the TWSC scenario has the smallest total delay during both peak hours, however this method produced unacceptable LOS for Main St. movements at Jefferson St. as previously discussed. The AWSC scenario shows total delay more than twice as much as the current signal operation. The total delay in Scenario 3 is the closest acceptable alternative to the current signal operation.

| Scenario | Intersection | Intersection LOS | | Intersection Delay (s/veh) | | Total Delay Peak Hours (s/veh) |
|---|---|---|---|---|---|---|
| | | AM Peak | PM Peak | AM Peak | PM Peak | |
| Existing Signal Operation | Jefferson St. & West St. | A | A | 5.7 | 5.8 | 6.7 |
| | Jefferson St. & Main St. | A | A | 9.5 | 8.5 | |
| | Jefferson St. & Independence St. | A | A | 5.0 | 5.0 | |
| | Main St. & Madison St. | A | A | 5.2 | 7.1 | |
| Scenario 1: Two-Way Stop-Controlled | Jefferson St. & West St. | A | A | 2.4 | 2.9 | 5.7 |
| | Jefferson St. & Main St. | B | B | 14.3 | 10.8 | |
| | Jefferson St. & Independence St. | A | A | 2.0 | 2.3 | |
| | Main St. & Madison St. | A | A | 2.1 | 3.0 | |
| Scenario 2: All-Way Stop-Controlled | Jefferson St. & West St. | B | B | 11.9 | 12.3 | 14.1 |
| | Jefferson St. & Main St. | C | C | 16.1 | 18.2 | |
| | Jefferson St. & Independence St. | B | C | 11.7 | 16.2 | |
| | Main St. & Madison St. | B | A | 11.8 | 9.3 | |
| Scenario 3: Mix of TWSC and AWSC | Jefferson St. & West St. | A | A | 2.4 | 2.9 | 7.4 |
| | Jefferson St. & Main St. | C | C | 16.1 | 18.2 | |
| | Jefferson St. & Independence St. | A | A | 2.0 | 2.3 | |
| | Main St. & Madison St. | A | A | 2.1 | 3.0 | |

**Table 6 – Intersection LOS & Delay for Each Scenario**

## 3.5 CONCLUSIONS

The results from Section 2 showed that although the existing conditions are operating well overall, the traffic signals aren't warranted and even with optimal signal timings add unnecessary delay to the minor movements. Removing the signals and changing to stop-control for the intersection was determined to be best for traffic operations in the

downtown grid. It should be noted that IMUTCD Section 4B.02 discusses the appropriate steps to follow when the decision has been made to remove a traffic signal. Those steps are:

1. Determine the appropriate traffic control to be used after removal of the signal.
2. Remove any sight-distance restrictions as necessary.
3. Inform the public of the removal study.
4. Flash or cover the signal heads for a minimum of 90 days, and install the appropriate stop control or other traffic control devices
5. Remove the signal if the engineering data collected during the removal study period confirms that the signal is no longer needed.

This report completed Step 1 by showing the different options for stop-controlled operations. For Step 2, if all-way stop-control is preferred at all intersections no additional sight-distance checks are necessary. If two-way stop-control is desired at any intersection, intersection sight distance needs to be verified before moving forward.

Steps 3 through 5 will be performed in a future project phase. Step 4 alerts drivers that a significant change has occurred with a signal flashing to attract their attention to a changed condition, and allows the City to easily revert to signalized operations if it is shown that the change isn't acceptable. Step 5 exists to confirm the results of this initial study, where conditions may change between the timing of the study and the construction work to remove the signal.

### 3.5.1 INTERSECTION SIGHT DISTANCE

A key component of a two-way stop-controlled intersection design is assuring that adequate sight distance exists for side street vehicles. Sight distance requirements for TWSC intersections are defined in the Indiana Design Manual (IDM) Chapter 46. Sight distance triangles show all the area that a driver needs to be able to see in order to safely make a left-turn, through, or right-turn from a stopped condition. All the requirements used to build the sight distance triangles at each intersection can be seen in Appendix E. Two-way stop-controlled sight distance triangles were constructed for Jefferson St. at West St., Jefferson St. at Independence St., and Main St. at Madison St.; because of the poor LOS for Jefferson St. at Main shown in Table 4, TWSC isn't a valid option there, therefore sight distance triangles were not constructed.


**Figure 5 – Sight Distance Triangles for Northbound West St.**


**Figure 6 – Sight Distance Triangles for Southbound West St.**

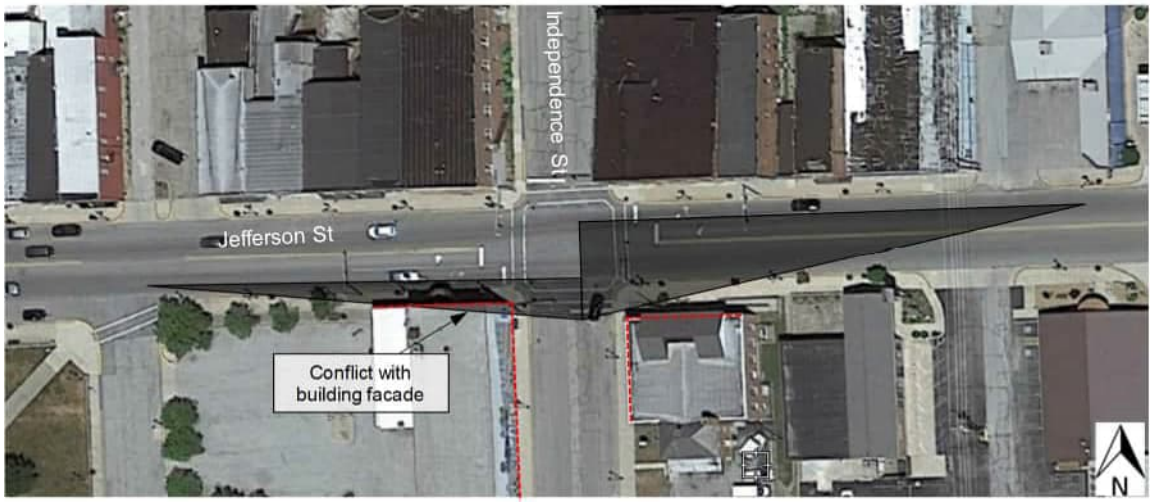



**Figure 7 – Sight Distance Triangles for Northbound Independence St.**

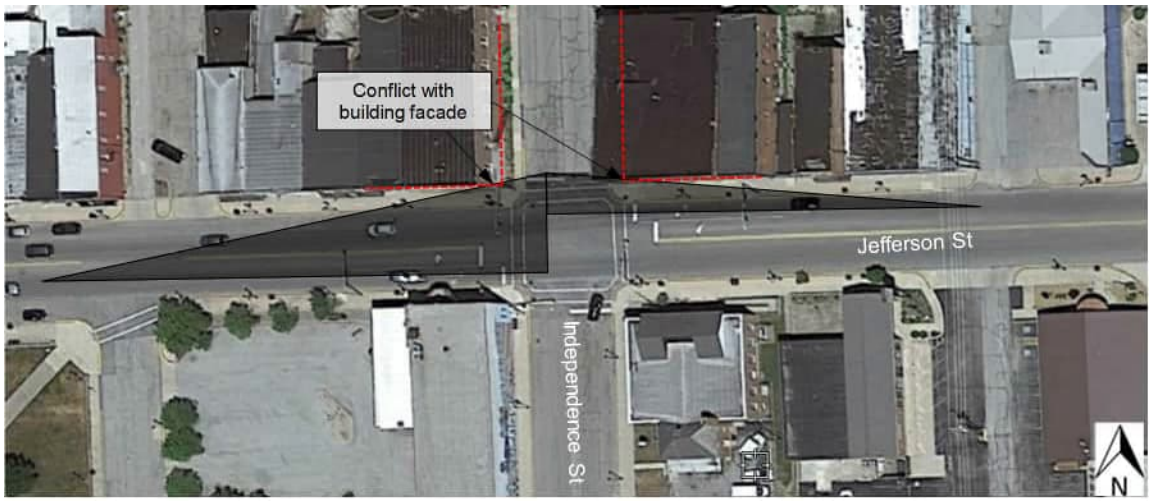



**Figure 8 – Sight Distance Triangles for southbound Independence St.**


**Figure 9 – Sight Distance Triangles for eastbound and westbound Madison St.**

Figures 5 & 6 show the sight distance triangles for West St. at Jefferson St. A tree currently obstructs the sight distance for southbound right-turners. Figures 7 & 8 show the sight distance triangles for Independence St. at Jefferson St. Both directions have conflicts where adequate sight distance is unattainable under the current intersection geometry. Similarly Figure 9 shows that westbound right-turners have inadequate sight distance that cannot be fixed with the current geometry.

Figure 6 stated that two-way stop-controlled operations could exist at Jefferson at West if the tree on the northeast corner was either cut down or trimmed, allowing drivers to see past where it currently obstructs the view. TWSC operations could be achieved at Jefferson St. at Independence St. and Main St. at Madison St. if changes to the geometry were constructed. Each intersection has adequate width on the mainline to construct curb bump outs. These bump outs would only require a small length of mainline pavement, meaning they could be built by removing little to no existing parking spaces. Bump outs would allow the side street stop bars to move closer to the center of the mainline, keeping the buildings from obstructing the sight distance triangles. Any future improvements should include a design-level verification of the intersection sight distance necessary at each approach.

# 4 SUMMARY

INDOT recently relinquished stretches of SR 28 and SR 19 in Tipton, Indiana, which is believed to impact the traffic through the segments now controlled by Tipton. This study was commissioned to examine the existing conditions at the four signalized intersections that are now under the City of Tipton's jurisdiction, determine if the signals are still warranted, and analyze alternate operations if the signals can be removed.

A traffic signal warrant analysis was conducted at each of the four intersections, reviewing the eight-hour signal warrant and the peak hour signal warrant. Conservative traffic volume thresholds were used to ensure the signal warrant analysis considered the worst-case scenario. The results showed that no intersection met either traffic signal warrant.

An analysis was then conducted for changing the intersections to two-way stop controlled (TWSC), all-way stop-controlled (AWSC), and a combination of the two types. To help understand the impact each scenario would have on traffic the anticipated level of service (LOS), delay, and queue length were analyzed at each intersection during the morning (AM) and evening (PM) peak hours of travel for each scenario.

The results showed that TWSC decreased the intersection delay, both compared to existing conditions and to AWSC. However, at the Jefferson St. and Main St. intersection TWSC resulted in unacceptable LOS for Main St. movements. Changing this intersection to AWSC is recommended. At Jefferson at West St., Jefferson St. at Independence St., and Main St. at Madison St. the existing sight distance is inadequate for TWSC. This can be alleviated by trimming a tree at Jefferson St. at West St., and constructing curb bump outs at Jefferson St. at Independence St. and Main St. at Madison St.

The recommended alternative is Scenario 3, combining TWSC and AWSC to achieve the optimal operations through the relinquished corridors. However, if the geometric changes necessary to accommodate TWSC are determined to be infeasible, AWSC is an acceptable alternative at each intersection. Any signal removal should follow the steps from the Indiana Manual on Uniform Traffic Control Devices (IMUTCD) as previously discussed.

# APPENDIX A

TRAFFIC DATA

| | |
|---|---|
| Study Name | Jefferson Street at West Street |
| Project | 2023.D056 Tipton, IN |
| Project Code | |
| Legs and Movements | All Processed Legs & Movements |
| Bin Size | 15 minutes |
| Time Zone | America/Indiana/Indianapolis |
| Start Time | 2023-02-22 06:00:00 |
| End Time | 2023-02-22 19:00:00 |
| Location | Jefferson Street at West Street |
| Latitude and Longitude | 40.282192,-86.042936 |
| | |
| AM Peak | 7:15 AM - 8:15 AM (0.840) |
| Midday Peak | 11:15 AM - 12:15 PM (0.923) |
| PM Peak (Overall Peak Hour) | 4:30 PM - 5:30 PM (0.941) |

| Leg | | | West | | | | | | | | Jefferson | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Direction | | | Southbound | | | | | | | | Westbound | | | | | |
| Start Time | Right | Thru | Left | U-Turn | App Total | Peds CW | Peds CCW | Right | Thru | Left | U-Turn | App Total | Peds CW | Peds CCW | | |
| 2023-02-22 06:00:00 | 2 | 2 | 1 | 0 | **5** | 0 | 0 | 5 | 39 | 0 | 0 | **44** | 0 | 0 | | |
| 2023-02-22 06:15:00 | 1 | 3 | 1 | 0 | **5** | 0 | 0 | 2 | 56 | 2 | 0 | **60** | 0 | 0 | | |
| 2023-02-22 06:30:00 | 3 | 5 | 2 | 0 | **10** | 0 | 0 | 2 | 78 | 2 | 0 | **82** | 0 | 0 | | |
| 2023-02-22 06:45:00 | 5 | 0 | 1 | 0 | **6** | 0 | 0 | 1 | 61 | 2 | 0 | **64** | 0 | 0 | | |
| 2023-02-22 07:00:00 | 0 | 0 | 1 | 0 | **1** | 0 | 0 | 0 | 61 | 3 | 0 | **64** | 0 | 0 | | |
| 2023-02-22 07:15:00 | 0 | 4 | 1 | 0 | **5** | 0 | 0 | 1 | 73 | 4 | 0 | **78** | 0 | 0 | | |
| 2023-02-22 07:30:00 | 1 | 7 | 4 | 0 | **12** | 0 | 0 | 2 | 54 | 0 | 0 | **56** | 0 | 0 | | |
| 2023-02-22 07:45:00 | 1 | 3 | 0 | 0 | **4** | 0 | 0 | 2 | 63 | 3 | 0 | **68** | 0 | 0 | | |
| 2023-02-22 08:00:00 | 1 | 2 | 0 | 0 | **3** | 0 | 0 | 3 | 54 | 4 | 0 | **61** | 0 | 0 | | |
| 2023-02-22 08:15:00 | 1 | 2 | 3 | 0 | **6** | 0 | 0 | 3 | 56 | 1 | 0 | **60** | 0 | 0 | | |
| 2023-02-22 08:30:00 | 2 | 2 | 0 | 0 | **4** | 0 | 0 | 0 | 36 | 2 | 0 | **38** | 0 | 0 | | |
| 2023-02-22 08:45:00 | 2 | 1 | 1 | 0 | **4** | 0 | 0 | 1 | 51 | 3 | 0 | **55** | 0 | 0 | | |
| 2023-02-22 09:00:00 | 4 | 4 | 0 | 0 | **8** | 0 | 0 | 1 | 38 | 6 | 0 | **45** | 0 | 0 | | |
| 2023-02-22 09:15:00 | 0 | 1 | 2 | 0 | **3** | 0 | 0 | 0 | 59 | 8 | 0 | **67** | 0 | 0 | | |
| 2023-02-22 09:30:00 | 2 | 5 | 1 | 0 | **8** | 0 | 0 | 1 | 51 | 2 | 0 | **54** | 1 | 0 | | |
| 2023-02-22 09:45:00 | 2 | 3 | 1 | 0 | **6** | 0 | 0 | 2 | 54 | 0 | 0 | **56** | 0 | 0 | | |
| 2023-02-22 10:00:00 | 2 | 3 | 0 | 0 | **5** | 0 | 0 | 2 | 46 | 3 | 0 | **51** | 0 | 0 | | |
| 2023-02-22 10:15:00 | 2 | 5 | 1 | 0 | **8** | 0 | 0 | 3 | 39 | 3 | 0 | **45** | 0 | 1 | | |
| 2023-02-22 10:30:00 | 0 | 1 | 0 | 0 | **1** | 0 | 0 | 2 | 35 | 4 | 0 | **41** | 0 | 0 | | |
| 2023-02-22 10:45:00 | 2 | 3 | 3 | 0 | **8** | 0 | 0 | 1 | 50 | 9 | 0 | **60** | 0 | 0 | | |
| 2023-02-22 11:00:00 | 1 | 1 | 2 | 0 | **4** | 0 | 0 | 0 | 47 | 12 | 0 | **59** | 0 | 0 | | |
| 2023-02-22 11:15:00 | 3 | 4 | 1 | 0 | **8** | 0 | 0 | 3 | 63 | 9 | 0 | **75** | 0 | 0 | | |
| 2023-02-22 11:30:00 | 2 | 2 | 2 | 0 | **6** | 0 | 0 | 8 | 55 | 7 | 0 | **70** | 1 | 1 | | |
| 2023-02-22 11:45:00 | 1 | 5 | 4 | 0 | **10** | 0 | 0 | 2 | 54 | 4 | 0 | **60** | 0 | 0 | | |
| 2023-02-22 12:00:00 | 1 | 2 | 3 | 0 | **6** | 0 | 1 | 0 | 51 | 8 | 0 | **59** | 0 | 0 | | |
| 2023-02-22 12:15:00 | 0 | 2 | 0 | 0 | **2** | 0 | 1 | 4 | 60 | 2 | 0 | **66** | 0 | 0 | | |
| 2023-02-22 12:30:00 | 1 | 3 | 1 | 0 | **5** | 0 | 0 | 1 | 52 | 10 | 0 | **63** | 1 | 0 | | |
| 2023-02-22 12:45:00 | 1 | 2 | 0 | 0 | **3** | 0 | 0 | 2 | 53 | 5 | 0 | **60** | 0 | 2 | | |
| 2023-02-22 13:00:00 | 1 | 4 | 5 | 0 | **10** | 0 | 0 | 1 | 42 | 6 | 0 | **49** | 0 | 0 | | |
| 2023-02-22 13:15:00 | 2 | 2 | 4 | 0 | **8** | 0 | 0 | 0 | 38 | 4 | 0 | **42** | 0 | 0 | | |
| 2023-02-22 13:30:00 | 1 | 1 | 2 | 0 | **4** | 0 | 0 | 1 | 52 | 3 | 0 | **56** | 0 | 0 | | |
| 2023-02-22 13:45:00 | 0 | 3 | 0 | 0 | **3** | 0 | 0 | 0 | 47 | 2 | 0 | **49** | 0 | 0 | | |
| 2023-02-22 14:00:00 | 2 | 3 | 1 | 0 | **6** | 0 | 0 | 3 | 43 | 4 | 0 | **50** | 0 | 0 | | |
| 2023-02-22 14:15:00 | 3 | 1 | 1 | 0 | **5** | 0 | 0 | 0 | 52 | 8 | 0 | **60** | 0 | 0 | | |
| 2023-02-22 14:30:00 | 1 | 6 | 1 | 0 | **8** | 0 | 1 | 0 | 40 | 7 | 0 | **47** | 1 | 1 | | |
| 2023-02-22 14:45:00 | 0 | 3 | 0 | 0 | **3** | 0 | 0 | 6 | 49 | 6 | 0 | **61** | 0 | 0 | | |
| 2023-02-22 15:00:00 | 1 | 2 | 0 | 0 | **3** | 0 | 0 | 6 | 63 | 5 | 0 | **74** | 0 | 0 | | |
| 2023-02-22 15:15:00 | 1 | 7 | 0 | 0 | **8** | 0 | 2 | 4 | 62 | 3 | 0 | **69** | 1 | 3 | | |
| 2023-02-22 15:30:00 | 1 | 2 | 1 | 0 | **4** | 0 | 0 | 4 | 60 | 8 | 0 | **72** | 0 | 0 | | |
| 2023-02-22 15:45:00 | 0 | 4 | 2 | 0 | **6** | 0 | 0 | 3 | 69 | 7 | 0 | **79** | 0 | 0 | | |
| 2023-02-22 16:00:00 | 3 | 4 | 3 | 0 | **10** | 0 | 0 | 3 | 59 | 9 | 0 | **71** | 0 | 0 | | |
| 2023-02-22 16:15:00 | 1 | 5 | 1 | 0 | **7** | 0 | 0 | 5 | 60 | 7 | 0 | **72** | 0 | 2 | | |
| 2023-02-22 16:30:00 | 0 | 5 | 3 | 0 | **8** | 0 | 0 | 4 | 62 | 6 | 0 | **72** | 0 | 0 | | |
| 2023-02-22 16:45:00 | 0 | 2 | 2 | 0 | **4** | 0 | 0 | 7 | 66 | 12 | 0 | **85** | 0 | 0 | | |
| 2023-02-22 17:00:00 | 1 | 6 | 2 | 0 | **9** | 0 | 0 | 0 | 78 | 6 | 0 | **84** | 0 | 0 | | |
| 2023-02-22 17:15:00 | 2 | 1 | 1 | 0 | **4** | 0 | 0 | 9 | 71 | 14 | 0 | **94** | 0 | 0 | | |
| 2023-02-22 17:30:00 | 1 | 10 | 1 | 0 | **12** | 0 | 0 | 6 | 69 | 5 | 0 | **80** | 0 | 0 | | |
| 2023-02-22 17:45:00 | 2 | 4 | 1 | 0 | **7** | 0 | 0 | 6 | 44 | 7 | 0 | **57** | 0 | 0 | | |
| 2023-02-22 18:00:00 | 1 | 5 | 3 | 0 | **9** | 0 | 0 | 3 | 49 | 4 | 0 | **56** | 0 | 0 | | |
| 2023-02-22 18:15:00 | 0 | 1 | 2 | 0 | **3** | 0 | 1 | 2 | 57 | 5 | 0 | **64** | 0 | 1 | | |
| 2023-02-22 18:30:00 | 3 | 1 | 1 | 0 | **5** | 1 | 0 | 3 | 34 | 5 | 0 | **42** | 0 | 0 | | |
| 2023-02-22 18:45:00 | 1 | 2 | 1 | 0 | **4** | 0 | 0 | 1 | 37 | 6 | 0 | **44** | 0 | 0 | | |
| **Grand Total** | 71 | 161 | 74 | 0 | **306** | 1 | 6 | 131 | 2792 | 267 | 0 | **3190** | 5 | 11 | | |
| **% Approach** | 23.2% | 52.6% | 24.2% | 0.0% | | | | 4.1% | 87.5% | 8.4% | 0.0% | | | | | |
| **% Total** | 1.0% | 2.2% | 1.0% | 0.0% | **4.3%** | | | 1.8% | 39.0% | 3.7% | 0.0% | **44.5%** | | | | |
| **Lights** | 68 | 158 | 74 | 0 | **300** | | | 128 | 2519 | 264 | 0 | **2911** | | | | |
| **% Lights** | 95.8% | 98.1% | 100.0% | 0.0% | **98.0%** | | | 97.7% | 90.2% | 98.9% | 0.0% | **91.3%** | | | | |
| **Articulated Trucks** | 1 | 0 | 0 | 0 | **1** | | | 0 | 211 | 1 | 0 | **212** | | | | |
| **% Articulated Trucks** | 1.4% | 0.0% | 0.0% | 0.0% | **0.3%** | | | 0.0% | 7.6% | 0.4% | 0.0% | **6.6%** | | | | |
| **Buses and Single-Uni** | 2 | 3 | 0 | 0 | **5** | | | 3 | 62 | 2 | 0 | **67** | | | | |
| **% Buses and Single-U** | 2.8% | 1.9% | 0.0% | 0.0% | **1.6%** | | | 2.3% | 2.2% | 0.7% | 0.0% | **2.1%** | | | | |
| **Pedestrians** | | | | | | 1 | 6 | | | | | | 4 | 9 | | |
| **% Pedestrians** | | | | | | 100.0% | 100.0% | | | | | | 80.0% | 81.8% | | |
| **Bicycles on Crosswalk** | | | | | | 0 | 0 | | | | | | 1 | 2 | | |
| **% Bicycles on Crosswalk** | | | | | | 0.0% | 0.0% | | | | | | 20.0% | 18.2% | | |

| | West Northbound | | | | | | | Jefferson Eastbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | U-Turn | App Total | Peds CW | Peds CCW | Right | Thru | Left | U-Turn | App Total | Peds CW | Peds CCW | Int Total |
| 2023-02-22 06:00:00 | 0 | 2 | 1 | 0 | **3** | 0 | 0 | 0 | 33 | 1 | 0 | **34** | 0 | 0 | **86** |
| 2023-02-22 06:15:00 | 3 | 0 | 1 | 0 | **4** | 0 | 0 | 4 | 22 | 0 | 0 | **26** | 0 | 0 | **95** |
| 2023-02-22 06:30:00 | 0 | 2 | 4 | 0 | **6** | 0 | 0 | 5 | 50 | 0 | 0 | **55** | 0 | 0 | **153** |
| 2023-02-22 06:45:00 | 4 | 1 | 3 | 0 | **8** | 0 | 0 | 2 | 34 | 0 | 0 | **36** | 0 | 0 | **114** |
| 2023-02-22 07:00:00 | 1 | 1 | 2 | 0 | **4** | 0 | 0 | 5 | 32 | 0 | 0 | **37** | 0 | 0 | **106** |
| 2023-02-22 07:15:00 | 2 | 0 | 7 | 0 | **9** | 0 | 0 | 2 | 63 | 1 | 0 | **66** | 0 | 0 | **158** |
| 2023-02-22 07:30:00 | 3 | 1 | 9 | 0 | **13** | 0 | 0 | 6 | 59 | 1 | 0 | **66** | 0 | 0 | **147** |
| 2023-02-22 07:45:00 | 9 | 4 | 4 | 0 | **17** | 0 | 0 | 10 | 80 | 1 | 0 | **91** | 0 | 0 | **180** |
| 2023-02-22 08:00:00 | 2 | 2 | 3 | 0 | **7** | 0 | 0 | 7 | 42 | 0 | 0 | **49** | 0 | 0 | **120** |
| 2023-02-22 08:15:00 | 3 | 3 | 4 | 0 | **10** | 0 | 0 | 1 | 43 | 0 | 0 | **44** | 0 | 0 | **120** |
| 2023-02-22 08:30:00 | 4 | 5 | 2 | 0 | **11** | 0 | 0 | 3 | 48 | 1 | 0 | **52** | 0 | 0 | **105** |
| 2023-02-22 08:45:00 | 2 | 1 | 2 | 0 | **5** | 0 | 0 | 3 | 33 | 0 | 0 | **36** | 0 | 1 | **100** |
| 2023-02-22 09:00:00 | 1 | 0 | 2 | 0 | **3** | 0 | 0 | 3 | 62 | 1 | 0 | **66** | 0 | 0 | **122** |
| 2023-02-22 09:15:00 | 4 | 2 | 6 | 0 | **12** | 0 | 0 | 1 | 43 | 3 | 0 | **47** | 0 | 0 | **129** |
| 2023-02-22 09:30:00 | 6 | 4 | 0 | 0 | **10** | 0 | 0 | 2 | 38 | 0 | 0 | **40** | 0 | 0 | **112** |
| 2023-02-22 09:45:00 | 6 | 2 | 4 | 0 | **12** | 0 | 0 | 2 | 44 | 1 | 0 | **47** | 0 | 0 | **121** |
| 2023-02-22 10:00:00 | 1 | 3 | 4 | 0 | **8** | 0 | 0 | 5 | 47 | 2 | 0 | **54** | 0 | 0 | **118** |
| 2023-02-22 10:15:00 | 4 | 1 | 4 | 0 | **9** | 0 | 0 | 4 | 39 | 1 | 0 | **44** | 0 | 1 | **106** |
| 2023-02-22 10:30:00 | 5 | 2 | 5 | 0 | **12** | 0 | 0 | 3 | 46 | 0 | 0 | **49** | 0 | 0 | **103** |
| 2023-02-22 10:45:00 | 10 | 4 | 2 | 0 | **16** | 0 | 0 | 2 | 27 | 2 | 0 | **31** | 0 | 0 | **115** |
| 2023-02-22 11:00:00 | 5 | 0 | 9 | 0 | **14** | 0 | 0 | 6 | 42 | 0 | 0 | **48** | 0 | 0 | **125** |
| 2023-02-22 11:15:00 | 7 | 2 | 6 | 0 | **15** | 0 | 0 | 6 | 54 | 2 | 0 | **62** | 0 | 0 | **160** |
| 2023-02-22 11:30:00 | 5 | 3 | 6 | 0 | **14** | 0 | 0 | 4 | 59 | 2 | 0 | **65** | 0 | 0 | **155** |
| 2023-02-22 11:45:00 | 5 | 5 | 3 | 0 | **13** | 0 | 0 | 6 | 45 | 1 | 0 | **52** | 0 | 0 | **135** |
| 2023-02-22 12:00:00 | 8 | 1 | 5 | 0 | **14** | 0 | 0 | 5 | 56 | 1 | 0 | **62** | 0 | 1 | **141** |
| 2023-02-22 12:15:00 | 5 | 1 | 8 | 0 | **14** | 0 | 0 | 4 | 43 | 2 | 0 | **49** | 0 | 0 | **131** |
| 2023-02-22 12:30:00 | 9 | 2 | 6 | 0 | **17** | 0 | 0 | 2 | 44 | 2 | 0 | **48** | 0 | 0 | **133** |
| 2023-02-22 12:45:00 | 7 | 4 | 8 | 0 | **19** | 0 | 0 | 2 | 52 | 2 | 0 | **56** | 0 | 0 | **138** |
| 2023-02-22 13:00:00 | 6 | 5 | 5 | 0 | **16** | 0 | 0 | 3 | 43 | 2 | 0 | **48** | 0 | 0 | **123** |
| 2023-02-22 13:15:00 | 4 | 7 | 1 | 0 | **12** | 0 | 0 | 1 | 38 | 1 | 0 | **40** | 0 | 0 | **102** |
| 2023-02-22 13:30:00 | 5 | 1 | 6 | 0 | **12** | 0 | 0 | 4 | 55 | 2 | 0 | **61** | 1 | 0 | **133** |
| 2023-02-22 13:45:00 | 8 | 1 | 3 | 0 | **12** | 0 | 0 | 2 | 44 | 0 | 0 | **46** | 0 | 0 | **110** |
| 2023-02-22 14:00:00 | 8 | 3 | 1 | 0 | **12** | 0 | 0 | 0 | 51 | 1 | 0 | **52** | 0 | 0 | **120** |
| 2023-02-22 14:15:00 | 4 | 3 | 4 | 0 | **11** | 0 | 0 | 3 | 53 | 2 | 0 | **58** | 0 | 0 | **134** |
| 2023-02-22 14:30:00 | 8 | 3 | 3 | 0 | **14** | 0 | 1 | 2 | 59 | 1 | 0 | **62** | 0 | 0 | **131** |
| 2023-02-22 14:45:00 | 5 | 2 | 2 | 0 | **9** | 0 | 0 | 9 | 53 | 0 | 0 | **62** | 0 | 0 | **135** |
| 2023-02-22 15:00:00 | 6 | 2 | 8 | 0 | **16** | 0 | 1 | 2 | 57 | 2 | 0 | **61** | 0 | 0 | **154** |
| 2023-02-22 15:15:00 | 8 | 3 | 10 | 0 | **21** | 0 | 0 | 3 | 84 | 2 | 0 | **89** | 0 | 0 | **187** |
| 2023-02-22 15:30:00 | 5 | 1 | 6 | 0 | **12** | 0 | 0 | 4 | 107 | 3 | 0 | **114** | 0 | 0 | **202** |
| 2023-02-22 15:45:00 | 3 | 1 | 5 | 0 | **9** | 0 | 0 | 6 | 68 | 1 | 0 | **75** | 0 | 0 | **169** |
| 2023-02-22 16:00:00 | 8 | 1 | 5 | 0 | **14** | 0 | 0 | 1 | 74 | 2 | 0 | **77** | 0 | 0 | **172** |
| 2023-02-22 16:15:00 | 3 | 8 | 4 | 0 | **15** | 0 | 2 | 4 | 80 | 1 | 0 | **85** | 3 | 0 | **179** |
| 2023-02-22 16:30:00 | 8 | 3 | 9 | 0 | **20** | 0 | 0 | 5 | 84 | 2 | 0 | **91** | 0 | 0 | **191** |
| 2023-02-22 16:45:00 | 6 | 0 | 3 | 0 | **9** | 0 | 0 | 4 | 85 | 2 | 0 | **91** | 0 | 0 | **189** |
| 2023-02-22 17:00:00 | 11 | 3 | 6 | 0 | **20** | 0 | 0 | 3 | 73 | 3 | 0 | **79** | 0 | 0 | **192** |
| 2023-02-22 17:15:00 | 8 | 3 | 11 | 0 | **22** | 1 | 0 | 5 | 82 | 0 | 0 | **87** | 0 | 0 | **207** |
| 2023-02-22 17:30:00 | 3 | 2 | 8 | 0 | **13** | 0 | 0 | 8 | 64 | 2 | 0 | **74** | 0 | 0 | **179** |
| 2023-02-22 17:45:00 | 8 | 4 | 7 | 0 | **19** | 0 | 0 | 6 | 89 | 3 | 0 | **98** | 0 | 0 | **181** |
| 2023-02-22 18:00:00 | 9 | 4 | 5 | 0 | **18** | 0 | 1 | 5 | 56 | 0 | 0 | **61** | 0 | 0 | **144** |
| 2023-02-22 18:15:00 | 4 | 1 | 2 | 0 | **7** | 0 | 0 | 1 | 36 | 0 | 0 | **37** | 0 | 0 | **111** |
| 2023-02-22 18:30:00 | 6 | 1 | 8 | 0 | **15** | 0 | 0 | 6 | 42 | 0 | 0 | **48** | 0 | 0 | **110** |
| 2023-02-22 18:45:00 | 1 | 1 | 4 | 0 | **6** | 0 | 0 | 3 | 26 | 1 | 0 | **30** | 0 | 0 | **84** |
| **Grand Total** | 266 | 121 | 246 | 0 | **633** | 1 | 5 | 195 | 2783 | 60 | 0 | **3038** | 4 | 3 | **7167** |
| **% Approach** | 42.0% | 19.1% | 38.9% | 0.0% | | | | 6.4% | 91.6% | 2.0% | 0.0% | | | | |
| **% Total** | 3.7% | 1.7% | 3.4% | 0.0% | **8.8%** | | | 2.7% | 38.8% | 0.8% | 0.0% | **42.4%** | | | |
| **Lights** | 261 | 119 | 237 | 0 | **617** | | | 191 | 2502 | 58 | 0 | **2751** | | | **6579** |
| **% Lights** | 98.1% | 98.3% | 96.3% | 0.0% | **97.5%** | | | 97.9% | 89.9% | 96.7% | 0.0% | **90.6%** | | | **91.8%** |
| **Articulated Trucks** | 0 | 0 | 2 | 0 | **2** | | | 1 | 208 | 1 | 0 | **210** | | | **425** |
| **% Articulated Trucks** | 0.0% | 0.0% | 0.8% | 0.0% | **0.3%** | | | 0.5% | 7.5% | 1.7% | 0.0% | **6.9%** | | | **5.9%** |
| **Buses and Single-Uni** | 5 | 2 | 7 | 0 | **14** | | | 3 | 73 | 1 | 0 | **77** | | | **163** |
| **% Buses and Single-U** | 1.9% | 1.7% | 2.8% | 0.0% | **2.2%** | | | 1.5% | 2.6% | 1.7% | 0.0% | **2.5%** | | | **2.3%** |
| **Pedestrians** | | | | | | 1 | 5 | | | | | | 1 | 2 | |
| **% Pedestrians** | | | | | | ##### | ##### | | | | | | 25.0% | 66.7% | |
| **Bicycles on Crosswalk** | | | | | | 0 | 0 | | | | | | 3 | 1 | |
| **% Bicycles on Crosswalk** | | | | | | 0.0% | 0.0% | | | | | | 75.0% | 33.3% | |

| | |
|---|---|
| Study Name | Jefferson Street at Main Street |
| Project | 2023.D056 Tipton, IN |
| Project Code | |
| Legs and Movements | All Processed Legs & Movements |
| Bin Size | 15 minutes |
| Time Zone | America/Indiana/Indianapolis |
| Start Time | 2023-02-22 06:00:00 |
| End Time | 2023-02-22 19:00:00 |
| Location | Jefferson Street at Main Street |
| Latitude and Longitude | 40.282213,-86.041182 |
| | |
| AM Peak | 7:15 AM - 8:15 AM (0.828) |
| Midday Peak | 11:15 AM - 12:15 PM (0.966) |
| PM Peak (Overall Peak Hour) | 4:30 PM - 5:30 PM (0.975) |

| Leg | Main | | | | | | | Jefferson | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Direction | Southbound | | | | | | | Westbound | | | | | | |
| Start Time | Right | Thru | Left | U-Turn | **App Total** | Peds CW | Peds CCW | Right | Thru | Left | U-Turn | **App Total** | Peds CW | Peds CCW |
| 2023-02-22 06:00:00 | 6 | 1 | 4 | 0 | **11** | 0 | 0 | 4 | 38 | 7 | 0 | **49** | 0 | 0 |
| 2023-02-22 06:15:00 | 1 | 3 | 3 | 0 | **7** | 0 | 0 | 3 | 54 | 11 | 0 | **68** | 0 | 0 |
| 2023-02-22 06:30:00 | 4 | 7 | 1 | 0 | **12** | 0 | 0 | 3 | 74 | 17 | 0 | **94** | 0 | 0 |
| 2023-02-22 06:45:00 | 5 | 6 | 2 | 0 | **13** | 0 | 0 | 8 | 54 | 10 | 0 | **72** | 0 | 0 |
| 2023-02-22 07:00:00 | 5 | 13 | 6 | 0 | **24** | 0 | 0 | 1 | 58 | 18 | 0 | **77** | 0 | 0 |
| 2023-02-22 07:15:00 | 5 | 19 | 3 | 0 | **27** | 0 | 0 | 6 | 67 | 23 | 0 | **96** | 0 | 0 |
| 2023-02-22 07:30:00 | 5 | 46 | 4 | 0 | **55** | 0 | 0 | 2 | 49 | 34 | 0 | **85** | 0 | 0 |
| 2023-02-22 07:45:00 | 4 | 33 | 5 | 0 | **42** | 0 | 0 | 6 | 53 | 20 | 0 | **79** | 0 | 0 |
| 2023-02-22 08:00:00 | 7 | 19 | 4 | 0 | **30** | 0 | 0 | 4 | 45 | 20 | 0 | **69** | 0 | 0 |
| 2023-02-22 08:15:00 | 7 | 15 | 6 | 0 | **28** | 0 | 0 | 4 | 51 | 12 | 0 | **67** | 0 | 0 |
| 2023-02-22 08:30:00 | 3 | 16 | 4 | 0 | **23** | 0 | 0 | 4 | 25 | 15 | 0 | **44** | 0 | 0 |
| 2023-02-22 08:45:00 | 3 | 9 | 10 | 0 | **22** | 0 | 0 | 7 | 51 | 25 | 0 | **83** | 1 | 1 |
| 2023-02-22 09:00:00 | 3 | 10 | 7 | 0 | **20** | 0 | 0 | 7 | 44 | 13 | 0 | **64** | 0 | 0 |
| 2023-02-22 09:15:00 | 2 | 13 | 10 | 0 | **25** | 0 | 0 | 7 | 57 | 17 | 0 | **81** | 0 | 1 |
| 2023-02-22 09:30:00 | 2 | 11 | 7 | 0 | **20** | 0 | 0 | 4 | 53 | 9 | 0 | **66** | 0 | 0 |
| 2023-02-22 09:45:00 | 2 | 10 | 5 | 0 | **17** | 0 | 0 | 10 | 46 | 24 | 0 | **80** | 0 | 0 |
| 2023-02-22 10:00:00 | 4 | 12 | 10 | 0 | **26** | 0 | 0 | 6 | 40 | 18 | 0 | **64** | 0 | 0 |
| 2023-02-22 10:15:00 | 3 | 13 | 4 | 0 | **20** | 0 | 0 | 8 | 38 | 17 | 0 | **63** | 0 | 0 |
| 2023-02-22 10:30:00 | 3 | 10 | 5 | 0 | **18** | 0 | 0 | 8 | 36 | 14 | 0 | **58** | 0 | 1 |
| 2023-02-22 10:45:00 | 5 | 13 | 4 | 0 | **22** | 0 | 1 | 7 | 53 | 13 | 0 | **73** | 0 | 0 |
| 2023-02-22 11:00:00 | 5 | 12 | 6 | 0 | **23** | 0 | 1 | 9 | 45 | 10 | 0 | **64** | 0 | 0 |
| 2023-02-22 11:15:00 | 5 | 12 | 9 | 0 | **26** | 0 | 0 | 12 | 61 | 12 | 0 | **85** | 0 | 0 |
| 2023-02-22 11:30:00 | 9 | 12 | 4 | 0 | **25** | 0 | 2 | 4 | 52 | 21 | 0 | **77** | 0 | 0 |
| 2023-02-22 11:45:00 | 7 | 13 | 2 | 0 | **22** | 0 | 0 | 5 | 47 | 19 | 0 | **71** | 0 | 0 |
| 2023-02-22 12:00:00 | 5 | 12 | 8 | 0 | **25** | 2 | 0 | 3 | 50 | 16 | 0 | **69** | 0 | 0 |
| 2023-02-22 12:15:00 | 3 | 14 | 9 | 0 | **26** | 0 | 0 | 0 | 53 | 20 | 0 | **73** | 0 | 0 |
| 2023-02-22 12:30:00 | 6 | 18 | 9 | 0 | **33** | 0 | 0 | 5 | 57 | 18 | 0 | **80** | 0 | 0 |
| 2023-02-22 12:45:00 | 7 | 14 | 4 | 0 | **25** | 0 | 0 | 11 | 48 | 21 | 0 | **80** | 0 | 0 |
| 2023-02-22 13:00:00 | 4 | 13 | 5 | 0 | **22** | 1 | 0 | 8 | 35 | 15 | 0 | **58** | 0 | 0 |
| 2023-02-22 13:15:00 | 4 | 15 | 12 | 0 | **31** | 0 | 1 | 2 | 40 | 12 | 0 | **54** | 0 | 0 |
| 2023-02-22 13:30:00 | 7 | 12 | 3 | 0 | **22** | 0 | 0 | 5 | 47 | 19 | 0 | **71** | 0 | 0 |
| 2023-02-22 13:45:00 | 2 | 10 | 7 | 0 | **19** | 0 | 0 | 2 | 46 | 13 | 0 | **61** | 0 | 0 |
| 2023-02-22 14:00:00 | 3 | 5 | 6 | 0 | **14** | 0 | 1 | 11 | 37 | 13 | 0 | **61** | 0 | 0 |
| 2023-02-22 14:15:00 | 6 | 13 | 7 | 0 | **26** | 2 | 2 | 3 | 50 | 20 | 0 | **73** | 0 | 0 |
| 2023-02-22 14:30:00 | 6 | 17 | 5 | 0 | **28** | 1 | 0 | 10 | 44 | 20 | 0 | **74** | 0 | 2 |
| 2023-02-22 14:45:00 | 6 | 15 | 7 | 0 | **28** | 1 | 1 | 5 | 50 | 19 | 0 | **74** | 0 | 0 |
| 2023-02-22 15:00:00 | 2 | 5 | 6 | 0 | **13** | 0 | 0 | 10 | 57 | 10 | 0 | **77** | 0 | 0 |
| 2023-02-22 15:15:00 | 6 | 15 | 10 | 0 | **31** | 0 | 1 | 5 | 53 | 18 | 0 | **76** | 0 | 2 |
| 2023-02-22 15:30:00 | 7 | 10 | 13 | 0 | **30** | 2 | 0 | 8 | 47 | 19 | 0 | **74** | 1 | 1 |
| 2023-02-22 15:45:00 | 5 | 10 | 5 | 0 | **20** | 0 | 0 | 11 | 57 | 13 | 0 | **81** | 1 | 0 |
| 2023-02-22 16:00:00 | 4 | 12 | 3 | 0 | **19** | 0 | 1 | 4 | 54 | 16 | 0 | **74** | 0 | 0 |
| 2023-02-22 16:15:00 | 3 | 14 | 8 | 0 | **25** | 1 | 0 | 3 | 59 | 17 | 0 | **79** | 0 | 0 |
| 2023-02-22 16:30:00 | 4 | 16 | 9 | 0 | **29** | 1 | 0 | 13 | 58 | 18 | 0 | **89** | 0 | 0 |
| 2023-02-22 16:45:00 | 6 | 16 | 6 | 0 | **28** | 1 | 0 | 10 | 67 | 16 | 0 | **93** | 0 | 0 |
| 2023-02-22 17:00:00 | 3 | 25 | 4 | 0 | **32** | 0 | 1 | 3 | 64 | 12 | 0 | **79** | 0 | 0 |
| 2023-02-22 17:15:00 | 6 | 14 | 3 | 0 | **23** | 0 | 1 | 6 | 70 | 20 | 0 | **96** | 0 | 0 |
| 2023-02-22 17:30:00 | 2 | 16 | 5 | 0 | **23** | 0 | 1 | 12 | 57 | 23 | 0 | **92** | 1 | 1 |
| 2023-02-22 17:45:00 | 3 | 24 | 3 | 0 | **30** | 0 | 0 | 10 | 44 | 21 | 0 | **75** | 0 | 0 |
| 2023-02-22 18:00:00 | 0 | 9 | 4 | 0 | **13** | 1 | 0 | 0 | 44 | 9 | 0 | **53** | 0 | 0 |
| 2023-02-22 18:15:00 | 5 | 5 | 7 | 0 | **17** | 0 | 0 | 8 | 53 | 16 | 0 | **77** | 0 | 0 |
| 2023-02-22 18:30:00 | 3 | 3 | 6 | 0 | **12** | 1 | 1 | 5 | 32 | 4 | 0 | **41** | 0 | 0 |
| 2023-02-22 18:45:00 | 4 | 4 | 5 | 0 | **13** | 2 | 0 | 1 | 32 | 15 | 0 | **48** | 0 | 0 |
| **Grand Total** | 227 | 684 | 304 | 0 | **1215** | 16 | 15 | 313 | 2596 | 852 | 0 | **3761** | 4 | 9 |
| **% Approach** | 18.7% | 56.3% | 25.0% | 0.0% | | | | 8.3% | 69.0% | 22.7% | 0.0% | | | |
| **% Total** | 2.2% | 6.8% | 3.0% | 0.0% | **12.0%** | | | 3.1% | 25.7% | 8.4% | 0.0% | **37.2%** | | |
| **Lights** | 220 | 669 | 298 | 0 | **1187** | | | 307 | 2337 | 832 | 0 | **3476** | | |
| **% Lights** | 96.9% | 97.8% | 98.0% | 0.0% | **97.7%** | | | 98.1% | 90.0% | 97.7% | 0.0% | **92.4%** | | |
| **Articulated Trucks** | 2 | 1 | 1 | 0 | **4** | | | 0 | 209 | 10 | 0 | **219** | | |
| **% Articulated Trucks** | 0.9% | 0.1% | 0.3% | 0.0% | **0.3%** | | | 0.0% | 8.1% | 1.2% | 0.0% | **5.8%** | | |
| **Buses and Single-Un** | 5 | 14 | 5 | 0 | **24** | | | 6 | 50 | 10 | 0 | **66** | | |
| **% Buses and Single-U** | 2.2% | 2.0% | 1.6% | 0.0% | **2.0%** | | | 1.9% | 1.9% | 1.2% | 0.0% | **1.8%** | | |
| **Pedestrians** | | | | | | 16 | 15 | | | | | | 4 | 9 |
| **% Pedestrians** | | | | | | 100.0% | 100.0% | | | | | | 100.0% | 100.0% |
| **Bicycles on Crosswalk** | | | | | | 0 | 0 | | | | | | 0 | 0 |
| **% Bicycles on Crosswalk** | | | | | | 0.0% | 0.0% | | | | | | 0.0% | 0.0% |

| | Main | | | | | | | Jefferson | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Northbound | | | | | | | Eastbound | | | | | | | |
| Start Time | Right | Thru | Left | U-Turn | **App Total** | Peds CW | Peds CCW | Right | Thru | Left | U-Turn | **App Total** | Peds CW | Peds CCW | **Int Total** |
| 2023-02-22 06:00:00 | 5 | 1 | 2 | 0 | **8** | 0 | 0 | 8 | 25 | 1 | 0 | **34** | 0 | 0 | **102** |
| 2023-02-22 06:15:00 | 2 | 5 | 3 | 0 | **10** | 0 | 0 | 8 | 17 | 1 | 0 | **26** | 0 | 0 | **111** |
| 2023-02-22 06:30:00 | 1 | 7 | 3 | 0 | **11** | 0 | 0 | 4 | 46 | 3 | 0 | **53** | 0 | 0 | **170** |
| 2023-02-22 06:45:00 | 10 | 10 | 6 | 0 | **26** | 0 | 0 | 8 | 31 | 2 | 0 | **41** | 0 | 0 | **152** |
| 2023-02-22 07:00:00 | 6 | 6 | 4 | 0 | **16** | 0 | 0 | 12 | 25 | 1 | 0 | **38** | 0 | 0 | **155** |
| 2023-02-22 07:15:00 | 10 | 8 | 5 | 0 | **23** | 0 | 0 | 9 | 54 | 2 | 0 | **65** | 0 | 0 | **211** |
| 2023-02-22 07:30:00 | 11 | 10 | 5 | 0 | **26** | 0 | 0 | 24 | 38 | 1 | 0 | **63** | 0 | 1 | **229** |
| 2023-02-22 07:45:00 | 27 | 24 | 15 | 0 | **66** | 0 | 0 | 27 | 51 | 8 | 0 | **86** | 0 | 0 | **273** |
| 2023-02-22 08:00:00 | 18 | 16 | 7 | 0 | **41** | 0 | 0 | 6 | 42 | 3 | 0 | **51** | 0 | 0 | **191** |
| 2023-02-22 08:15:00 | 13 | 11 | 4 | 0 | **28** | 0 | 0 | 5 | 38 | 2 | 0 | **45** | 0 | 0 | **168** |
| 2023-02-22 08:30:00 | 8 | 13 | 5 | 0 | **26** | 0 | 0 | 8 | 43 | 1 | 0 | **52** | 0 | 0 | **145** |
| 2023-02-22 08:45:00 | 17 | 8 | 2 | 0 | **27** | 0 | 0 | 4 | 29 | 5 | 0 | **38** | 0 | 0 | **170** |
| 2023-02-22 09:00:00 | 15 | 3 | 6 | 0 | **24** | 0 | 0 | 11 | 49 | 4 | 0 | **64** | 0 | 0 | **172** |
| 2023-02-22 09:15:00 | 17 | 11 | 8 | 0 | **36** | 0 | 0 | 5 | 42 | 3 | 0 | **50** | 0 | 0 | **192** |
| 2023-02-22 09:30:00 | 11 | 11 | 5 | 0 | **27** | 0 | 0 | 8 | 34 | 5 | 0 | **47** | 0 | 0 | **160** |
| 2023-02-22 09:45:00 | 20 | 10 | 8 | 0 | **38** | 0 | 0 | 2 | 44 | 4 | 0 | **50** | 0 | 0 | **185** |
| 2023-02-22 10:00:00 | 7 | 17 | 6 | 0 | **30** | 0 | 0 | 2 | 44 | 1 | 0 | **47** | 0 | 0 | **167** |
| 2023-02-22 10:15:00 | 7 | 7 | 8 | 0 | **22** | 0 | 0 | 10 | 28 | 1 | 0 | **39** | 0 | 0 | **144** |
| 2023-02-22 10:30:00 | 15 | 9 | 5 | 0 | **29** | 0 | 1 | 7 | 42 | 3 | 0 | **52** | 0 | 0 | **157** |
| 2023-02-22 10:45:00 | 15 | 9 | 5 | 0 | **29** | 0 | 0 | 6 | 32 | 1 | 0 | **39** | 0 | 2 | **163** |
| 2023-02-22 11:00:00 | 14 | 12 | 13 | 0 | **39** | 0 | 0 | 6 | 38 | 5 | 0 | **49** | 1 | 1 | **175** |
| 2023-02-22 11:15:00 | 19 | 5 | 6 | 0 | **30** | 1 | 0 | 5 | 52 | 6 | 0 | **63** | 1 | 0 | **204** |
| 2023-02-22 11:30:00 | 15 | 16 | 6 | 0 | **37** | 0 | 0 | 7 | 57 | 8 | 0 | **72** | 1 | 0 | **211** |
| 2023-02-22 11:45:00 | 15 | 16 | 6 | 0 | **37** | 0 | 0 | 8 | 51 | 3 | 0 | **62** | 0 | 0 | **192** |
| 2023-02-22 12:00:00 | 19 | 12 | 5 | 0 | **36** | 0 | 0 | 8 | 66 | 4 | 0 | **78** | 0 | 0 | **208** |
| 2023-02-22 12:15:00 | 16 | 10 | 7 | 0 | **33** | 0 | 0 | 3 | 39 | 8 | 0 | **50** | 0 | 0 | **182** |
| 2023-02-22 12:30:00 | 20 | 14 | 6 | 0 | **40** | 0 | 0 | 6 | 43 | 5 | 0 | **54** | 0 | 0 | **207** |
| 2023-02-22 12:45:00 | 7 | 8 | 11 | 0 | **26** | 0 | 0 | 10 | 49 | 9 | 0 | **68** | 0 | 0 | **199** |
| 2023-02-22 13:00:00 | 19 | 9 | 8 | 0 | **36** | 0 | 0 | 12 | 42 | 4 | 0 | **58** | 0 | 0 | **174** |
| 2023-02-22 13:15:00 | 12 | 10 | 3 | 0 | **25** | 0 | 0 | 7 | 46 | 0 | 0 | **53** | 0 | 0 | **163** |
| 2023-02-22 13:30:00 | 8 | 7 | 4 | 0 | **19** | 0 | 0 | 9 | 49 | 2 | 0 | **60** | 0 | 0 | **172** |
| 2023-02-22 13:45:00 | 13 | 5 | 4 | 0 | **22** | 0 | 0 | 15 | 39 | 6 | 0 | **60** | 0 | 0 | **162** |
| 2023-02-22 14:00:00 | 19 | 12 | 9 | 0 | **40** | 0 | 0 | 5 | 59 | 4 | 0 | **68** | 0 | 0 | **183** |
| 2023-02-22 14:15:00 | 14 | 9 | 5 | 0 | **28** | 0 | 0 | 5 | 62 | 4 | 0 | **71** | 0 | 0 | **198** |
| 2023-02-22 14:30:00 | 8 | 10 | 6 | 0 | **24** | 0 | 0 | 8 | 61 | 2 | 0 | **71** | 0 | 0 | **197** |
| 2023-02-22 14:45:00 | 12 | 15 | 4 | 0 | **31** | 0 | 0 | 13 | 45 | 8 | 0 | **66** | 0 | 0 | **199** |
| 2023-02-22 15:00:00 | 23 | 34 | 21 | 0 | **78** | 0 | 0 | 9 | 58 | 8 | 0 | **75** | 0 | 0 | **243** |
| 2023-02-22 15:15:00 | 25 | 18 | 13 | 0 | **56** | 1 | 0 | 13 | 75 | 5 | 0 | **93** | 0 | 0 | **256** |
| 2023-02-22 15:30:00 | 15 | 23 | 11 | 0 | **49** | 0 | 0 | 14 | 105 | 6 | 0 | **125** | 0 | 0 | **278** |
| 2023-02-22 15:45:00 | 23 | 12 | 16 | 0 | **51** | 1 | 0 | 9 | 64 | 7 | 0 | **80** | 0 | 0 | **232** |
| 2023-02-22 16:00:00 | 21 | 19 | 17 | 0 | **57** | 0 | 0 | 11 | 74 | 6 | 0 | **91** | 0 | 0 | **241** |
| 2023-02-22 16:15:00 | 20 | 18 | 13 | 0 | **51** | 0 | 0 | 7 | 81 | 4 | 0 | **92** | 1 | 0 | **247** |
| 2023-02-22 16:30:00 | 25 | 24 | 10 | 0 | **59** | 0 | 0 | 13 | 77 | 4 | 0 | **94** | 1 | 0 | **271** |
| 2023-02-22 16:45:00 | 20 | 8 | 11 | 0 | **39** | 0 | 0 | 9 | 80 | 11 | 0 | **100** | 0 | 0 | **260** |
| 2023-02-22 17:00:00 | 19 | 25 | 18 | 0 | **62** | 0 | 0 | 11 | 80 | 8 | 0 | **99** | 0 | 0 | **272** |
| 2023-02-22 17:15:00 | 32 | 13 | 19 | 0 | **64** | 0 | 0 | 5 | 86 | 3 | 0 | **94** | 0 | 0 | **277** |
| 2023-02-22 17:30:00 | 21 | 7 | 13 | 0 | **41** | 0 | 0 | 12 | 60 | 3 | 0 | **75** | 0 | 0 | **231** |
| 2023-02-22 17:45:00 | 19 | 23 | 7 | 0 | **49** | 0 | 0 | 17 | 83 | 3 | 0 | **103** | 2 | 0 | **257** |
| 2023-02-22 18:00:00 | 17 | 14 | 12 | 0 | **43** | 0 | 0 | 9 | 58 | 6 | 0 | **73** | 0 | 0 | **182** |
| 2023-02-22 18:15:00 | 12 | 9 | 7 | 0 | **28** | 0 | 0 | 6 | 37 | 4 | 0 | **47** | 0 | 0 | **169** |
| 2023-02-22 18:30:00 | 11 | 8 | 7 | 0 | **26** | 0 | 0 | 11 | 40 | 4 | 0 | **55** | 0 | 0 | **134** |
| 2023-02-22 18:45:00 | 15 | 10 | 7 | 0 | **32** | 0 | 0 | 4 | 26 | 1 | 0 | **31** | 0 | 0 | **124** |
| **Grand Total** | 783 | 631 | 417 | 0 | **1831** | 3 | 1 | 461 | 2636 | 213 | 0 | **3310** | 7 | 4 | **10117** |
| **% Approach** | 42.8% | 34.5% | 22.8% | 0.0% | | | | 13.9% | 79.6% | 6.4% | 0.0% | | | | |
| **% Total** | 7.7% | 6.2% | 4.1% | 0.0% | **18.1%** | | | 4.6% | 26.1% | 2.1% | 0.0% | **32.7%** | | | |
| **Lights** | 752 | 613 | 396 | 0 | **1761** | | | 438 | 2381 | 206 | 0 | **3025** | | | **9449** |
| **% Lights** | 96.0% | 97.1% | 95.0% | 0.0% | **96.2%** | | | 95.0% | 90.3% | 96.7% | 0.0% | **91.4%** | | | **93.4%** |
| **Articulated Trucks** | 11 | 2 | 7 | 0 | **20** | | | 6 | 200 | 3 | 0 | **209** | | | **452** |
| **% Articulated Trucks** | 1.4% | 0.3% | 1.7% | 0.0% | **1.1%** | | | 1.3% | 7.6% | 1.4% | 0.0% | **6.3%** | | | **4.5%** |
| **Buses and Single-Un** | 20 | 16 | 14 | 0 | **50** | | | 17 | 55 | 4 | 0 | **76** | | | **216** |
| **% Buses and Single-U** | 2.6% | 2.5% | 3.4% | 0.0% | **2.7%** | | | 3.7% | 2.1% | 1.9% | 0.0% | **2.3%** | | | **2.1%** |
| **Pedestrians** | | | | | | 3 | 1 | | | | | | 6 | 4 | |
| **% Pedestrians** | | | | | | ##### | ##### | | | | | | 85.7% | ##### | |
| **Bicycles on Crosswalk** | | | | | | 0 | 0 | | | | | | 1 | 0 | |
| **% Bicycles on Crosswalk** | | | | | | 0.0% | 0.0% | | | | | | 14.3% | 0.0% | |

| | |
|---|---|
| Study Name | Jefferson Street at Independence Street |
| Project | 2023.D056 Tipton, IN |
| Project Code | |
| Legs and Movements | All Processed Legs & Movements |
| Bin Size | 15 minutes |
| Time Zone | America/Indiana/Indianapolis |
| Start Time | 2023-02-22 06:00:00 |
| End Time | 2023-02-22 19:00:00 |
| Location | Jefferson Street at Independence Street |
| Latitude and Longitude | 40.282287,-86.039497 |
| | |
| AM Peak | 7:15 AM - 8:15 AM (0.857) |
| Midday Peak | 11:30 AM - 12:30 PM (0.942) |
| PM Peak (Overall Peak Hour) | 4:30 PM - 5:30 PM (0.903) |

| Leg | Independence | | | | | | | Jefferson | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Direction | Southbound | | | | | | | Westbound | | | | | | |
| Start Time | Right | Thru | Left | U-Turn | App Total | Peds CW | Peds CCW | Right | Thru | Left | U-Turn | App Total | Peds CW | Peds CCW |
| 2023-02-22 06:00:00 | 2 | 0 | 1 | 0 | **3** | 0 | 0 | 1 | 45 | 1 | 0 | **47** | 0 | 0 |
| 2023-02-22 06:15:00 | 5 | 1 | 2 | 0 | **8** | 0 | 0 | 0 | 66 | 0 | 0 | **66** | 0 | 0 |
| 2023-02-22 06:30:00 | 4 | 1 | 0 | 0 | **5** | 0 | 0 | 2 | 86 | 3 | 0 | **91** | 0 | 0 |
| 2023-02-22 06:45:00 | 3 | 1 | 2 | 0 | **6** | 0 | 0 | 4 | 69 | 2 | 0 | **75** | 0 | 0 |
| 2023-02-22 07:00:00 | 3 | 3 | 4 | 0 | **10** | 0 | 0 | 3 | 75 | 5 | 0 | **83** | 0 | 0 |
| 2023-02-22 07:15:00 | 9 | 0 | 0 | 0 | **9** | 0 | 0 | 0 | 88 | 6 | 0 | **94** | 0 | 0 |
| 2023-02-22 07:30:00 | 1 | 5 | 3 | 0 | **9** | 0 | 0 | 2 | 88 | 2 | 0 | **92** | 0 | 0 |
| 2023-02-22 07:45:00 | 3 | 5 | 5 | 0 | **13** | 0 | 0 | 8 | 83 | 4 | 0 | **95** | 0 | 0 |
| 2023-02-22 08:00:00 | 3 | 4 | 1 | 0 | **8** | 0 | 0 | 4 | 66 | 5 | 0 | **75** | 0 | 0 |
| 2023-02-22 08:15:00 | 4 | 2 | 1 | 0 | **7** | 0 | 0 | 2 | 66 | 6 | 0 | **74** | 0 | 0 |
| 2023-02-22 08:30:00 | 1 | 2 | 1 | 0 | **4** | 0 | 0 | 6 | 38 | 5 | 0 | **49** | 0 | 0 |
| 2023-02-22 08:45:00 | 5 | 4 | 3 | 0 | **12** | 0 | 0 | 5 | 80 | 3 | 0 | **88** | 1 | 0 |
| 2023-02-22 09:00:00 | 0 | 1 | 5 | 0 | **6** | 0 | 1 | 4 | 64 | 1 | 0 | **69** | 0 | 1 |
| 2023-02-22 09:15:00 | 2 | 1 | 2 | 0 | **5** | 0 | 0 | 2 | 80 | 6 | 0 | **88** | 0 | 0 |
| 2023-02-22 09:30:00 | 3 | 3 | 3 | 0 | **9** | 0 | 0 | 3 | 63 | 4 | 0 | **70** | 0 | 0 |
| 2023-02-22 09:45:00 | 2 | 4 | 3 | 0 | **9** | 0 | 0 | 5 | 88 | 4 | 0 | **97** | 0 | 0 |
| 2023-02-22 10:00:00 | 2 | 3 | 5 | 0 | **10** | 0 | 0 | 7 | 60 | 3 | 0 | **70** | 0 | 0 |
| 2023-02-22 10:15:00 | 1 | 4 | 3 | 0 | **8** | 0 | 0 | 1 | 60 | 5 | 0 | **66** | 0 | 0 |
| 2023-02-22 10:30:00 | 3 | 3 | 1 | 0 | **7** | 0 | 0 | 4 | 60 | 2 | 0 | **66** | 0 | 0 |
| 2023-02-22 10:45:00 | 5 | 3 | 3 | 0 | **11** | 0 | 0 | 6 | 66 | 5 | 0 | **77** | 1 | 0 |
| 2023-02-22 11:00:00 | 2 | 3 | 5 | 0 | **10** | 0 | 0 | 5 | 61 | 2 | 0 | **68** | 0 | 0 |
| 2023-02-22 11:15:00 | 1 | 2 | 3 | 0 | **6** | 0 | 0 | 0 | 79 | 1 | 0 | **80** | 0 | 0 |
| 2023-02-22 11:30:00 | 2 | 3 | 3 | 0 | **8** | 0 | 0 | 3 | 78 | 3 | 0 | **84** | 0 | 0 |
| 2023-02-22 11:45:00 | 4 | 3 | 7 | 0 | **14** | 0 | 0 | 5 | 70 | 5 | 0 | **80** | 0 | 0 |
| 2023-02-22 12:00:00 | 4 | 4 | 3 | 0 | **11** | 0 | 0 | 6 | 64 | 7 | 0 | **77** | 1 | 0 |
| 2023-02-22 12:15:00 | 7 | 4 | 5 | 0 | **16** | 0 | 1 | 7 | 72 | 3 | 0 | **82** | 0 | 1 |
| 2023-02-22 12:30:00 | 7 | 1 | 4 | 0 | **12** | 0 | 0 | 8 | 75 | 10 | 0 | **93** | 0 | 0 |
| 2023-02-22 12:45:00 | 3 | 4 | 2 | 0 | **9** | 1 | 0 | 5 | 81 | 8 | 0 | **94** | 0 | 0 |
| 2023-02-22 13:00:00 | 3 | 7 | 7 | 0 | **17** | 0 | 1 | 4 | 57 | 3 | 0 | **64** | 0 | 0 |
| 2023-02-22 13:15:00 | 3 | 3 | 7 | 0 | **13** | 0 | 0 | 4 | 51 | 4 | 0 | **59** | 0 | 0 |
| 2023-02-22 13:30:00 | 1 | 5 | 5 | 0 | **11** | 0 | 0 | 7 | 67 | 6 | 0 | **80** | 0 | 0 |
| 2023-02-22 13:45:00 | 3 | 2 | 5 | 0 | **10** | 0 | 0 | 3 | 58 | 6 | 0 | **67** | 1 | 0 |
| 2023-02-22 14:00:00 | 4 | 3 | 6 | 0 | **13** | 0 | 0 | 3 | 58 | 4 | 0 | **65** | 0 | 0 |
| 2023-02-22 14:15:00 | 2 | 1 | 4 | 0 | **7** | 0 | 0 | 2 | 70 | 2 | 0 | **74** | 0 | 0 |
| 2023-02-22 14:30:00 | 4 | 4 | 3 | 0 | **11** | 0 | 1 | 5 | 71 | 5 | 0 | **81** | 0 | 0 |
| 2023-02-22 14:45:00 | 4 | 0 | 2 | 0 | **6** | 1 | 0 | 3 | 65 | 4 | 0 | **72** | 0 | 0 |
| 2023-02-22 15:00:00 | 3 | 4 | 4 | 0 | **11** | 0 | 0 | 3 | 77 | 7 | 0 | **87** | 0 | 0 |
| 2023-02-22 15:15:00 | 0 | 7 | 4 | 0 | **11** | 0 | 1 | 5 | 75 | 3 | 0 | **83** | 0 | 0 |
| 2023-02-22 15:30:00 | 3 | 3 | 2 | 0 | **8** | 0 | 0 | 4 | 73 | 7 | 0 | **84** | 0 | 0 |
| 2023-02-22 15:45:00 | 3 | 11 | 6 | 0 | **20** | 1 | 1 | 6 | 73 | 2 | 0 | **81** | 0 | 0 |
| 2023-02-22 16:00:00 | 7 | 4 | 4 | 0 | **15** | 0 | 0 | 5 | 72 | 4 | 0 | **81** | 0 | 0 |
| 2023-02-22 16:15:00 | 4 | 4 | 2 | 0 | **10** | 0 | 0 | 3 | 78 | 2 | 0 | **83** | 0 | 0 |
| 2023-02-22 16:30:00 | 7 | 4 | 2 | 0 | **13** | 2 | 0 | 6 | 80 | 5 | 0 | **91** | 1 | 0 |
| 2023-02-22 16:45:00 | 6 | 2 | 0 | 0 | **8** | 0 | 0 | 5 | 94 | 2 | 0 | **101** | 0 | 0 |
| 2023-02-22 17:00:00 | 4 | 4 | 3 | 0 | **11** | 1 | 0 | 6 | 76 | 3 | 0 | **85** | 0 | 0 |
| 2023-02-22 17:15:00 | 7 | 4 | 5 | 0 | **16** | 0 | 0 | 7 | 86 | 5 | 0 | **98** | 0 | 0 |
| 2023-02-22 17:30:00 | 3 | 4 | 5 | 0 | **12** | 0 | 0 | 4 | 89 | 7 | 0 | **100** | 0 | 2 |
| 2023-02-22 17:45:00 | 4 | 1 | 3 | 0 | **8** | 0 | 0 | 3 | 70 | 4 | 0 | **77** | 0 | 0 |
| 2023-02-22 18:00:00 | 8 | 2 | 2 | 0 | **12** | 0 | 0 | 3 | 51 | 4 | 0 | **58** | 0 | 0 |
| 2023-02-22 18:15:00 | 1 | 1 | 5 | 0 | **7** | 0 | 0 | 1 | 78 | 6 | 0 | **85** | 0 | 0 |
| 2023-02-22 18:30:00 | 1 | 3 | 1 | 0 | **5** | 1 | 0 | 5 | 36 | 2 | 0 | **43** | 0 | 0 |
| 2023-02-22 18:45:00 | 0 | 3 | 2 | 0 | **5** | 1 | 0 | 1 | 48 | 4 | 0 | **53** | 0 | 0 |
| **Grand Total** | 176 | 160 | 169 | 0 | **505** | 8 | 6 | 206 | 3624 | 212 | 0 | **4042** | 5 | 4 |
| **% Approach** | 34.9% | 31.7% | 33.5% | 0.0% | | | | 5.1% | 89.7% | 5.2% | 0.0% | | | |
| **% Total** | 2.0% | 1.8% | 1.9% | 0.0% | **5.8%** | | | 2.4% | 41.7% | 2.4% | 0.0% | **46.5%** | | |
| **Lights** | 174 | 158 | 164 | 0 | **496** | | | 203 | 3350 | 208 | 0 | **3761** | | |
| **% Lights** | 98.9% | 98.8% | 97.0% | 0.0% | **98.2%** | | | 98.5% | 92.4% | 98.1% | 0.0% | **93.0%** | | |
| **Articulated Trucks** | 0 | 1 | 2 | 0 | **3** | | | 0 | 219 | 0 | 0 | **219** | | |
| **% Articulated Trucks** | 0.0% | 0.6% | 1.2% | 0.0% | **0.6%** | | | 0.0% | 6.0% | 0.0% | 0.0% | **5.4%** | | |
| **Buses and Single-Uni** | 2 | 1 | 3 | 0 | **6** | | | 3 | 55 | 4 | 0 | **62** | | |
| **% Buses and Single-U** | 1.1% | 0.6% | 1.8% | 0.0% | **1.2%** | | | 1.5% | 1.5% | 1.9% | 0.0% | **1.5%** | | |
| **Pedestrians** | | | | | | 8 | 6 | | | | | | 4 | 4 |
| **% Pedestrians** | | | | | | 100.0% | 100.0% | | | | | | 80.0% | 100.0% |
| **Bicycles on Crosswalk** | | | | | | 0 | 0 | | | | | | 1 | 0 |
| **% Bicycles on Crosswalk** | | | | | | 0.0% | 0.0% | | | | | | 20.0% | 0.0% |

| Leg | Independence | | | | | | | Jefferson | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Direction | Northbound | | | | | | | Eastbound | | | | | | | |
| Start Time | Right | Thru | Left | U-Turn | App Total | Peds CW | Peds CCW | Right | Thru | Left | U-Turn | App Total | Peds CW | Peds CCW | Int Total |
| 2023-02-22 06:00:00 | 1 | 0 | 1 | 0 | **2** | 0 | 0 | 2 | 31 | 1 | 0 | **34** | 0 | 0 | **86** |
| 2023-02-22 06:15:00 | 0 | 1 | 0 | 0 | **1** | 0 | 0 | 3 | 18 | 1 | 0 | **22** | 0 | 0 | **97** |
| 2023-02-22 06:30:00 | 1 | 0 | 0 | 0 | **1** | 0 | 1 | 0 | 47 | 1 | 0 | **48** | 0 | 0 | **145** |
| 2023-02-22 06:45:00 | 0 | 0 | 1 | 0 | **1** | 0 | 0 | 0 | 40 | 1 | 0 | **41** | 0 | 0 | **123** |
| 2023-02-22 07:00:00 | 11 | 2 | 1 | 0 | **14** | 0 | 0 | 2 | 34 | 0 | 0 | **36** | 0 | 1 | **143** |
| 2023-02-22 07:15:00 | 1 | 2 | 2 | 0 | **5** | 0 | 0 | 1 | 63 | 0 | 0 | **64** | 0 | 0 | **172** |
| 2023-02-22 07:30:00 | 3 | 1 | 0 | 0 | **4** | 1 | 0 | 2 | 46 | 0 | 0 | **48** | 0 | 0 | **153** |
| 2023-02-22 07:45:00 | 4 | 3 | 4 | 0 | **11** | 0 | 0 | 2 | 72 | 3 | 0 | **77** | 0 | 0 | **196** |
| 2023-02-22 08:00:00 | 5 | 2 | 0 | 0 | **7** | 0 | 0 | 1 | 58 | 2 | 0 | **61** | 0 | 0 | **151** |
| 2023-02-22 08:15:00 | 3 | 1 | 2 | 0 | **6** | 0 | 0 | 2 | 48 | 4 | 0 | **54** | 0 | 0 | **141** |
| 2023-02-22 08:30:00 | 2 | 2 | 3 | 0 | **7** | 1 | 0 | 1 | 51 | 1 | 0 | **53** | 0 | 0 | **113** |
| 2023-02-22 08:45:00 | 5 | 4 | 4 | 0 | **13** | 1 | 0 | 4 | 38 | 2 | 0 | **44** | 0 | 0 | **157** |
| 2023-02-22 09:00:00 | 6 | 3 | 4 | 0 | **13** | 0 | 0 | 6 | 58 | 4 | 0 | **68** | 0 | 0 | **156** |
| 2023-02-22 09:15:00 | 8 | 1 | 0 | 0 | **9** | 1 | 3 | 3 | 58 | 0 | 0 | **61** | 0 | 0 | **163** |
| 2023-02-22 09:30:00 | 9 | 0 | 4 | 0 | **13** | 1 | 0 | 2 | 49 | 0 | 0 | **51** | 0 | 0 | **143** |
| 2023-02-22 09:45:00 | 11 | 1 | 1 | 0 | **13** | 0 | 0 | 5 | 57 | 0 | 0 | **62** | 0 | 1 | **181** |
| 2023-02-22 10:00:00 | 6 | 0 | 2 | 0 | **8** | 0 | 0 | 0 | 55 | 3 | 0 | **58** | 0 | 0 | **146** |
| 2023-02-22 10:15:00 | 7 | 2 | 3 | 0 | **12** | 1 | 0 | 2 | 39 | 1 | 0 | **42** | 0 | 0 | **128** |
| 2023-02-22 10:30:00 | 10 | 3 | 2 | 0 | **15** | 0 | 0 | 3 | 58 | 1 | 0 | **62** | 0 | 0 | **150** |
| 2023-02-22 10:45:00 | 4 | 2 | 0 | 0 | **6** | 0 | 0 | 2 | 47 | 2 | 0 | **51** | 1 | 0 | **145** |
| 2023-02-22 11:00:00 | 9 | 0 | 3 | 0 | **12** | 0 | 0 | 2 | 50 | 0 | 0 | **52** | 0 | 0 | **142** |
| 2023-02-22 11:15:00 | 3 | 2 | 5 | 0 | **10** | 1 | 0 | 7 | 64 | 2 | 0 | **73** | 0 | 0 | **169** |
| 2023-02-22 11:30:00 | 14 | 3 | 5 | 0 | **22** | 0 | 0 | 1 | 71 | 2 | 0 | **74** | 0 | 0 | **188** |
| 2023-02-22 11:45:00 | 14 | 1 | 5 | 0 | **20** | 0 | 0 | 3 | 58 | 2 | 0 | **63** | 0 | 0 | **177** |
| 2023-02-22 12:00:00 | 11 | 4 | 3 | 0 | **18** | 0 | 0 | 4 | 83 | 2 | 0 | **89** | 0 | 0 | **195** |
| 2023-02-22 12:15:00 | 6 | 4 | 3 | 0 | **13** | 0 | 0 | 3 | 61 | 0 | 0 | **64** | 0 | 0 | **175** |
| 2023-02-22 12:30:00 | 11 | 2 | 3 | 0 | **16** | 0 | 0 | 1 | 66 | 0 | 0 | **67** | 0 | 0 | **188** |
| 2023-02-22 12:45:00 | 11 | 3 | 4 | 0 | **18** | 0 | 0 | 3 | 52 | 1 | 0 | **56** | 0 | 0 | **177** |
| 2023-02-22 13:00:00 | 8 | 5 | 2 | 0 | **15** | 0 | 0 | 2 | 52 | 7 | 0 | **61** | 0 | 0 | **157** |
| 2023-02-22 13:15:00 | 9 | 4 | 3 | 0 | **16** | 0 | 0 | 1 | 64 | 2 | 0 | **67** | 0 | 0 | **155** |
| 2023-02-22 13:30:00 | 5 | 5 | 3 | 0 | **13** | 0 | 0 | 3 | 55 | 0 | 0 | **58** | 0 | 0 | **162** |
| 2023-02-22 13:45:00 | 10 | 0 | 1 | 0 | **11** | 0 | 0 | 3 | 43 | 6 | 0 | **52** | 0 | 0 | **140** |
| 2023-02-22 14:00:00 | 2 | 4 | 1 | 0 | **7** | 0 | 0 | 4 | 70 | 2 | 0 | **76** | 0 | 0 | **161** |
| 2023-02-22 14:15:00 | 4 | 3 | 2 | 0 | **9** | 0 | 0 | 3 | 73 | 3 | 0 | **79** | 1 | 0 | **169** |
| 2023-02-22 14:30:00 | 5 | 1 | 5 | 0 | **11** | 0 | 0 | 2 | 69 | 1 | 0 | **72** | 0 | 1 | **175** |
| 2023-02-22 14:45:00 | 7 | 2 | 4 | 0 | **13** | 0 | 0 | 3 | 56 | 2 | 0 | **61** | 0 | 0 | **152** |
| 2023-02-22 15:00:00 | 9 | 3 | 3 | 0 | **15** | 1 | 0 | 5 | 80 | 2 | 0 | **87** | 0 | 0 | **200** |
| 2023-02-22 15:15:00 | 11 | 10 | 1 | 0 | **22** | 0 | 0 | 1 | 103 | 1 | 0 | **105** | 0 | 0 | **221** |
| 2023-02-22 15:30:00 | 9 | 3 | 1 | 0 | **13** | 0 | 0 | 1 | 118 | 3 | 0 | **122** | 0 | 0 | **227** |
| 2023-02-22 15:45:00 | 10 | 7 | 3 | 0 | **20** | 1 | 0 | 4 | 90 | 2 | 0 | **96** | 0 | 0 | **217** |
| 2023-02-22 16:00:00 | 17 | 5 | 1 | 0 | **23** | 1 | 0 | 4 | 89 | 5 | 0 | **98** | 1 | 0 | **217** |
| 2023-02-22 16:15:00 | 6 | 1 | 2 | 0 | **9** | 0 | 0 | 0 | 98 | 4 | 0 | **102** | 0 | 0 | **204** |
| 2023-02-22 16:30:00 | 5 | 3 | 4 | 0 | **12** | 0 | 0 | 5 | 98 | 2 | 0 | **105** | 0 | 0 | **221** |
| 2023-02-22 16:45:00 | 10 | 3 | 2 | 0 | **15** | 1 | 0 | 4 | 92 | 8 | 0 | **104** | 0 | 0 | **228** |
| 2023-02-22 17:00:00 | 8 | 3 | 3 | 0 | **14** | 0 | 0 | 3 | 95 | 1 | 0 | **99** | 0 | 0 | **209** |
| 2023-02-22 17:15:00 | 9 | 1 | 4 | 0 | **14** | 0 | 0 | 2 | 116 | 6 | 0 | **124** | 0 | 0 | **252** |
| 2023-02-22 17:30:00 | 10 | 4 | 3 | 0 | **17** | 0 | 0 | 3 | 75 | 3 | 0 | **81** | 0 | 0 | **210** |
| 2023-02-22 17:45:00 | 8 | 3 | 3 | 0 | **14** | 0 | 0 | 1 | 89 | 6 | 0 | **96** | 0 | 0 | **195** |
| 2023-02-22 18:00:00 | 7 | 1 | 1 | 0 | **9** | 0 | 0 | 0 | 74 | 2 | 0 | **76** | 0 | 0 | **155** |
| 2023-02-22 18:15:00 | 4 | 0 | 4 | 0 | **8** | 0 | 0 | 1 | 52 | 4 | 0 | **57** | 0 | 0 | **157** |
| 2023-02-22 18:30:00 | 1 | 1 | 1 | 0 | **3** | 0 | 0 | 0 | 55 | 0 | 0 | **55** | 0 | 0 | **106** |
| 2023-02-22 18:45:00 | 6 | 1 | 3 | 0 | **10** | 0 | 0 | 1 | 39 | 3 | 0 | **43** | 0 | 0 | **111** |
| **Grand Total** | 356 | 122 | 125 | 0 | **603** | 11 | 4 | 123 | 3317 | 111 | 0 | **3551** | 3 | 3 | **8701** |
| **% Approach** | 59.0% | 20.2% | 20.7% | 0.0% | | | | 3.5% | 93.4% | 3.1% | 0.0% | | | | |
| **% Total** | 4.1% | 1.4% | 1.4% | 0.0% | **6.9%** | | | 1.4% | 38.1% | 1.3% | 0.0% | **40.8%** | | | |
| **Lights** | 352 | 115 | 121 | 0 | **588** | | | 119 | 3036 | 110 | 0 | **3265** | | | **8110** |
| **% Lights** | 98.9% | 94.3% | 96.8% | 0.0% | **97.5%** | | | 96.7% | 91.5% | 99.1% | 0.0% | **91.9%** | | | **93.2%** |
| **Articulated Trucks** | 1 | 5 | 0 | 0 | **6** | | | 0 | 210 | 0 | 0 | **210** | | | **438** |
| **% Articulated Trucks** | 0.3% | 4.1% | 0.0% | 0.0% | **1.0%** | | | 0.0% | 6.3% | 0.0% | 0.0% | **5.9%** | | | **5.0%** |
| **Buses and Single-Un** | 3 | 2 | 4 | 0 | **9** | | | 4 | 71 | 1 | 0 | **76** | | | **153** |
| **% Buses and Single-U** | 0.8% | 1.6% | 3.2% | 0.0% | **1.5%** | | | 3.3% | 2.1% | 0.9% | 0.0% | **2.1%** | | | **1.8%** |
| **Pedestrians** | | | | | | 11 | 4 | | | | | | 3 | 2 | |
| **% Pedestrians** | | | | | | 100.0% | 100.0% | | | | | | 100.0% | 66.7% | |
| **Bicycles on Crosswalk** | | | | | | 0 | 0 | | | | | | 0 | 1 | |
| **% Bicycles on Crosswalk** | | | | | | 0.0% | 0.0% | | | | | | 0.0% | 33.3% | |

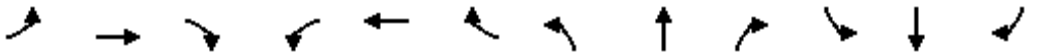
| | |
|---|---|
| Study Name | Main Street at Madison Street |
| Project | 2023.D056 Tipton, IN |
| Project Code | |
| Legs and Movements | All Processed Legs & Movements |
| Bin Size | 15 minutes |
| Time Zone | America/Indiana/Indianapolis |
| Start Time | 2023-02-22 06:00:00 |
| End Time | 2023-02-22 19:00:00 |
| Location | Main Street at Madison Street |
| Latitude and Longitude | 40.280944,-86.041166 |
| | |
| AM Peak | 7:15 AM - 8:15 AM (0.735) |
| Midday Peak | 11:15 AM - 12:15 PM (0.924) |
| PM Peak (Overall Peak Hour) | 5 PM - 6 PM (0.943) |

| Leg | | | | Main | | | | | | Madison | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Direction | | | | Southbound | | | | | | Westbound | | | | | |
| Start Time | Right | Thru | Left | U-Turn | **App Total** | Peds CW | Peds CCW | Right | Thru | Left | U-Turn | **App Total** | Peds CW | Peds CCW | |
| 2023-02-22 06:00:00 | 0 | 16 | 0 | 0 | **16** | 0 | 0 | 0 | 1 | 1 | 0 | **2** | 0 | 0 | |
| 2023-02-22 06:15:00 | 1 | 20 | 0 | 0 | **21** | 0 | 0 | 0 | 0 | 1 | 0 | **1** | 0 | 1 | |
| 2023-02-22 06:30:00 | 0 | 28 | 0 | 0 | **28** | 0 | 0 | 0 | 0 | 0 | 0 | **0** | 0 | 0 | |
| 2023-02-22 06:45:00 | 0 | 23 | 1 | 0 | **24** | 0 | 0 | 1 | 0 | 0 | 0 | **1** | 0 | 0 | |
| 2023-02-22 07:00:00 | 0 | 42 | 1 | 0 | **43** | 0 | 0 | 1 | 1 | 1 | 0 | **3** | 0 | 0 | |
| 2023-02-22 07:15:00 | 0 | 48 | 1 | 0 | **49** | 0 | 0 | 3 | 0 | 3 | 0 | **6** | 0 | 0 | |
| 2023-02-22 07:30:00 | 4 | 102 | 1 | 0 | **107** | 0 | 0 | 2 | 2 | 4 | 0 | **8** | 0 | 0 | |
| 2023-02-22 07:45:00 | 6 | 73 | 1 | 0 | **80** | 0 | 0 | 0 | 1 | 6 | 0 | **7** | 0 | 0 | |
| 2023-02-22 08:00:00 | 3 | 41 | 2 | 0 | **46** | 0 | 0 | 2 | 1 | 0 | 0 | **3** | 0 | 0 | |
| 2023-02-22 08:15:00 | 1 | 30 | 2 | 0 | **33** | 0 | 0 | 2 | 1 | 2 | 0 | **5** | 0 | 0 | |
| 2023-02-22 08:30:00 | 1 | 34 | 3 | 0 | **38** | 0 | 0 | 1 | 1 | 1 | 0 | **3** | 0 | 0 | |
| 2023-02-22 08:45:00 | 1 | 27 | 2 | 0 | **30** | 0 | 0 | 4 | 2 | 0 | 0 | **6** | 0 | 0 | |
| 2023-02-22 09:00:00 | 2 | 27 | 3 | 0 | **32** | 0 | 0 | 1 | 0 | 1 | 0 | **2** | 0 | 0 | |
| 2023-02-22 09:15:00 | 2 | 33 | 2 | 0 | **37** | 0 | 0 | 4 | 0 | 4 | 0 | **8** | 0 | 0 | |
| 2023-02-22 09:30:00 | 3 | 20 | 2 | 0 | **25** | 0 | 0 | 2 | 5 | 2 | 0 | **9** | 0 | 0 | |
| 2023-02-22 09:45:00 | 5 | 26 | 4 | 0 | **35** | 0 | 2 | 4 | 5 | 2 | 0 | **11** | 0 | 1 | |
| 2023-02-22 10:00:00 | 1 | 25 | 2 | 0 | **28** | 0 | 0 | 3 | 0 | 1 | 0 | **4** | 0 | 0 | |
| 2023-02-22 10:15:00 | 2 | 30 | 3 | 0 | **35** | 0 | 0 | 5 | 2 | 5 | 0 | **12** | 0 | 0 | |
| 2023-02-22 10:30:00 | 2 | 27 | 1 | 0 | **30** | 0 | 0 | 4 | 3 | 1 | 0 | **8** | 0 | 0 | |
| 2023-02-22 10:45:00 | 2 | 23 | 2 | 0 | **27** | 0 | 0 | 0 | 2 | 0 | 0 | **2** | 0 | 0 | |
| 2023-02-22 11:00:00 | 2 | 19 | 2 | 0 | **23** | 0 | 0 | 2 | 3 | 0 | 0 | **5** | 0 | 0 | |
| 2023-02-22 11:15:00 | 2 | 24 | 5 | 0 | **31** | 0 | 2 | 4 | 3 | 4 | 0 | **11** | 0 | 0 | |
| 2023-02-22 11:30:00 | 3 | 30 | 3 | 0 | **36** | 1 | 1 | 2 | 0 | 3 | 0 | **5** | 0 | 0 | |
| 2023-02-22 11:45:00 | 2 | 28 | 4 | 0 | **34** | 0 | 0 | 3 | 3 | 3 | 0 | **9** | 0 | 0 | |
| 2023-02-22 12:00:00 | 1 | 31 | 1 | 0 | **33** | 0 | 0 | 3 | 2 | 4 | 0 | **9** | 0 | 0 | |
| 2023-02-22 12:15:00 | 3 | 32 | 0 | 0 | **35** | 0 | 0 | 3 | 1 | 1 | 0 | **5** | 0 | 0 | |
| 2023-02-22 12:30:00 | 2 | 36 | 4 | 0 | **42** | 0 | 0 | 1 | 0 | 4 | 0 | **5** | 0 | 0 | |
| 2023-02-22 12:45:00 | 8 | 37 | 1 | 0 | **46** | 1 | 0 | 1 | 2 | 2 | 0 | **5** | 0 | 0 | |
| 2023-02-22 13:00:00 | 3 | 24 | 4 | 0 | **31** | 0 | 0 | 4 | 1 | 0 | 0 | **5** | 0 | 0 | |
| 2023-02-22 13:15:00 | 0 | 30 | 2 | 0 | **32** | 0 | 0 | 2 | 1 | 1 | 0 | **4** | 0 | 0 | |
| 2023-02-22 13:30:00 | 1 | 32 | 2 | 0 | **35** | 0 | 0 | 2 | 2 | 1 | 0 | **5** | 0 | 0 | |
| 2023-02-22 13:45:00 | 2 | 34 | 2 | 0 | **38** | 0 | 0 | 2 | 1 | 0 | 0 | **3** | 0 | 0 | |
| 2023-02-22 14:00:00 | 2 | 21 | 1 | 0 | **24** | 0 | 0 | 0 | 1 | 3 | 0 | **4** | 0 | 0 | |
| 2023-02-22 14:15:00 | 2 | 33 | 1 | 0 | **36** | 1 | 0 | 1 | 0 | 3 | 0 | **4** | 0 | 0 | |
| 2023-02-22 14:30:00 | 7 | 37 | 1 | 0 | **45** | 0 | 0 | 3 | 3 | 2 | 0 | **8** | 0 | 1 | |
| 2023-02-22 14:45:00 | 0 | 46 | 2 | 0 | **48** | 0 | 0 | 3 | 2 | 1 | 0 | **6** | 0 | 0 | |
| 2023-02-22 15:00:00 | 1 | 23 | 0 | 0 | **24** | 0 | 1 | 2 | 2 | 1 | 0 | **5** | 0 | 0 | |
| 2023-02-22 15:15:00 | 6 | 42 | 0 | 0 | **48** | 0 | 0 | 7 | 5 | 2 | 0 | **14** | 0 | 3 | |
| 2023-02-22 15:30:00 | 3 | 33 | 4 | 0 | **40** | 0 | 0 | 4 | 2 | 3 | 0 | **9** | 0 | 0 | |
| 2023-02-22 15:45:00 | 0 | 29 | 3 | 0 | **32** | 0 | 0 | 4 | 2 | 2 | 0 | **8** | 1 | 0 | |
| 2023-02-22 16:00:00 | 5 | 34 | 1 | 0 | **40** | 0 | 0 | 8 | 3 | 4 | 0 | **15** | 0 | 0 | |
| 2023-02-22 16:15:00 | 4 | 28 | 3 | 1 | **36** | 0 | 0 | 1 | 2 | 1 | 0 | **4** | 0 | 0 | |
| 2023-02-22 16:30:00 | 9 | 34 | 3 | 0 | **46** | 0 | 0 | 5 | 1 | 4 | 0 | **10** | 0 | 0 | |
| 2023-02-22 16:45:00 | 2 | 34 | 3 | 0 | **39** | 0 | 0 | 0 | 1 | 3 | 0 | **4** | 0 | 0 | |
| 2023-02-22 17:00:00 | 2 | 35 | 5 | 0 | **42** | 0 | 0 | 3 | 1 | 2 | 0 | **6** | 0 | 0 | |
| 2023-02-22 17:15:00 | 6 | 34 | 3 | 0 | **43** | 0 | 0 | 1 | 1 | 3 | 0 | **5** | 0 | 0 | |
| 2023-02-22 17:30:00 | 4 | 41 | 4 | 0 | **49** | 0 | 0 | 2 | 0 | 4 | 0 | **6** | 1 | 1 | |
| 2023-02-22 17:45:00 | 2 | 53 | 6 | 0 | **61** | 0 | 0 | 1 | 1 | 2 | 0 | **4** | 0 | 0 | |
| 2023-02-22 18:00:00 | 2 | 23 | 3 | 0 | **28** | 1 | 0 | 1 | 3 | 5 | 0 | **9** | 0 | 0 | |
| 2023-02-22 18:15:00 | 3 | 16 | 5 | 0 | **24** | 0 | 0 | 0 | 0 | 1 | 0 | **1** | 0 | 0 | |
| 2023-02-22 18:30:00 | 1 | 15 | 0 | 0 | **16** | 0 | 0 | 2 | 2 | 1 | 0 | **5** | 0 | 0 | |
| 2023-02-22 18:45:00 | 1 | 21 | 2 | 0 | **24** | 0 | 0 | 2 | 0 | 3 | 0 | **5** | 0 | 0 | |
| **Grand Total** | 127 | 1684 | 113 | 1 | **1925** | 4 | 6 | 118 | 78 | 108 | 0 | **304** | 2 | 7 | |
| **% Approach** | 6.6% | 87.5% | 5.9% | 0.1% | | | | 38.8% | 25.7% | 35.5% | 0.0% | | | | |
| **% Total** | 2.7% | 35.2% | 2.4% | 0.0% | **40.3%** | | | 2.5% | 1.6% | 2.3% | 0.0% | **6.4%** | | | |
| **Lights** | 123 | 1626 | 112 | 1 | **1862** | | | 113 | 77 | 104 | 0 | **294** | | | |
| **% Lights** | 96.9% | 96.6% | 99.1% | 100.0% | **96.7%** | | | 95.8% | 98.7% | 96.3% | 0.0% | **96.7%** | | | |
| **Articulated Trucks** | 1 | 19 | 1 | 0 | **21** | | | 0 | 0 | 0 | 0 | **0** | | | |
| **% Articulated Trucks** | 0.8% | 1.1% | 0.9% | 0.0% | **1.1%** | | | 0.0% | 0.0% | 0.0% | 0.0% | **0.0%** | | | |
| **Buses and Single-Uni** | 3 | 39 | 0 | 0 | **42** | | | 5 | 1 | 4 | 0 | **10** | | | |
| **% Buses and Single-U** | 2.4% | 2.3% | 0.0% | 0.0% | **2.2%** | | | 4.2% | 1.3% | 3.7% | 0.0% | **3.3%** | | | |
| **Pedestrians** | | | | | | 4 | 3 | | | | | | 2 | 6 | |
| **% Pedestrians** | | | | | | 100.0% | 50.0% | | | | | | 100.0% | 85.7% | |
| **Bicycles on Crosswalk** | | | | | | 0 | 3 | | | | | | 0 | 1 | |
| **% Bicycles on Crosswalk** | | | | | | 0.0% | 50.0% | | | | | | 0.0% | 14.3% | |

| | Main Northbound | | | | | | | Madison Eastbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | U-Turn | App Total | Peds CW | Peds CCW | Right | Thru | Left | U-Turn | App Total | Peds CW | Peds CCW | Int Total |
| 2023-02-22 06:00:00 | 1 | 7 | 1 | 0 | **9** | 0 | 0 | 2 | 0 | 0 | 0 | **2** | 0 | 0 | **29** |
| 2023-02-22 06:15:00 | 1 | 9 | 2 | 0 | **12** | 0 | 0 | 3 | 0 | 0 | 0 | **3** | 0 | 0 | **37** |
| 2023-02-22 06:30:00 | 0 | 12 | 4 | 0 | **16** | 0 | 0 | 2 | 1 | 0 | 0 | **3** | 0 | 0 | **47** |
| 2023-02-22 06:45:00 | 0 | 26 | 1 | 0 | **27** | 0 | 0 | 1 | 0 | 1 | 0 | **2** | 0 | 0 | **54** |
| 2023-02-22 07:00:00 | 2 | 14 | 0 | 0 | **16** | 0 | 0 | 1 | 0 | 1 | 0 | **2** | 0 | 0 | **64** |
| 2023-02-22 07:15:00 | 2 | 21 | 0 | 0 | **23** | 0 | 0 | 4 | 1 | 0 | 0 | **5** | 0 | 0 | **83** |
| 2023-02-22 07:30:00 | 2 | 27 | 6 | 0 | **35** | 0 | 0 | 15 | 2 | 1 | 0 | **18** | 0 | 1 | **168** |
| 2023-02-22 07:45:00 | 7 | 70 | 7 | 0 | **84** | 0 | 0 | 11 | 2 | 0 | 0 | **13** | 0 | 0 | **184** |
| 2023-02-22 08:00:00 | 3 | 41 | 7 | 0 | **51** | 0 | 0 | 3 | 2 | 1 | 0 | **6** | 0 | 0 | **106** |
| 2023-02-22 08:15:00 | 1 | 28 | 3 | 0 | **32** | 0 | 0 | 1 | 2 | 0 | 0 | **3** | 0 | 0 | **73** |
| 2023-02-22 08:30:00 | 2 | 28 | 4 | 0 | **34** | 0 | 0 | 0 | 2 | 0 | 0 | **2** | 0 | 0 | **77** |
| 2023-02-22 08:45:00 | 1 | 27 | 2 | 0 | **30** | 0 | 0 | 4 | 4 | 1 | 0 | **9** | 0 | 0 | **75** |
| 2023-02-22 09:00:00 | 3 | 20 | 0 | 0 | **23** | 0 | 0 | 2 | 1 | 4 | 0 | **7** | 0 | 0 | **64** |
| 2023-02-22 09:15:00 | 4 | 30 | 3 | 0 | **37** | 0 | 0 | 4 | 3 | 5 | 0 | **12** | 0 | 0 | **94** |
| 2023-02-22 09:30:00 | 1 | 22 | 0 | 0 | **23** | 0 | 0 | 1 | 4 | 2 | 0 | **7** | 0 | 0 | **64** |
| 2023-02-22 09:45:00 | 3 | 37 | 2 | 0 | **42** | 0 | 1 | 2 | 7 | 2 | 0 | **11** | 0 | 0 | **99** |
| 2023-02-22 10:00:00 | 5 | 28 | 3 | 0 | **36** | 0 | 0 | 1 | 2 | 1 | 0 | **4** | 0 | 0 | **72** |
| 2023-02-22 10:15:00 | 4 | 16 | 2 | 0 | **22** | 0 | 0 | 3 | 5 | 2 | 0 | **10** | 0 | 0 | **79** |
| 2023-02-22 10:30:00 | 5 | 24 | 1 | 0 | **30** | 0 | 0 | 6 | 2 | 4 | 0 | **12** | 0 | 0 | **80** |
| 2023-02-22 10:45:00 | 5 | 28 | 5 | 0 | **38** | 0 | 0 | 0 | 4 | 0 | 0 | **4** | 0 | 0 | **71** |
| 2023-02-22 11:00:00 | 3 | 39 | 2 | 0 | **44** | 0 | 0 | 6 | 2 | 2 | 0 | **10** | 0 | 0 | **82** |
| 2023-02-22 11:15:00 | 4 | 27 | 4 | 0 | **35** | 0 | 0 | 5 | 5 | 3 | 0 | **13** | 0 | 0 | **90** |
| 2023-02-22 11:30:00 | 5 | 40 | 2 | 0 | **47** | 0 | 1 | 6 | 9 | 2 | 0 | **17** | 0 | 0 | **105** |
| 2023-02-22 11:45:00 | 6 | 35 | 5 | 0 | **46** | 0 | 0 | 4 | 3 | 1 | 0 | **8** | 0 | 0 | **97** |
| 2023-02-22 12:00:00 | 3 | 34 | 4 | 0 | **41** | 0 | 0 | 7 | 4 | 2 | 0 | **13** | 0 | 0 | **96** |
| 2023-02-22 12:15:00 | 3 | 31 | 2 | 0 | **36** | 0 | 0 | 2 | 2 | 2 | 0 | **6** | 0 | 0 | **82** |
| 2023-02-22 12:30:00 | 2 | 27 | 5 | 0 | **34** | 1 | 1 | 6 | 3 | 6 | 0 | **15** | 1 | 1 | **96** |
| 2023-02-22 12:45:00 | 3 | 26 | 3 | 0 | **32** | 0 | 0 | 2 | 3 | 0 | 0 | **5** | 0 | 0 | **88** |
| 2023-02-22 13:00:00 | 2 | 32 | 6 | 0 | **40** | 0 | 0 | 5 | 7 | 4 | 0 | **16** | 0 | 0 | **92** |
| 2023-02-22 13:15:00 | 4 | 25 | 5 | 0 | **34** | 0 | 0 | 2 | 8 | 2 | 0 | **12** | 0 | 0 | **82** |
| 2023-02-22 13:30:00 | 6 | 18 | 2 | 0 | **26** | 0 | 0 | 9 | 4 | 1 | 0 | **14** | 0 | 0 | **80** |
| 2023-02-22 13:45:00 | 1 | 19 | 3 | 0 | **23** | 0 | 0 | 3 | 2 | 2 | 0 | **7** | 0 | 0 | **71** |
| 2023-02-22 14:00:00 | 0 | 39 | 5 | 0 | **44** | 0 | 0 | 6 | 1 | 1 | 0 | **8** | 0 | 0 | **80** |
| 2023-02-22 14:15:00 | 4 | 26 | 1 | 0 | **31** | 0 | 0 | 3 | 2 | 1 | 0 | **6** | 0 | 0 | **77** |
| 2023-02-22 14:30:00 | 2 | 16 | 2 | 0 | **20** | 0 | 0 | 2 | 3 | 3 | 0 | **8** | 0 | 0 | **81** |
| 2023-02-22 14:45:00 | 1 | 23 | 2 | 0 | **26** | 0 | 0 | 3 | 3 | 5 | 0 | **11** | 0 | 0 | **91** |
| 2023-02-22 15:00:00 | 3 | 82 | 17 | 0 | **102** | 0 | 0 | 6 | 4 | 4 | 0 | **14** | 0 | 0 | **145** |
| 2023-02-22 15:15:00 | 5 | 43 | 6 | 0 | **54** | 1 | 0 | 5 | 6 | 7 | 0 | **18** | 0 | 0 | **134** |
| 2023-02-22 15:30:00 | 2 | 49 | 1 | 0 | **52** | 0 | 0 | 5 | 0 | 4 | 0 | **9** | 0 | 0 | **110** |
| 2023-02-22 15:45:00 | 5 | 48 | 5 | 0 | **58** | 0 | 0 | 8 | 2 | 1 | 0 | **11** | 0 | 0 | **109** |
| 2023-02-22 16:00:00 | 1 | 40 | 11 | 0 | **52** | 0 | 0 | 6 | 6 | 2 | 0 | **14** | 0 | 0 | **121** |
| 2023-02-22 16:15:00 | 3 | 48 | 10 | 0 | **61** | 0 | 0 | 6 | 5 | 2 | 0 | **13** | 1 | 0 | **114** |
| 2023-02-22 16:30:00 | 5 | 43 | 4 | 0 | **52** | 0 | 0 | 11 | 4 | 3 | 0 | **18** | 0 | 0 | **126** |
| 2023-02-22 16:45:00 | 4 | 37 | 2 | 0 | **43** | 0 | 1 | 5 | 1 | 3 | 0 | **9** | 0 | 0 | **95** |
| 2023-02-22 17:00:00 | 4 | 62 | 7 | 0 | **73** | 0 | 0 | 3 | 5 | 5 | 0 | **13** | 0 | 0 | **134** |
| 2023-02-22 17:15:00 | 4 | 60 | 7 | 0 | **71** | 0 | 2 | 7 | 7 | 7 | 0 | **21** | 0 | 0 | **140** |
| 2023-02-22 17:30:00 | 4 | 44 | 5 | 0 | **53** | 1 | 0 | 8 | 8 | 4 | 0 | **20** | 2 | 0 | **128** |
| 2023-02-22 17:45:00 | 4 | 47 | 6 | 0 | **57** | 0 | 0 | 8 | 10 | 5 | 0 | **23** | 0 | 0 | **145** |
| 2023-02-22 18:00:00 | 3 | 36 | 4 | 0 | **43** | 0 | 0 | 3 | 3 | 1 | 0 | **7** | 0 | 0 | **87** |
| 2023-02-22 18:15:00 | 2 | 23 | 4 | 0 | **29** | 0 | 0 | 7 | 1 | 1 | 0 | **9** | 0 | 0 | **63** |
| 2023-02-22 18:30:00 | 0 | 19 | 1 | 0 | **20** | 0 | 0 | 2 | 1 | 4 | 0 | **7** | 0 | 0 | **48** |
| 2023-02-22 18:45:00 | 1 | 32 | 6 | 0 | **39** | 0 | 0 | 1 | 2 | 0 | 0 | **3** | 0 | 0 | **71** |
| **Grand Total** | 151 | 1685 | 202 | 0 | **2038** | 3 | 6 | 228 | 170 | 115 | 0 | **513** | 4 | 2 | **4780** |
| **% Approach** | 7.4% | 82.7% | 9.9% | 0.0% | | | | 44.4% | 33.1% | 22.4% | 0.0% | | | | |
| **% Total** | 3.2% | 35.3% | 4.2% | 0.0% | **42.6%** | | | 4.8% | 3.6% | 2.4% | 0.0% | **10.7%** | | | |
| **Lights** | 147 | 1626 | 195 | 0 | **1968** | | | 222 | 169 | 109 | 0 | **500** | | | **4624** |
| **% Lights** | 97.4% | 96.5% | 96.5% | 0.0% | **96.6%** | | | 97.4% | 99.4% | 94.8% | 0.0% | **97.5%** | | | **96.7%** |
| **Articulated Trucks** | 0 | 19 | 0 | 0 | **19** | | | 1 | 0 | 1 | 0 | **2** | | | **42** |
| **% Articulated Trucks** | 0.0% | 1.1% | 0.0% | 0.0% | **0.9%** | | | 0.4% | 0.0% | 0.9% | 0.0% | **0.4%** | | | **0.9%** |
| **Buses and Single-Un** | 4 | 40 | 7 | 0 | **51** | | | 5 | 1 | 5 | 0 | **11** | | | **114** |
| **% Buses and Single-** | 2.6% | 2.4% | 3.5% | 0.0% | **2.5%** | | | 2.2% | 0.6% | 4.3% | 0.0% | **2.1%** | | | **2.4%** |
| **Pedestrians** | | | | | | 3 | 6 | | | | | | 4 | 2 | |
| **% Pedestrians** | | | | | | ##### | ##### | | | | | | ##### | ##### | |
| **Bicycles on Crosswalk** | | | | | | 0 | 0 | | | | | | 0 | 0 | |
| **% Bicycles on Crosswalk** | | | | | | 0.0% | 0.0% | | | | | | 0.0% | 0.0% | |

# APPENDIX B

SYNCHRO RESULTS SIGNALIZED



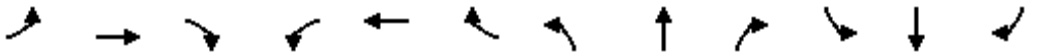
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 3 | 244 | 25 | 11 | 244 | 8 | 23 | 7 | 16 | 5 | 16 | 3 |
| Future Volume (vph) | 3 | 244 | 25 | 11 | 244 | 8 | 23 | 7 | 16 | 5 | 16 | 3 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 16 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Storage Length (ft) | 50 | | 0 | 150 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Satd. Flow (prot) | 1770 | 1837 | 0 | 1770 | 1853 | 0 | 0 | 1962 | 0 | 0 | 1813 | 0 |
| Flt Permitted | 0.577 | | | 0.547 | | | | 0.817 | | | 0.909 | |
| Satd. Flow (perm) | 1075 | 1837 | 0 | 1019 | 1853 | 0 | 0 | 1642 | 0 | 0 | 1664 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 14 | | | 5 | | | 24 | | | 6 | |
| Link Speed (mph) | | 30 | | | 25 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1020 | | | 478 | | | 486 | | | 753 | |
| Travel Time (s) | | 23.2 | | | 13.0 | | | 11.0 | | | 17.1 | |
| Lane Group Flow (vph) | 4 | 358 | 0 | 13 | 300 | 0 | 0 | 68 | 0 | 0 | 48 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Total Split (s) | 40.0 | 40.0 | | 40.0 | 40.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Total Lost Time (s) | 5.5 | 5.5 | | 5.5 | 5.5 | | | 5.8 | | | 5.8 | |
| Act Effct Green (s) | 48.2 | 48.2 | | 48.2 | 48.2 | | | 7.2 | | | 7.3 | |
| Actuated g/C Ratio | 0.80 | 0.80 | | 0.80 | 0.80 | | | 0.12 | | | 0.12 | |
| v/c Ratio | 0.00 | 0.24 | | 0.02 | 0.20 | | | 0.31 | | | 0.23 | |
| Control Delay | 3.7 | 3.6 | | 2.5 | 2.3 | | | 20.6 | | | 23.7 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | 3.7 | 3.6 | | 2.5 | 2.3 | | | 20.6 | | | 23.7 | |
| LOS | A | A | | A | A | | | C | | | C | |
| Approach Delay | | 3.6 | | | 2.3 | | | 20.6 | | | 23.7 | |
| Approach LOS | | A | | | A | | | C | | | C | |
| Stops (vph) | 2 | 73 | | 3 | 41 | | | 30 | | | 20 | |
| Fuel Used(gal) | 0 | 3 | | 0 | 1 | | | 1 | | | 0 | |
| CO Emissions (g/hr) | 3 | 191 | | 4 | 91 | | | 37 | | | 26 | |
| NOx Emissions (g/hr) | 1 | 37 | | 1 | 18 | | | 7 | | | 5 | |
| VOC Emissions (g/hr) | 1 | 44 | | 1 | 21 | | | 9 | | | 6 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Queue Length 50th (ft) | 1 | 36 | | 1 | 21 | | | 15 | | | 14 | |
| Queue Length 95th (ft) | 2 | 60 | | m4 | 38 | | | 31 | | | 20 | |
| Internal Link Dist (ft) | | 940 | | | 398 | | | 406 | | | 673 | |
| Turn Bay Length (ft) | 50 | | | 150 | | | | | | | | |
| Base Capacity (vph) | 864 | 1479 | | 819 | 1491 | | | 406 | | | 398 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | 0.00 | 0.24 | | 0.02 | 0.20 | | | 0.17 | | | 0.12 | |

Intersection Summary

| | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 60 | | | |
| Actuated Cycle Length: 60 | | | |
| Offset: 47 (78%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.31 | | | |
| Intersection Signal Delay: 5.7 | | Intersection LOS: A | |
| Intersection Capacity Utilization 29.3% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: West St & Jefferson St (Old 28)

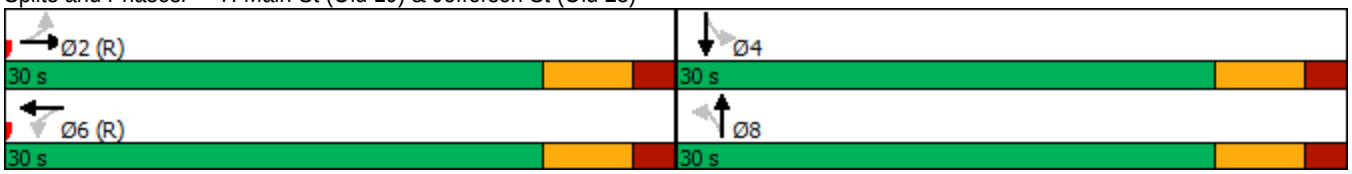


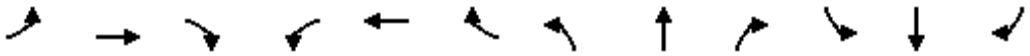
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 14 | 185 | 66 | 97 | 214 | 18 | 32 | 58 | 66 | 16 | 117 | 21 |
| Future Volume (vph) | 14 | 185 | 66 | 97 | 214 | 18 | 32 | 58 | 66 | 16 | 117 | 21 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Storage Length (ft) | 150 | | 0 | 190 | | 0 | 30 | | 0 | 50 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 50 | | | 100 | | |
| Satd. Flow (prot) | 1770 | 1788 | 0 | 1770 | 1840 | 0 | 1770 | 1714 | 0 | 1770 | 1820 | 0 |
| Flt Permitted | 0.593 | | | 0.563 | | | 0.634 | | | 0.610 | | |
| Satd. Flow (perm) | 1105 | 1788 | 0 | 1049 | 1840 | 0 | 1181 | 1714 | 0 | 1136 | 1820 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 36 | | | 8 | | | 112 | | | 18 | |
| Link Speed (mph) | | 25 | | | 25 | | | 30 | | | 30 | |
| Link Distance (ft) | | 478 | | | 471 | | | 476 | | | 769 | |
| Travel Time (s) | | 13.0 | | | 12.8 | | | 10.8 | | | 17.5 | |
| Lane Group Flow (vph) | 18 | 326 | 0 | 113 | 270 | 0 | 54 | 210 | 0 | 23 | 197 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Total Split (s) | 30.0 | 30.0 | | 30.0 | 30.0 | | 30.0 | 30.0 | | 30.0 | 30.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Act Effct Green (s) | 35.9 | 35.9 | | 35.9 | 35.9 | | 12.1 | 12.1 | | 12.1 | 12.1 | |
| Actuated g/C Ratio | 0.60 | 0.60 | | 0.60 | 0.60 | | 0.20 | 0.20 | | 0.20 | 0.20 | |
| v/c Ratio | 0.03 | 0.30 | | 0.18 | 0.24 | | 0.23 | 0.48 | | 0.10 | 0.52 | |
| Control Delay | 3.6 | 4.4 | | 4.2 | 4.2 | | 17.8 | 10.8 | | 19.2 | 24.0 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 3.6 | 4.4 | | 4.2 | 4.2 | | 17.8 | 10.8 | | 19.2 | 24.0 | |
| LOS | A | A | | A | A | | B | B | | B | C | |
| Approach Delay | | 4.3 | | | 4.2 | | | 12.2 | | | 23.5 | |
| Approach LOS | | A | | | A | | | B | | | C | |
| Stops (vph) | 3 | 82 | | 24 | 64 | | 25 | 71 | | 15 | 106 | |
| Fuel Used(gal) | 0 | 2 | | 1 | 1 | | 0 | 1 | | 0 | 2 | |
| CO Emissions (g/hr) | 6 | 109 | | 39 | 96 | | 26 | 79 | | 17 | 146 | |
| NOx Emissions (g/hr) | 1 | 21 | | 8 | 19 | | 5 | 15 | | 3 | 28 | |
| VOC Emissions (g/hr) | 1 | 25 | | 9 | 22 | | 6 | 18 | | 4 | 34 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Queue Length 50th (ft) | 1 | 20 | | 7 | 16 | | 17 | 32 | | 7 | 59 | |
| Queue Length 95th (ft) | 4 | 28 | | 15 | 28 | | 14 | 10 | | 17 | 75 | |
| Internal Link Dist (ft) | | 398 | | | 391 | | | 396 | | | 689 | |
| Turn Bay Length (ft) | 150 | | | 190 | | | 30 | | | 50 | | |
| Base Capacity (vph) | 661 | 1085 | | 628 | 1105 | | 472 | 752 | | 454 | 738 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.03 | 0.30 | | 0.18 | 0.24 | | 0.11 | 0.28 | | 0.05 | 0.27 | |

Intersection Summary

| | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 60 | | | |
| Actuated Cycle Length: 60 | | | |
| Offset: 4 (7%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.52 | | | |
| Intersection Signal Delay: 9.5 | | Intersection LOS: A | |
| Intersection Capacity Utilization 58.8% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 7: Main St (Old 19) & Jefferson St (Old 28)





| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 2 | 7 | 33 | 13 | 4 | 7 | 20 | 159 | 14 | 5 | 264 | 13 |
| Future Volume (vph) | 2 | 7 | 33 | 13 | 4 | 7 | 20 | 159 | 14 | 5 | 264 | 13 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Satd. Flow (prot) | 0 | 1660 | 0 | 0 | 1742 | 0 | 0 | 1835 | 0 | 0 | 1850 | 0 |
| Flt Permitted | | 0.983 | | | 0.790 | | | 0.937 | | | 0.994 | |
| Satd. Flow (perm) | 0 | 1635 | 0 | 0 | 1414 | 0 | 0 | 1728 | 0 | 0 | 1840 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 57 | | | 9 | | | 11 | | | 7 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 483 | | | 731 | | | 727 | | | 476 | |
| Travel Time (s) | | 11.0 | | | 16.6 | | | 16.5 | | | 10.8 | |
| Lane Group Flow (vph) | 0 | 72 | 0 | 0 | 31 | 0 | 0 | 339 | 0 | 0 | 428 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Total Split (s) | 20.0 | 20.0 | | 20.0 | 20.0 | | 40.0 | 40.0 | | 40.0 | 40.0 | |
| Total Lost Time (s) | | 6.0 | | | 6.0 | | | 6.0 | | | 6.0 | |
| Act Effct Green (s) | | 6.7 | | | 6.7 | | | 48.3 | | | 48.3 | |
| Actuated g/C Ratio | | 0.11 | | | 0.11 | | | 0.80 | | | 0.80 | |
| v/c Ratio | | 0.31 | | | 0.19 | | | 0.24 | | | 0.29 | |
| Control Delay | | 13.8 | | | 21.3 | | | 3.6 | | | 3.8 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 13.8 | | | 21.3 | | | 3.6 | | | 3.8 | |
| LOS | | B | | | C | | | A | | | A | |
| Approach Delay | | 13.8 | | | 21.3 | | | 3.6 | | | 3.8 | |
| Approach LOS | | B | | | C | | | A | | | A | |
| Stops (vph) | | 17 | | | 19 | | | 54 | | | 85 | |
| Fuel Used(gal) | | 0 | | | 0 | | | 2 | | | 2 | |
| CO Emissions (g/hr) | | 26 | | | 23 | | | 107 | | | 121 | |
| NOx Emissions (g/hr) | | 5 | | | 5 | | | 21 | | | 24 | |
| VOC Emissions (g/hr) | | 6 | | | 5 | | | 25 | | | 28 | |
| Dilemma Vehicles (#) | | 0 | | | 0 | | | 0 | | | 0 | |
| Queue Length 50th (ft) | | 5 | | | 7 | | | 35 | | | 57 | |
| Queue Length 95th (ft) | | 15 | | | 22 | | | 40 | | | 73 | |
| Internal Link Dist (ft) | | 403 | | | 651 | | | 647 | | | 396 | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | | 425 | | | 336 | | | 1392 | | | 1482 | |
| Starvation Cap Reductn | | 0 | | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.17 | | | 0.09 | | | 0.24 | | | 0.29 | |

Intersection Summary

| | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 60 | | | |
| Actuated Cycle Length: 60 | | | |
| Offset: 23 (38%), Referenced to phase 2:NBTL and 6:SBTL, Start of 1st Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.31 | | | |
| Intersection Signal Delay: 5.2 | | Intersection LOS: A | |
| Intersection Capacity Utilization 37.5% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 10: Main St (Old 19) & Madison St

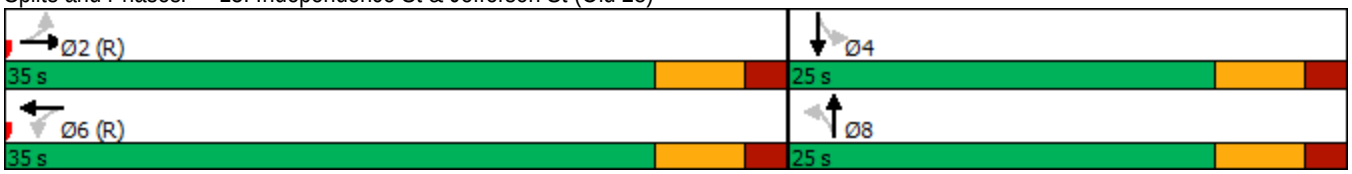
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 5 | 239 | 6 | 17 | 325 | 14 | 6 | 8 | 13 | 9 | 14 | 16 |
| Future Volume (vph) | 5 | 239 | 6 | 17 | 325 | 14 | 6 | 8 | 13 | 9 | 14 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Storage Length (ft) | 100 | | 0 | 75 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Satd. Flow (prot) | 1770 | 1857 | 0 | 1770 | 1852 | 0 | 0 | 1724 | 0 | 0 | 1741 | 0 |
| Flt Permitted | 0.546 | | | 0.576 | | | | 0.906 | | | 0.908 | |
| Satd. Flow (perm) | 1017 | 1857 | 0 | 1073 | 1852 | 0 | 0 | 1580 | 0 | 0 | 1598 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 3 | | | 5 | | | 21 | | | 21 | |
| Link Speed (mph) | | 25 | | | 25 | | | 30 | | | 30 | |
| Link Distance (ft) | | 471 | | | 605 | | | 1019 | | | 765 | |
| Travel Time (s) | | 12.8 | | | 16.5 | | | 23.2 | | | 17.4 | |
| Lane Group Flow (vph) | 6 | 302 | 0 | 18 | 361 | 0 | 0 | 44 | 0 | 0 | 52 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Total Split (s) | 35.0 | 35.0 | | 35.0 | 35.0 | | 25.0 | 25.0 | | 25.0 | 25.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | | 6.0 | | | 6.0 | |
| Act Effct Green (s) | 48.2 | 48.2 | | 48.2 | 48.2 | | | 6.8 | | | 6.8 | |
| Actuated g/C Ratio | 0.80 | 0.80 | | 0.80 | 0.80 | | | 0.11 | | | 0.11 | |
| v/c Ratio | 0.01 | 0.20 | | 0.02 | 0.24 | | | 0.22 | | | 0.26 | |
| Control Delay | 2.6 | 2.3 | | 3.6 | 3.7 | | | 18.2 | | | 19.6 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | 2.6 | 2.3 | | 3.6 | 3.7 | | | 18.2 | | | 19.6 | |
| LOS | A | A | | A | A | | | B | | | B | |
| Approach Delay | | 2.3 | | | 3.7 | | | 18.2 | | | 19.6 | |
| Approach LOS | | A | | | A | | | B | | | B | |
| Stops (vph) | 2 | 41 | | 7 | 95 | | | 17 | | | 25 | |
| Fuel Used(gal) | 0 | 1 | | 0 | 2 | | | 0 | | | 1 | |
| CO Emissions (g/hr) | 2 | 88 | | 9 | 165 | | | 29 | | | 37 | |
| NOx Emissions (g/hr) | 0 | 17 | | 2 | 32 | | | 6 | | | 7 | |
| VOC Emissions (g/hr) | 0 | 20 | | 2 | 38 | | | 7 | | | 9 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Queue Length 50th (ft) | 1 | 22 | | 2 | 38 | | | 8 | | | 10 | |
| Queue Length 95th (ft) | m2 | 36 | | 7 | 80 | | | 19 | | | 29 | |
| Internal Link Dist (ft) | | 391 | | | 525 | | | 939 | | | 685 | |
| Turn Bay Length (ft) | 100 | | | 75 | | | | | | | | |
| Base Capacity (vph) | 816 | 1492 | | 861 | 1488 | | | 514 | | | 520 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | 0.01 | 0.20 | | 0.02 | 0.24 | | | 0.09 | | | 0.10 | |

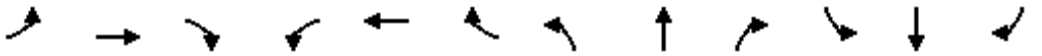
Intersection Summary

| | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 60 | | | |
| Actuated Cycle Length: 60 | | | |
| Offset: 52 (87%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.26 | | | |
| Intersection Signal Delay: 5.0 | | Intersection LOS: A | |
| Intersection Capacity Utilization 32.1% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Independence St & Jefferson St (Old 28)



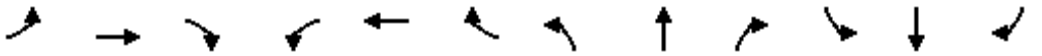


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 7 | 324 | 17 | 38 | 277 | 20 | 29 | 9 | 33 | 8 | 14 | 3 |
| Future Volume (vph) | 7 | 324 | 17 | 38 | 277 | 20 | 29 | 9 | 33 | 8 | 14 | 3 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 16 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Storage Length (ft) | 50 | | 0 | 150 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Satd. Flow (prot) | 1770 | 1848 | 0 | 1770 | 1844 | 0 | 0 | 1939 | 0 | 0 | 1805 | 0 |
| Flt Permitted | 0.560 | | | 0.548 | | | | 0.851 | | | 0.863 | |
| Satd. Flow (perm) | 1043 | 1848 | 0 | 1021 | 1844 | 0 | 0 | 1683 | 0 | 0 | 1583 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 8 | | | 10 | | | 41 | | | 4 | |
| Link Speed (mph) | | 30 | | | 25 | | | 30 | | | 30 | |
| Link Distance (ft) | | 1020 | | | 478 | | | 486 | | | 753 | |
| Travel Time (s) | | 23.2 | | | 13.0 | | | 11.0 | | | 17.1 | |
| Lane Group Flow (vph) | 7 | 356 | 0 | 43 | 333 | 0 | 0 | 88 | 0 | 0 | 36 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Total Split (s) | 40.0 | 40.0 | | 40.0 | 40.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Total Lost Time (s) | 5.5 | 5.5 | | 5.5 | 5.5 | | | 5.8 | | | 5.8 | |
| Act Effct Green (s) | 44.7 | 44.7 | | 44.7 | 44.7 | | | 7.4 | | | 7.4 | |
| Actuated g/C Ratio | 0.74 | 0.74 | | 0.74 | 0.74 | | | 0.12 | | | 0.12 | |
| v/c Ratio | 0.01 | 0.26 | | 0.06 | 0.24 | | | 0.36 | | | 0.18 | |
| Control Delay | 3.6 | 4.2 | | 2.7 | 2.7 | | | 18.7 | | | 22.9 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | 3.6 | 4.2 | | 2.7 | 2.7 | | | 18.7 | | | 22.9 | |
| LOS | A | A | | A | A | | | B | | | C | |
| Approach Delay | | 4.2 | | | 2.7 | | | 18.7 | | | 22.9 | |
| Approach LOS | | A | | | A | | | B | | | C | |
| Stops (vph) | 3 | 110 | | 10 | 57 | | | 39 | | | 21 | |
| Fuel Used(gal) | 0 | 4 | | 0 | 2 | | | 1 | | | 0 | |
| CO Emissions (g/hr) | 5 | 253 | | 15 | 111 | | | 52 | | | 27 | |
| NOx Emissions (g/hr) | 1 | 49 | | 3 | 22 | | | 10 | | | 5 | |
| VOC Emissions (g/hr) | 1 | 59 | | 3 | 26 | | | 12 | | | 6 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Queue Length 50th (ft) | 1 | 37 | | 3 | 22 | | | 16 | | | 11 | |
| Queue Length 95th (ft) | 4 | 80 | | 9 | 45 | | | 41 | | | 23 | |
| Internal Link Dist (ft) | | 940 | | | 398 | | | 406 | | | 673 | |
| Turn Bay Length (ft) | 50 | | | 150 | | | | | | | | |
| Base Capacity (vph) | 776 | 1377 | | 760 | 1375 | | | 429 | | | 377 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | 0.01 | 0.26 | | 0.06 | 0.24 | | | 0.21 | | | 0.10 | |

Intersection Summary

| | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 60 | | | |
| Actuated Cycle Length: 60 | | | |
| Offset: 55 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.36 | | | |
| Intersection Signal Delay: 5.8 | | Intersection LOS: A | |
| Intersection Capacity Utilization 46.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 4: West St & Jefferson St (Old 28)

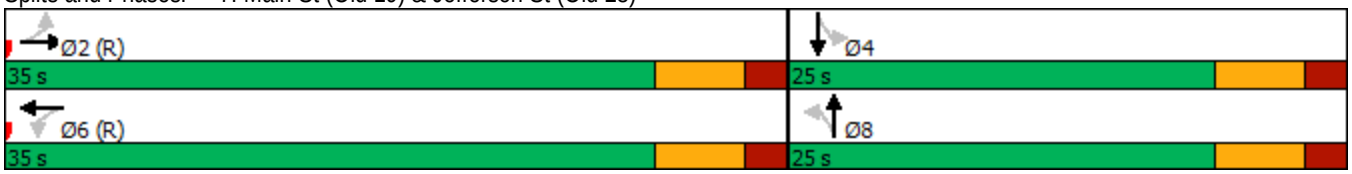


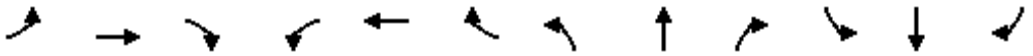
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 26 | 323 | 38 | 66 | 259 | 32 | 58 | 70 | 96 | 22 | 71 | 19 |
| Future Volume (vph) | 26 | 323 | 38 | 66 | 259 | 32 | 58 | 70 | 96 | 22 | 71 | 19 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Storage Length (ft) | 150 | | 0 | 190 | | 0 | 30 | | 0 | 50 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 50 | | | 100 | | |
| Satd. Flow (prot) | 1770 | 1833 | 0 | 1770 | 1831 | 0 | 1770 | 1703 | 0 | 1770 | 1803 | 0 |
| Flt Permitted | 0.563 | | | 0.537 | | | 0.673 | | | 0.625 | | |
| Satd. Flow (perm) | 1049 | 1833 | 0 | 1000 | 1831 | 0 | 1254 | 1703 | 0 | 1164 | 1803 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 14 | | | 14 | | | 114 | | | 24 | |
| Link Speed (mph) | | 25 | | | 25 | | | 30 | | | 30 | |
| Link Distance (ft) | | 478 | | | 471 | | | 476 | | | 769 | |
| Travel Time (s) | | 13.0 | | | 12.8 | | | 10.8 | | | 17.5 | |
| Lane Group Flow (vph) | 27 | 376 | 0 | 74 | 327 | 0 | 72 | 200 | 0 | 32 | 131 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Total Split (s) | 35.0 | 35.0 | | 35.0 | 35.0 | | 25.0 | 25.0 | | 25.0 | 25.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | | 6.0 | 6.0 | |
| Act Effct Green (s) | 37.0 | 37.0 | | 37.0 | 37.0 | | 11.0 | 11.0 | | 11.0 | 11.0 | |
| Actuated g/C Ratio | 0.62 | 0.62 | | 0.62 | 0.62 | | 0.18 | 0.18 | | 0.18 | 0.18 | |
| v/c Ratio | 0.04 | 0.33 | | 0.12 | 0.29 | | 0.31 | 0.49 | | 0.15 | 0.37 | |
| Control Delay | 3.4 | 4.4 | | 3.4 | 4.0 | | 21.2 | 11.7 | | 21.5 | 20.5 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 3.4 | 4.4 | | 3.4 | 4.0 | | 21.2 | 11.7 | | 21.5 | 20.5 | |
| LOS | A | A | | A | A | | C | B | | C | C | |
| Approach Delay | | 4.3 | | | 3.9 | | | 14.2 | | | 20.7 | |
| Approach LOS | | A | | | A | | | B | | | C | |
| Stops (vph) | 6 | 108 | | 13 | 74 | | 51 | 101 | | 20 | 62 | |
| Fuel Used(gal) | 0 | 2 | | 0 | 2 | | 1 | 2 | | 0 | 1 | |
| CO Emissions (g/hr) | 10 | 154 | | 25 | 118 | | 52 | 109 | | 24 | 88 | |
| NOx Emissions (g/hr) | 2 | 30 | | 5 | 23 | | 10 | 21 | | 5 | 17 | |
| VOC Emissions (g/hr) | 2 | 36 | | 6 | 27 | | 12 | 25 | | 5 | 20 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Queue Length 50th (ft) | 2 | 27 | | 5 | 18 | | 24 | 29 | | 10 | 35 | |
| Queue Length 95th (ft) | 7 | 47 | | 12 | 34 | | 47 | 64 | | 21 | 51 | |
| Internal Link Dist (ft) | | 398 | | | 391 | | | 396 | | | 689 | |
| Turn Bay Length (ft) | 150 | | | 190 | | | 30 | | | 50 | | |
| Base Capacity (vph) | 646 | 1134 | | 616 | 1133 | | 397 | 617 | | 368 | 587 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.04 | 0.33 | | 0.12 | 0.29 | | 0.18 | 0.32 | | 0.09 | 0.22 | |

Intersection Summary

| | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 60 | | | |
| Actuated Cycle Length: 60 | | | |
| Offset: 8 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.49 | | | |
| Intersection Signal Delay: 8.5 | | Intersection LOS: A | |
| Intersection Capacity Utilization 60.9% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 7: Main St (Old 19) & Jefferson St (Old 28)



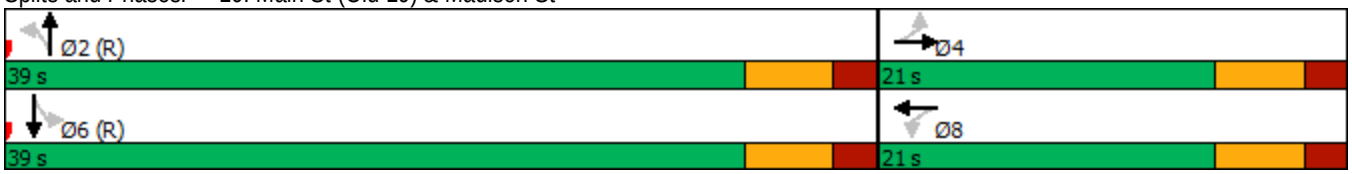


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 18 | 17 | 26 | 12 | 4 | 9 | 20 | 202 | 17 | 14 | 137 | 19 |
| Future Volume (vph) | 18 | 17 | 26 | 12 | 4 | 9 | 20 | 202 | 17 | 14 | 137 | 19 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Satd. Flow (prot) | 0 | 1728 | 0 | 0 | 1731 | 0 | 0 | 1837 | 0 | 0 | 1827 | 0 |
| Flt Permitted | | 0.886 | | | 0.803 | | | 0.972 | | | 0.971 | |
| Satd. Flow (perm) | 0 | 1555 | 0 | 0 | 1424 | 0 | 0 | 1792 | 0 | 0 | 1782 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 36 | | | 14 | | | 10 | | | 17 | |
| Link Speed (mph) | | 30 | | | 30 | | | 30 | | | 30 | |
| Link Distance (ft) | | 483 | | | 731 | | | 727 | | | 476 | |
| Travel Time (s) | | 11.0 | | | 16.6 | | | 16.5 | | | 10.8 | |
| Lane Group Flow (vph) | 0 | 84 | 0 | 0 | 39 | 0 | 0 | 291 | 0 | 0 | 185 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Total Split (s) | 21.0 | 21.0 | | 21.0 | 21.0 | | 39.0 | 39.0 | | 39.0 | 39.0 | |
| Total Lost Time (s) | | 6.0 | | | 6.0 | | | 6.0 | | | 6.0 | |
| Act Effct Green (s) | | 7.6 | | | 7.6 | | | 43.9 | | | 43.9 | |
| Actuated g/C Ratio | | 0.13 | | | 0.13 | | | 0.73 | | | 0.73 | |
| v/c Ratio | | 0.37 | | | 0.20 | | | 0.22 | | | 0.14 | |
| Control Delay | | 19.8 | | | 19.0 | | | 4.3 | | | 3.1 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 19.8 | | | 19.0 | | | 4.3 | | | 3.1 | |
| LOS | | B | | | B | | | A | | | A | |
| Approach Delay | | 19.8 | | | 19.0 | | | 4.3 | | | 3.1 | |
| Approach LOS | | B | | | B | | | A | | | A | |
| Stops (vph) | | 36 | | | 17 | | | 79 | | | 54 | |
| Fuel Used(gal) | | 1 | | | 0 | | | 2 | | | 1 | |
| CO Emissions (g/hr) | | 47 | | | 23 | | | 140 | | | 72 | |
| NOx Emissions (g/hr) | | 9 | | | 5 | | | 27 | | | 14 | |
| VOC Emissions (g/hr) | | 11 | | | 5 | | | 32 | | | 17 | |
| Dilemma Vehicles (#) | | 0 | | | 0 | | | 0 | | | 0 | |
| Queue Length 50th (ft) | | 16 | | | 8 | | | 31 | | | 21 | |
| Queue Length 95th (ft) | | 36 | | | 19 | | | 61 | | | 38 | |
| Internal Link Dist (ft) | | 403 | | | 651 | | | 647 | | | 396 | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | | 415 | | | 366 | | | 1315 | | | 1309 | |
| Starvation Cap Reductn | | 0 | | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.20 | | | 0.11 | | | 0.22 | | | 0.14 | |

Intersection Summary

| | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 60 | | | |
| Actuated Cycle Length: 60 | | | |
| Offset: 28 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of 1st Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.37 | | | |
| Intersection Signal Delay: 7.1 | | Intersection LOS: A | |
| Intersection Capacity Utilization 31.0% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 10: Main St (Old 19) & Madison St



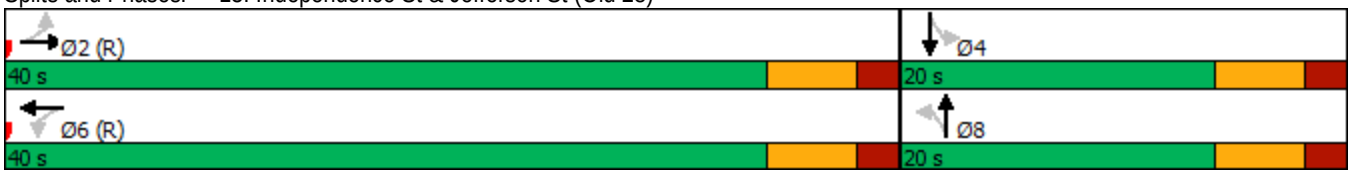
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 17 | 401 | 14 | 15 | 336 | 24 | 13 | 10 | 32 | 10 | 14 | 24 |
| Future Volume (vph) | 17 | 401 | 14 | 15 | 336 | 24 | 13 | 10 | 32 | 10 | 14 | 24 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Width (ft) | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 | 12 |
| Grade (%) | | 0% | | | 0% | | | 0% | | | 0% | |
| Storage Length (ft) | 100 | | 0 | 75 | | 0 | 0 | | 0 | 0 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 0 | | 0 | 0 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Satd. Flow (prot) | 1770 | 1853 | 0 | 1770 | 1844 | 0 | 0 | 1695 | 0 | 0 | 1719 | 0 |
| Flt Permitted | 0.533 | | | 0.490 | | | | 0.901 | | | 0.913 | |
| Satd. Flow (perm) | 993 | 1853 | 0 | 913 | 1844 | 0 | 0 | 1546 | 0 | 0 | 1585 | 0 |
| Right Turn on Red | | | Yes | | | Yes | | | Yes | | | Yes |
| Satd. Flow (RTOR) | | 5 | | | 10 | | | 35 | | | 32 | |
| Link Speed (mph) | | 25 | | | 25 | | | 30 | | | 30 | |
| Link Distance (ft) | | 471 | | | 605 | | | 1019 | | | 765 | |
| Travel Time (s) | | 12.8 | | | 16.5 | | | 23.2 | | | 17.4 | |
| Lane Group Flow (vph) | 20 | 477 | 0 | 16 | 387 | 0 | 0 | 60 | 0 | 0 | 64 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 2 | | | 6 | | | 8 | | | 4 | |
| Permitted Phases | 2 | | | 6 | | | 8 | | | 4 | | |
| Total Split (s) | 40.0 | 40.0 | | 40.0 | 40.0 | | 20.0 | 20.0 | | 20.0 | 20.0 | |
| Total Lost Time (s) | 6.0 | 6.0 | | 6.0 | 6.0 | | | 6.0 | | | 6.0 | |
| Act Effct Green (s) | 48.0 | 48.0 | | 48.0 | 48.0 | | | 7.0 | | | 7.0 | |
| Actuated g/C Ratio | 0.80 | 0.80 | | 0.80 | 0.80 | | | 0.12 | | | 0.12 | |
| v/c Ratio | 0.03 | 0.32 | | 0.02 | 0.26 | | | 0.29 | | | 0.30 | |
| Control Delay | 2.7 | 2.8 | | 3.7 | 3.8 | | | 16.8 | | | 18.1 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | 2.7 | 2.8 | | 3.7 | 3.8 | | | 16.8 | | | 18.1 | |
| LOS | A | A | | A | A | | | B | | | B | |
| Approach Delay | | 2.8 | | | 3.8 | | | 16.8 | | | 18.1 | |
| Approach LOS | | A | | | A | | | B | | | B | |
| Stops (vph) | 5 | 77 | | 7 | 102 | | | 29 | | | 27 | |
| Fuel Used(gal) | 0 | 2 | | 0 | 3 | | | 1 | | | 1 | |
| CO Emissions (g/hr) | 7 | 154 | | 8 | 176 | | | 55 | | | 43 | |
| NOx Emissions (g/hr) | 1 | 30 | | 2 | 34 | | | 11 | | | 8 | |
| VOC Emissions (g/hr) | 2 | 36 | | 2 | 41 | | | 13 | | | 10 | |
| Dilemma Vehicles (#) | 0 | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Queue Length 50th (ft) | 2 | 41 | | 1 | 42 | | | 8 | | | 11 | |
| Queue Length 95th (ft) | m5 | 66 | | 7 | 87 | | | 36 | | | 31 | |
| Internal Link Dist (ft) | | 391 | | | 525 | | | 939 | | | 685 | |
| Turn Bay Length (ft) | 100 | | | 75 | | | | | | | | |
| Base Capacity (vph) | 795 | 1484 | | 731 | 1478 | | | 387 | | | 394 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | 0.03 | 0.32 | | 0.02 | 0.26 | | | 0.16 | | | 0.16 | |

Intersection Summary

| | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 60 | | | |
| Actuated Cycle Length: 60 | | | |
| Offset: 55 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of 1st Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.32 | | | |
| Intersection Signal Delay: 5.0 | | Intersection LOS: A | |
| Intersection Capacity Utilization 36.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Independence St & Jefferson St (Old 28)



# APPENDIX C

SIGNAL WARRANT RESULTS

# Summary of Warrants

| | | | |
|---|---|---|---|
| Spot Number: | 0 | | |
| Major Street: | Jefferson St | Minor Street: | West St |
| Intersection: | Jefferson St at West St | | |
| City/Twp: | Tipton, IN | | |
| Date Performed: | 2/28/2023 | Performed By: | WBS |
| Date Volumes Collected: | 2/22/2023 | | |

| Warrant | Condition | Is Warrant Met |
|---|---|---|
| **Data Validation Error** | | **NO** |
| **WARRANT 1: Eight-Hour Vehicular Volume** | | **NO** |
| | Condition A | NO |
| | Condition B | NO |
| | Condition A&B | N/A |
| **WARRANT 2: Four-Hour Vehicular Volume** | (70%) | **NO** |
| **WARRANT 3: Peak-Hour Vehicular Volume** | (70%) | **#N/A** |
| | Condition A | **#N/A** |
| | Condition B | **NO** |
| **WARRANT 4: Pedestrian Volume** | (70%) | **NO** |
| | Four Hour | N/A |
| | Peak Hour | N/A |
| (Threshold) | HAWK | NO |
| (Threshold) | RRFB | NO |
| **WARRANT 5: School Crossing** | | **NO** |
| **WARRANT 6: Coordinated Signal System** | | **NO** |
| **WARRANT 7: Crash Experience** | | **NO** |
| | Condition A | NO |
| | Condition B | NO |
| **WARRANT 8: Roadway Network** | | **NO** |
| **WARRANT 9: Intersection Near a Grade Crossing** | | **#N/A** |

**Issue to Be Addressed by Signalization:**

**0**

**Indiana Manual of Uniform Traffic Control Devices**
**Worksheet for Signal Warrants (Section 4C)**
**WARRANT 1: Eight-Hour Vehicular Volume**

| Intersection: | Jefferson St @ West St | | |
|---|---|---|---|
| Date | 2/28/2023 | by | WBS |

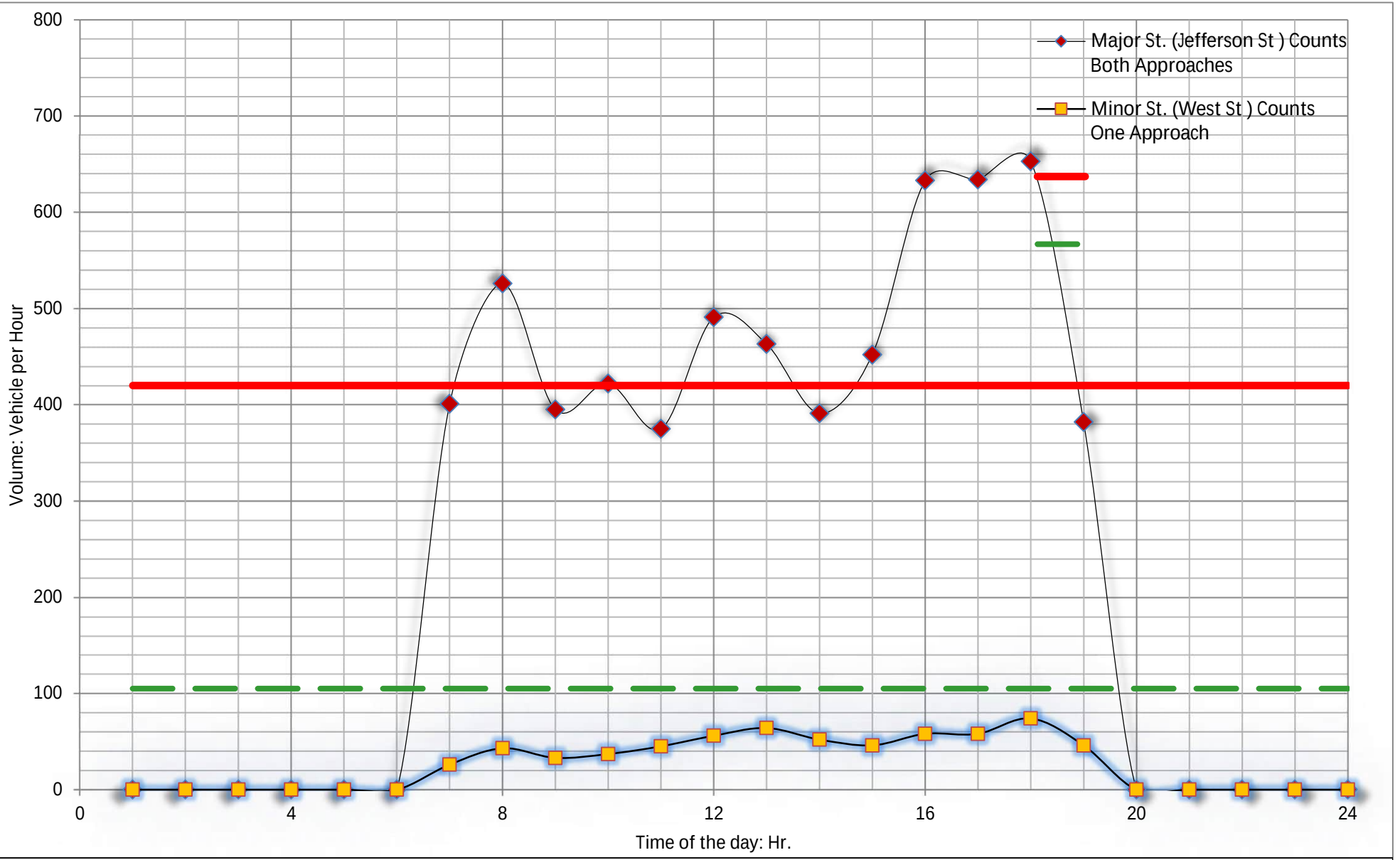
| | |
|---|---|
| **2** | **: No. of Lanes on Major St?** |
| **1** | **: No. of Lanes on Minor St?** |
| **0** | **: Speed limit or 85th Percentile? (MPH)** |
| **YES** | **: Is the intersection within an Isolated community?** |
| **5275** | **: if answer 4 is Yes, then what is the of the population isolated community?** |
| **NO** | **: Have other remedial measures been tried?** |

**USE 70% WARRANTS 1A AND 1B. DO NOT USE COMBINATION OF A & B**

| | Major Volume (Both Apr.) | Minor Volume (One Apr.) | Condition A Major Volume | Condition A Minor Volume | Warrant Condition A Met? | Condition B Major Volume | Condition B Minor Volume | Warrant Condition B Met? | Combination Major A | Combination Minor A | Combination Major B | Combination Minor B | Warrant Condition A&B met? | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Time** | **E-W** | N-S | | | | | | | | | | | | |
| 00:01 - 01:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 01:00 - 02:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 02:00 - 03:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 03:00 - 04:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 04:00 - 05:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 05:00 - 06:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 06:00 - 07:00 | 401 | 26 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 07:00 - 08:00 | 526 | 43 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 08:00 - 09:00 | 395 | 33 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 09:00 - 10:00 | 422 | 37 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 10:00 - 11:00 | 375 | 45 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 11:00 - 12:00 | 491 | 56 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 12:00 - 13:00 | 463 | 64 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 13:00 - 14:00 | 391 | 52 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 14:00 - 15:00 | 452 | 46 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 15:00 - 16:00 | 633 | 58 | 420 | 105 | **NO** | 630 | 53 | **YES** | N/A | N/A | N/A | N/A | **N/A** | |
| 16:00 - 17:00 | 634 | 58 | 420 | 105 | **NO** | 630 | 53 | **YES** | N/A | N/A | N/A | N/A | **N/A** | |
| 17:00 - 18:00 | 653 | 74 | 420 | 105 | **NO** | 630 | 53 | **YES** | N/A | N/A | N/A | N/A | **N/A** | |
| 18:00 - 19:00 | 382 | 46 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 19:00 - 20:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 20:00 - 21:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 21:00 - 22:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 22:00 - 23:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |
| 23:00 - 00:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** | |

| | |
|---|---|
| **Number of Hours that met the warrant 1A =** | **0** |
| **Number of Hours that met the warrant 1B =** | **3** |
| **Number of Hours that met the warrant 1 A & B =** | **0** |

| | |
|---|---|
| **A. Is the Minimum Vehicular Volume Warrant Met? (Condition A)** | **NO** |
| **B. Is the Interruption of Continuous Traffic Met? (Condition B)** | **NO** |
| **C. Combination of Warrants A and B Criteria Met?** | **N/A** |




# FIGURE 1: WARRANT 1A

IS THERE A REDUCTION IN THE WARRANT THRESHOLDS TO 70% ...

1- DUE TO SPEED? **NO**

2- DUE TO ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000? **YES**

Spot Number:

**Jefferson St @ West St**

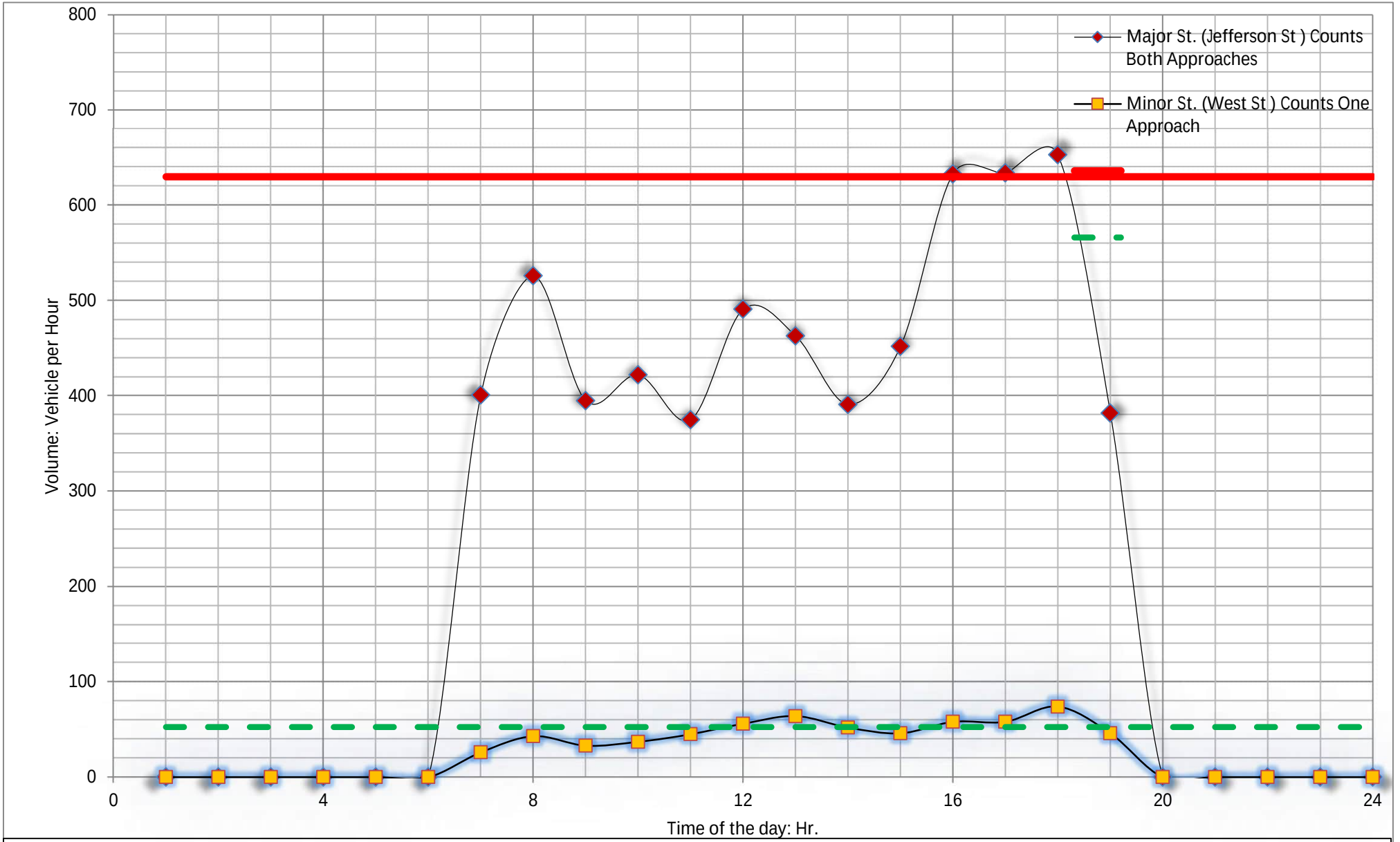
NO. OF LANES ON MAJOR ST.? **2**

NO. OF LANES ON MINOR ST.? **1**

Number of Hours that met the Warrant: **0**

Does this intersection meet Warrant 1A for signal installation? **NO**

Data Collection Date: **2/22/2023**




# FIGURE 1: WARRANT 1B

IS THERE A REDUCTION IN THE WARRANT THRESHOLDS TO 70% ...

1- DUE TO SPEED? **NO**

2- DUE TO ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000? **YES**

Spot Number:

**Jefferson St @ West St**

NO. OF LANES ON MAJOR ST.? **2**

NO. OF LANES ON MINOR ST.? **1**

Number of Hours that met the Warrant: **3**

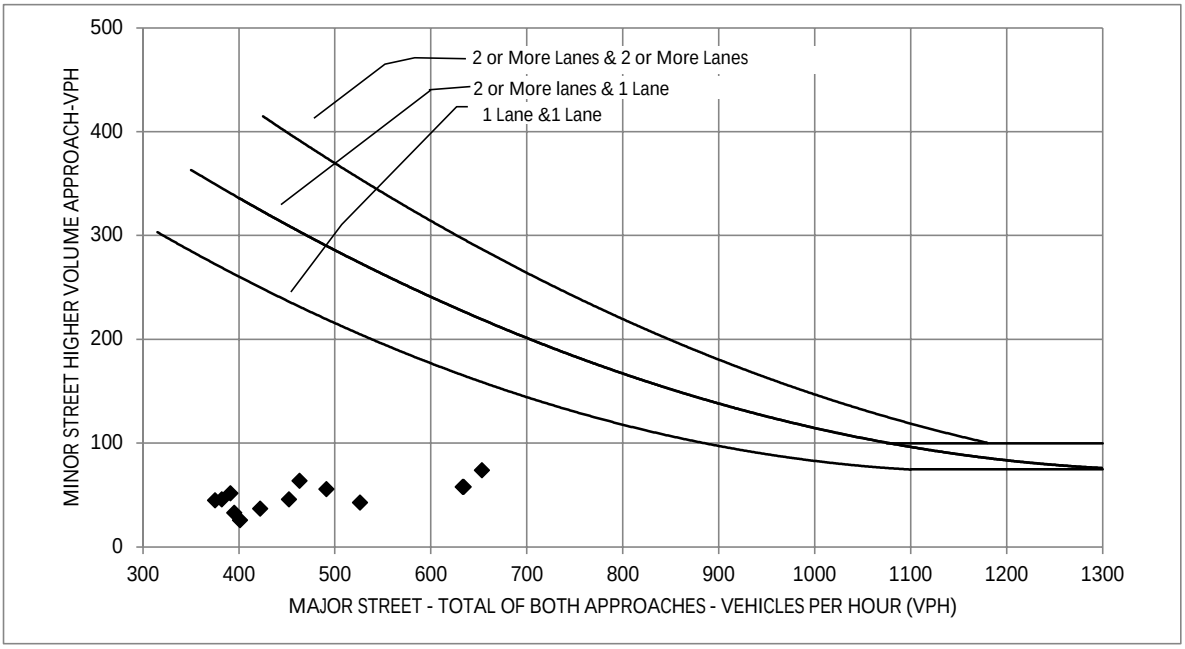
Does this intersection meet Warrant 1B for signal installation? **NO**

Data Collection Date: **2/22/2023**

**Indiana Manual of Uniform Traffic Control Devices**
**Worksheet for Signal Warrants (Section 4C)**
**WARRANT 3 B(70%): Peak-Hour Vehicular Volume**

| | | | |
|---|---|---|---|
| Spot Number: | 0 | | |
| Intersection: | Jefferson St @ West St | | |
| Date | 2/28/2023 | by | WBS |

| | |
|---|---|
| **2** | **: No. of Lanes on Major St.** |
| **1** | **: No. of Lanes on Minor St.** |
| **30** | **: Speed limit or 85th Percentile? (MPH)** |
| **YES** | **: Is the intersection within an Isolated community?** |
| **5275** | **: What is the of the population isolated community?** |




| | |
|---|---|
| **How Many Hours Are Met** | **0** |
| **Is Warrant (70%) Met?** | **NO** |

# Summary of Warrants

| | | | |
|---|---|---|---|
| Spot Number: | 0 | | |
| Major Street: | Jefferson St | Minor Street: | Main St |
| Intersection: | Jefferson St at Main St | | |
| City/Twp: | Tipton, IN | | |
| Date Performed: | 2/28/2023 | Performed By: | WBS |
| Date Volumes Collected: | 2/22/2023 | | |

| Warrant | Condition | Is Warrant Met |
|---|---|---|
| | | |
| **Data Validation Error** | | **NO** |
| | | |
| | | |
| **WARRANT 1: Eight-Hour Vehicular Volume** | | **NO** |
| | Condition A | NO |
| | Condition B | NO |
| | Condition A&B | N/A |
| | | |
| **WARRANT 2: Four-Hour Vehicular Volume** | (70%) | **NO** |
| | | |
| **WARRANT 3: Peak-Hour Vehicular Volume** | (70%) | **NO** |
| | Condition A | **NO** |
| | Condition B | **NO** |
| | | |
| **WARRANT 4: Pedestrian Volume** | (70%) | **NO** |
| | Four Hour | N/A |
| | Peak Hour | N/A |
| (Threshold) | HAWK | NO |
| (Threshold) | RRFB | NO |
| | | |
| **WARRANT 5: School Crossing** | | **NO** |
| | | |
| **WARRANT 6: Coordinated Signal System** | | **NO** |
| | | |
| **WARRANT 7: Crash Experience** | | **NO** |
| | Condition A | NO |
| | Condition B | NO |
| | | |
| **WARRANT 8: Roadway Network** | | **NO** |
| | | |
| **WARRANT 9: Intersection Near a Grade Crossing** | | **#N/A** |

**Issue to Be Addressed by Signalization:**

**0**

**Indiana Manual of Uniform Traffic Control Devices**
**Worksheet for Signal Warrants (Section 4C)**
**WARRANT 1: Eight-Hour Vehicular Volume**

| Intersection: | Jefferson St @ Main St | | |
|---|---|---|---|
| Date | 2/28/2023 | by | WBS |

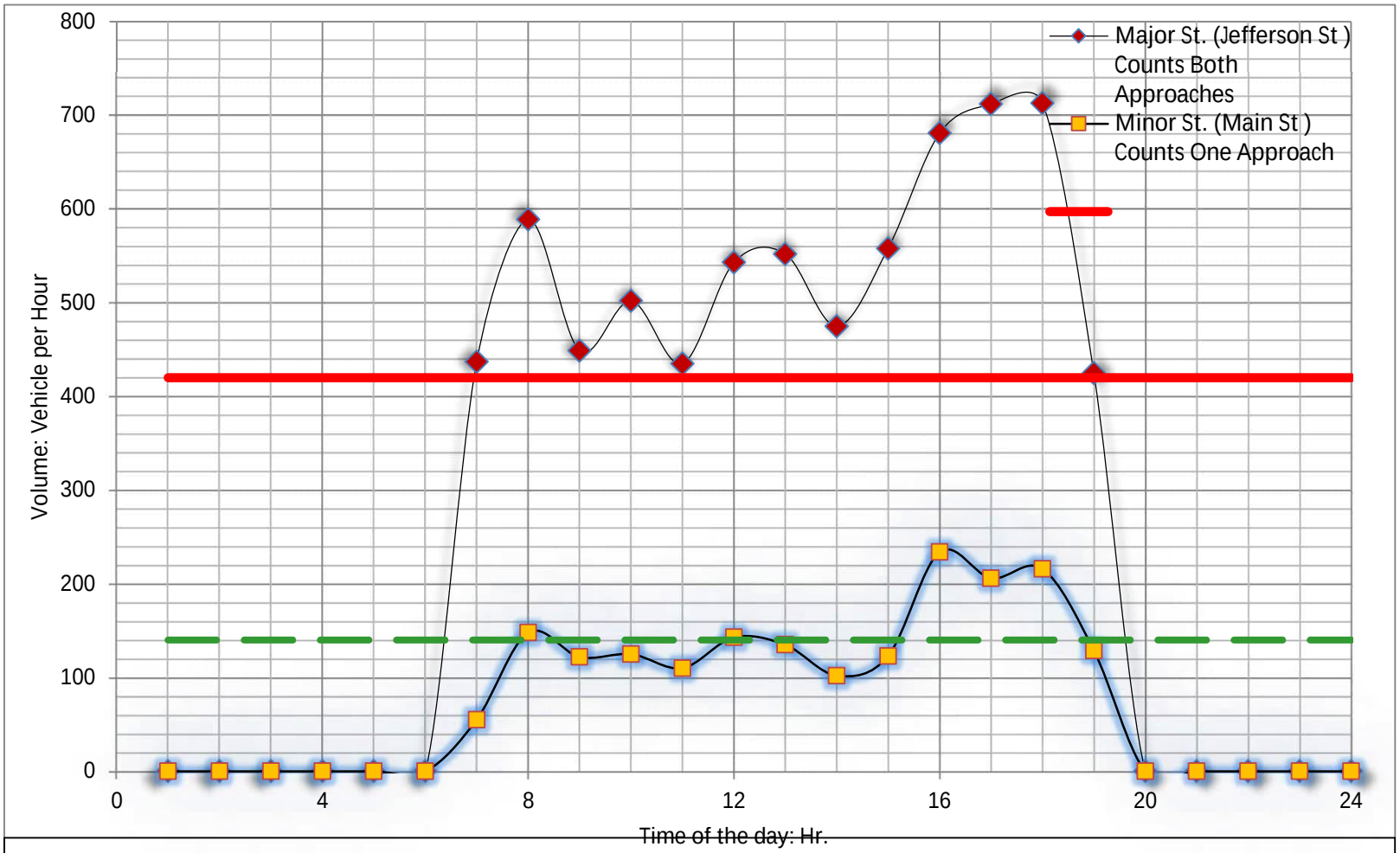
| | |
|---|---|
| **2** | **: No. of Lanes on Major St?** |
| **2** | **: No. of Lanes on Minor St?** |
| **25** | **: Speed limit or 85th Percentile? (MPH)** |
| **YES** | **: Is the intersection within an Isolated community?** |
| **5275** | **: if answer 4 is Yes, then what is the of the population isolated community?** |
| **NO** | **: Have other remedial measures been tried?** |

**USE 70% WARRANTS 1A AND 1B. DO NOT USE COMBINATION OF A & B**

| | Major Volume (Both Apr.) | Minor Volume (One Apr.) | Condition A Major Volume | Condition A Minor Volume | Warrant Condition A Met? | Condition B Major Volume | Condition B Minor Volume | Warrant Condition B Met? | Combination Major A | Combination Minor A | Combination Major B | Combination Minor B | Warrant Condition A&B met? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Time** | **E-W** | N-S | | | | | | | | | | | |
| 00:01 - 01:00 | 0 | 0 | 420 | 140 | **NO** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 01:00 - 02:00 | 0 | 0 | 420 | 140 | **NO** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 02:00 - 03:00 | 0 | 0 | 420 | 140 | **NO** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 03:00 - 04:00 | 0 | 0 | 420 | 140 | **NO** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 04:00 - 05:00 | 0 | 0 | 420 | 140 | **NO** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 05:00 - 06:00 | 0 | 0 | 420 | 140 | **NO** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 06:00 - 07:00 | 437 | 55 | 420 | 140 | **NO** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 07:00 - 08:00 | 589 | 148 | 420 | 140 | **YES** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 08:00 - 09:00 | 449 | 122 | 420 | 140 | **NO** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 09:00 - 10:00 | 502 | 125 | 420 | 140 | **NO** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 10:00 - 11:00 | 435 | 110 | 420 | 140 | **NO** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 11:00 - 12:00 | 543 | 143 | 420 | 140 | **YES** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 12:00 - 13:00 | 552 | 135 | 420 | 140 | **NO** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 13:00 - 14:00 | 475 | 102 | 420 | 140 | **NO** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 14:00 - 15:00 | 558 | 123 | 420 | 140 | **NO** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 15:00 - 16:00 | 681 | 234 | 420 | 140 | **YES** | 630 | 70 | **YES** | N/A | N/A | N/A | N/A | **N/A** |
| 16:00 - 17:00 | 712 | 206 | 420 | 140 | **YES** | 630 | 70 | **YES** | N/A | N/A | N/A | N/A | **N/A** |
| 17:00 - 18:00 | 713 | 216 | 420 | 140 | **YES** | 630 | 70 | **YES** | N/A | N/A | N/A | N/A | **N/A** |
| 18:00 - 19:00 | 425 | 129 | 420 | 140 | **NO** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 19:00 - 20:00 | 0 | 0 | 420 | 140 | **NO** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 20:00 - 21:00 | 0 | 0 | 420 | 140 | **NO** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 21:00 - 22:00 | 0 | 0 | 420 | 140 | **NO** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 22:00 - 23:00 | 0 | 0 | 420 | 140 | **NO** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 23:00 - 00:00 | 0 | 0 | 420 | 140 | **NO** | 630 | 70 | **NO** | N/A | N/A | N/A | N/A | **N/A** |

| | |
|---|---|
| **Number of Hours that met the warrant 1A =** | **5** |
| **Number of Hours that met the warrant 1B =** | **3** |
| **Number of Hours that met the warrant 1 A & B =** | **0** |

| | |
|---|---|
| **A. Is the Minimum Vehicular Volume Warrant Met? (Condition A)** | **NO** |
| **B. Is the Interruption of Continuous Traffic Met? (Condition B)** | **NO** |
| **C. Combination of Warrants A and B Criteria Met?** | **N/A** |




# FIGURE 1: WARRANT

Spot Number: **Jefferson St @ Main St**

Number of Hours that met the Warrant: **5**

IS THERE A REDUCTION IN THE WARRANT

1- DUE TO SPEED? **N**

2- DUE TO ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000? **YES**

NO. OF LANES ON MAJOR ST.? **2**

NO. OF LANES ON MINOR ST.? **2**

Does this intersection meet Warrant 1A for signal installation? **NO**

Data Collection Date: **2/22/2023**

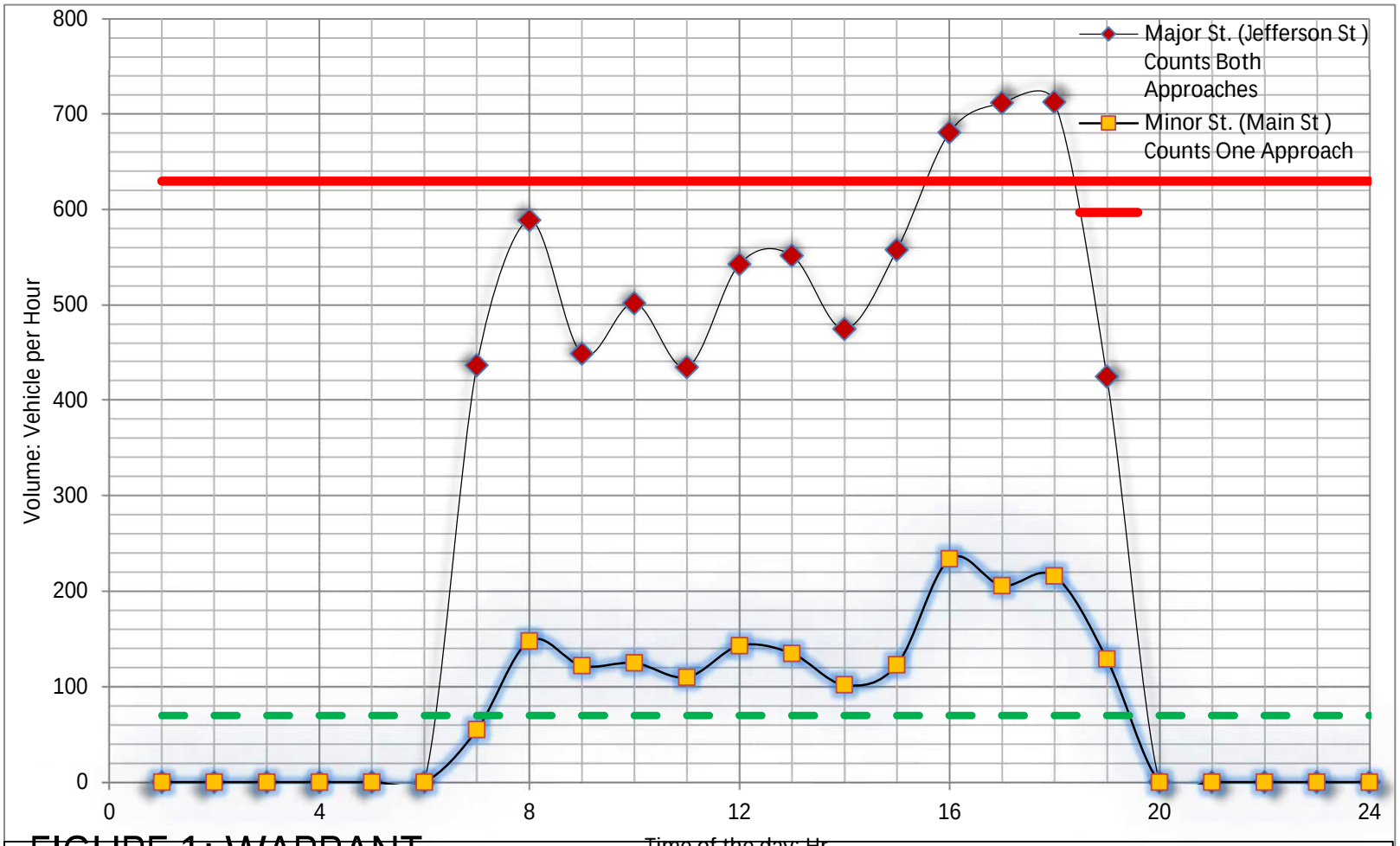



FIGURE 1: WARRANT 1B

IS THERE A REDUCTION IN THE WARRANT THRESHOLDS TO 70% ...

1- DUE TO SPEED? **NO**

2- DUE TO ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000? **YES**

Spot Number: **Jefferson St @ Main St**

NO. OF LANES ON MAJOR ST.? **2**

NO. OF LANES ON MINOR ST.? **2**

Number of Hours that met the Warrant: **3**

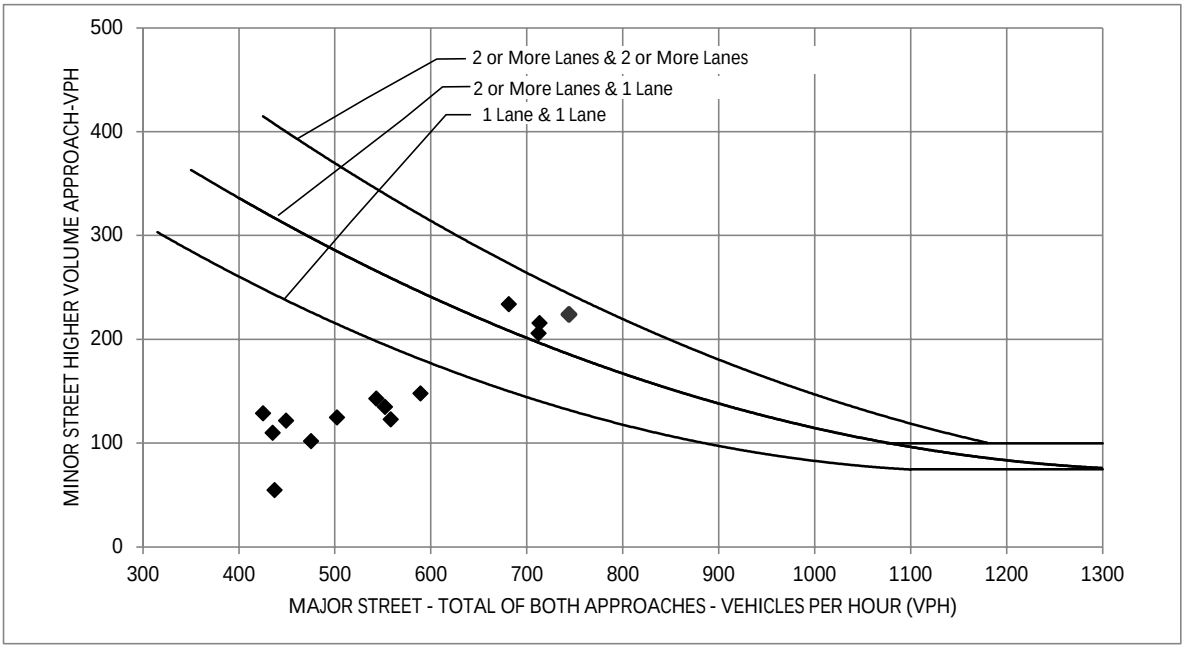
Does this intersection meet Warrant 1B for signal installation? **NO**

Data Collection Date: **2/22/2023**

**Indiana Manual of Uniform Traffic Control Devices**
**Worksheet for Signal Warrants (Section 4C)**
**WARRANT 3 B(70%): Peak-Hour Vehicular Volume**

| | | | |
|---|---|---|---|
| Spot Number: | 0 | | |
| Intersection: | Jefferson St @ Main St | | |
| Date | 2/28/2023 | by | WBS |

| | |
|---|---|
| **2** | **: No. of Lanes on Major St.** |
| **2** | **: No. of Lanes on Minor St.** |
| **25** | **: Speed limit or 85th Percentile? (MPH)** |
| **YES** | **: Is the intersection within an Isolated community?** |
| **5275** | **: What is the of the population isolated community?** |




| | |
|---|---|
| **How Many Hours Are Met** | **0** |
| **Is Warrant (70%) Met?** | **NO** |

# Summary of Warrants

| | | | |
|---|---|---|---|
| Spot Number: | 0 | | |
| Major Street: | Jefferson St | Minor Street: | Independence St |
| Intersection: | Jefferson St at Independence St | | |
| City/Twp: | Tipton, IN | | |
| Date Performed: | 2/28/2023 | Performed By: | WBS |
| Date Volumes Collected: | 2/22/2023 | | |

| Warrant | Condition | Is Warrant Met |
|---|---|---|
| | | |
| **Data Validation Error** | | **NO** |
| | | |
| | | |
| **WARRANT 1: Eight-Hour Vehicular Volume** | | **NO** |
| | Condition A | NO |
| | Condition B | NO |
| | Condition A&B | N/A |
| | | |
| **WARRANT 2: Four-Hour Vehicular Volume** | (70%) | **NO** |
| | | |
| **WARRANT 3: Peak-Hour Vehicular Volume** | (70%) | **NO** |
| | Condition A | **NO** |
| | Condition B | **NO** |
| | | |
| **WARRANT 4: Pedestrian Volume** | (70%) | **NO** |
| | Four Hour | N/A |
| | Peak Hour | N/A |
| (Threshold) | HAWK | NO |
| (Threshold) | RRFB | NO |
| | | |
| **WARRANT 5: School Crossing** | | **NO** |
| | | |
| **WARRANT 6: Coordinated Signal System** | | **NO** |
| | | |
| **WARRANT 7: Crash Experience** | | **NO** |
| | Condition A | NO |
| | Condition B | NO |
| | | |
| **WARRANT 8: Roadway Network** | | **NO** |
| | | |
| **WARRANT 9: Intersection Near a Grade Crossing** | | **#N/A** |

**Issue to Be Addressed by Signalization:**

**0**

**Indiana Manual of Uniform Traffic Control Devices**
**Worksheet for Signal Warrants (Section 4C)**
**WARRANT 1: Eight-Hour Vehicular Volume**

| Intersection: | Jefferson St @ Independence St | | |
|---|---|---|---|
| Date | 2/28/2023 | by | WBS |

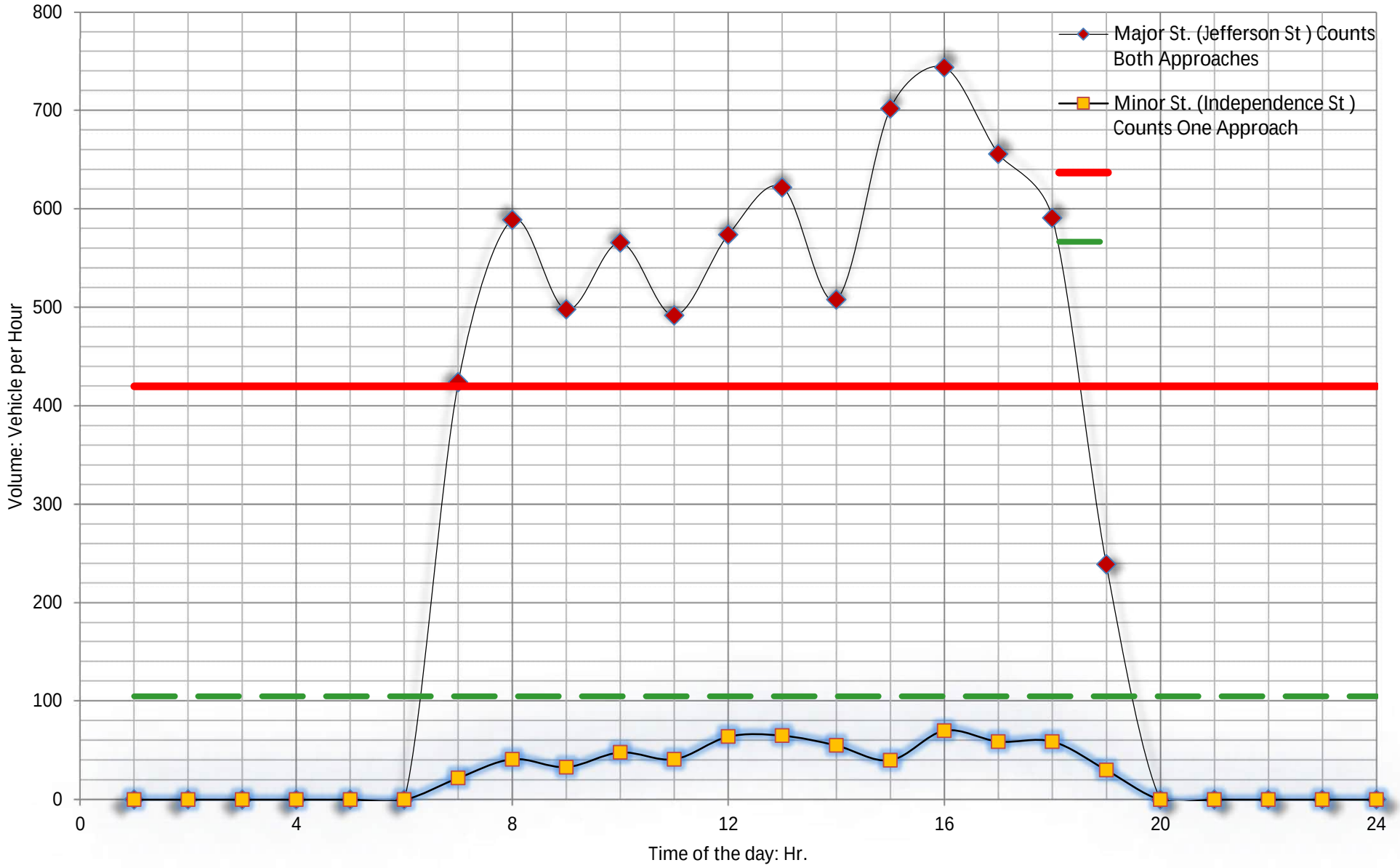
| | |
|---|---|
| **2** | **: No. of Lanes on Major St?** |
| **1** | **: No. of Lanes on Minor St?** |
| **25** | **: Speed limit or 85th Percentile? (MPH)** |
| **YES** | **: Is the intersection within an Isolated community?** |
| **5275** | **: if answer 4 is Yes, then what is the of the population isolated community?** |
| **NO** | **: Have other remedial measures been tried?** |

**USE 70% WARRANTS 1A AND 1B. DO NOT USE COMBINATION OF A & B**

| | Major Volume (Both Apr.) | Minor Volume (One Apr.) | Condition A Major Volume | Condition A Minor Volume | Warrant Condition A Met? | Condition B Major Volume | Condition B Minor Volume | Warrant Condition B Met? | Combination Major A | Combination Minor A | Combination Major B | Combination Minor B | Warrant Condition A&B met? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Time** | **E-W** | N-S | | | | | | | | | | | |
| 00:01 - 01:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 01:00 - 02:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 02:00 - 03:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 03:00 - 04:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 04:00 - 05:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 05:00 - 06:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 06:00 - 07:00 | 424 | 22 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 07:00 - 08:00 | 589 | 41 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 08:00 - 09:00 | 498 | 33 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 09:00 - 10:00 | 566 | 48 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 10:00 - 11:00 | 492 | 41 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 11:00 - 12:00 | 574 | 64 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 12:00 - 13:00 | 622 | 65 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 13:00 - 14:00 | 508 | 55 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 14:00 - 15:00 | 702 | 40 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 15:00 - 16:00 | 744 | 70 | 420 | 105 | **NO** | 630 | 53 | **YES** | N/A | N/A | N/A | N/A | **N/A** |
| 16:00 - 17:00 | 656 | 59 | 420 | 105 | **NO** | 630 | 53 | **YES** | N/A | N/A | N/A | N/A | **N/A** |
| 17:00 - 18:00 | 591 | 59 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 18:00 - 19:00 | 239 | 30 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 19:00 - 20:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 20:00 - 21:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 21:00 - 22:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 22:00 - 23:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 23:00 - 00:00 | 0 | 0 | 420 | 105 | **NO** | 630 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |

| | |
|---|---|
| **Number of Hours that met the warrant 1A =** | **0** |
| **Number of Hours that met the warrant 1B =** | **2** |
| **Number of Hours that met the warrant 1 A & B =** | **0** |

| | |
|---|---|
| **A. Is the Minimum Vehicular Volume Warrant Met? (Condition A)** | **NO** |
| **B. Is the Interruption of Continuous Traffic Met? (Condition B)** | **NO** |
| **C. Combination of Warrants A and B Criteria Met?** | **N/A** |




# FIGURE 1: WARRANT 1A

IS THERE A REDUCTION IN THE WARRANT THRESHOLDS TO 70% ...

1- DUE TO SPEED? **NO**

2- DUE TO ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000? **YES**

Spot Number:

**Jefferson St @ Independence St**

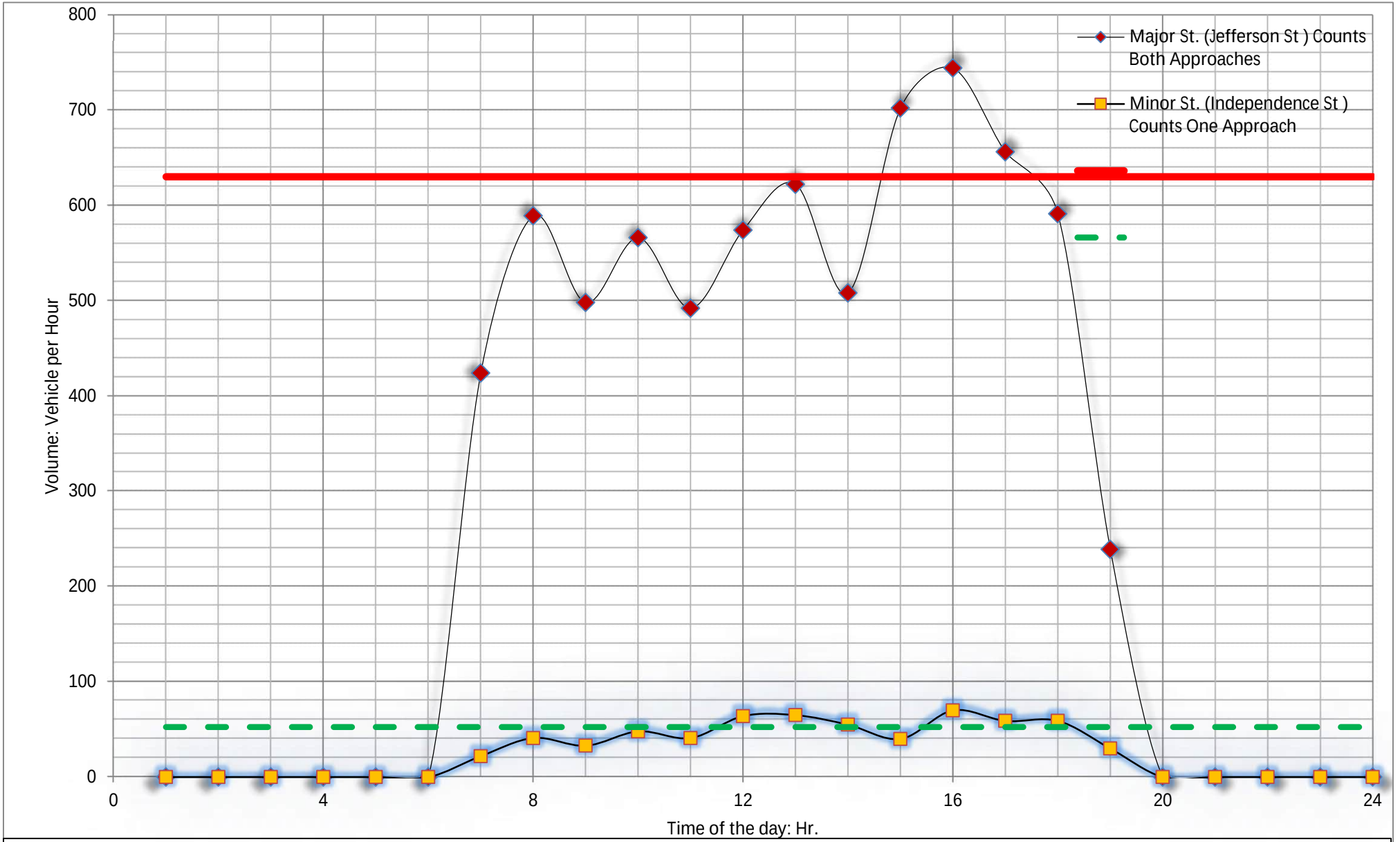
NO. OF LANES ON MAJOR ST.? **2**

NO. OF LANES ON MINOR ST.? **1**

Number of Hours that met the Warrant: **0**

Does this intersection meet Warrant 1A for signal installation? **NO**

Data Collection Date: **2/22/2023**




# FIGURE 1: WARRANT 1B

IS THERE A REDUCTION IN THE WARRANT THRESHOLDS TO 70% ...

1- DUE TO SPEED? **NO**

2- DUE TO ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000? **YES**

Spot Number:

**Jefferson St @ Independence St**

NO. OF LANES ON MAJOR ST.? **2**

NO. OF LANES ON MINOR ST.? **1**

Number of Hours that met the Warrant: **2**

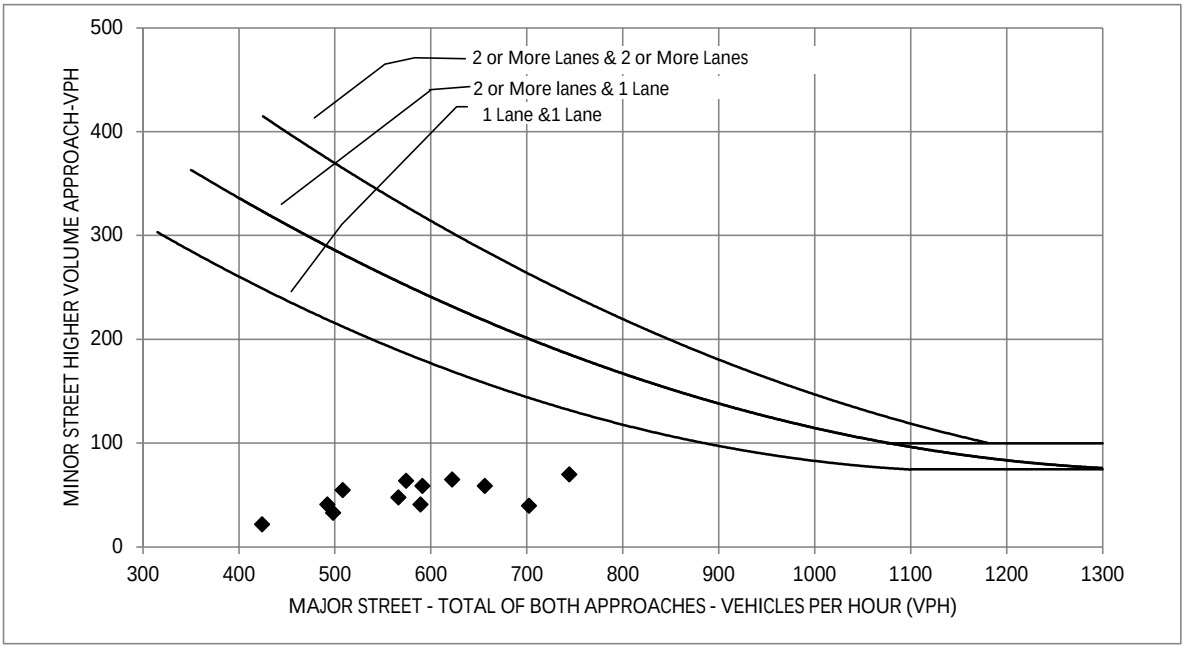
Does this intersection meet Warrant 1B for signal installation? **NO**

Data Collection Date: **2/22/2023**

**Indiana Manual of Uniform Traffic Control Devices**
**Worksheet for Signal Warrants (Section 4C)**
**WARRANT 3 B(70%): Peak-Hour Vehicular Volume**

| | | | |
|---|---|---|---|
| Spot Number: | 0 | | |
| Intersection: | Jefferson St @ Independence St | | |
| Date | 2/28/2023 | by | WBS |

| | |
|---|---|
| **2** | **: No. of Lanes on Major St.** |
| **1** | **: No. of Lanes on Minor St.** |
| **25** | **: Speed limit or 85th Percentile? (MPH)** |
| **YES** | **: Is the intersection within an Isolated community?** |
| **5275** | **: What is the of the population isolated community?** |




| | |
|---|---|
| **How Many Hours Are Met** | **0** |
| **Is Warrant (70%) Met?** | **NO** |

# Summary of Warrants

| | | | |
|---|---|---|---|
| Spot Number: | 0 | | |
| Major Street: | Main St | Minor Street: | Madison St |
| Intersection: | Main St at Madison St | | |
| City/Twp: | Tipton, IN | | |
| Date Performed: | 2/28/2023 | Performed By: | WBS |
| Date Volumes Collected: | 2/22/2023 | | |

| Warrant | Condition | Is Warrant Met |
|---|---|---|
| | | |
| **Data Validation Error** | | **NO** |
| | | |
| | | |
| **WARRANT 1: Eight-Hour Vehicular Volume** | | **NO** |
| | Condition A | NO |
| | Condition B | NO |
| | Condition A&B | N/A |
| | | |
| **WARRANT 2: Four-Hour Vehicular Volume** | (70%) | **NO** |
| | | |
| **WARRANT 3: Peak-Hour Vehicular Volume** | (70%) | **#N/A** |
| | Condition A | **#N/A** |
| | Condition B | **NO** |
| | | |
| **WARRANT 4: Pedestrian Volume** | (70%) | **NO** |
| | Four Hour | N/A |
| | Peak Hour | N/A |
| (Threshold) | HAWK | NO |
| (Threshold) | RRFB | NO |
| | | |
| **WARRANT 5: School Crossing** | | **NO** |
| | | |
| **WARRANT 6: Coordinated Signal System** | | **NO** |
| | | |
| **WARRANT 7: Crash Experience** | | **NO** |
| | Condition A | NO |
| | Condition B | NO |
| | | |
| **WARRANT 8: Roadway Network** | | **NO** |
| | | |
| **WARRANT 9: Intersection Near a Grade Crossing** | | **#N/A** |

**Issue to Be Addressed by Signalization:**

**0**

## Indiana Manual of Uniform Traffic Control Devices
### Worksheet for Signal Warrants (Section 4C)
### WARRANT 1: Eight-Hour Vehicular Volume

| Intersection: | Main St @ Madison St | | |
|---|---|---|---|
| Date | 2/28/2023 | by | WBS |

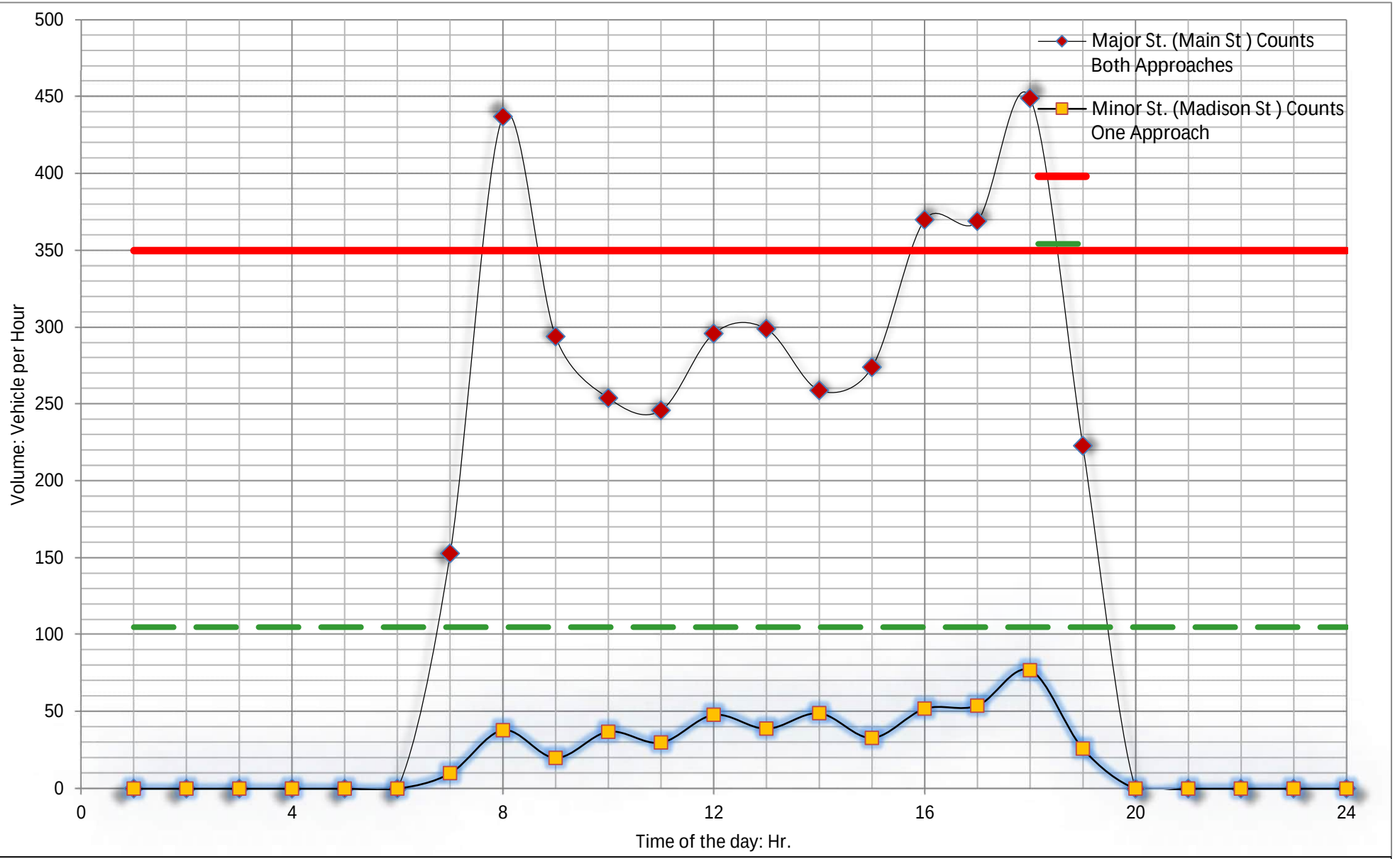
| | |
|---|---|
| **1** | **: No. of Lanes on Major St?** |
| **1** | **: No. of Lanes on Minor St?** |
| **30** | **: Speed limit or 85th Percentile? (MPH)** |
| **YES** | **: Is the intersection within an Isolated community?** |
| **5275** | **: if answer 4 is Yes, then what is the of the population isolated community?** |
| **NO** | **: Have other remedial measures been tried?** |

**USE 70% WARRANTS 1A AND 1B. DO NOT USE COMBINATION OF A & B**

| | Major Volume (Both Apr.) | Minor Volume (One Apr.) | Condition A Major Volume | Condition A Minor Volume | Warrant Condition A Met? | Condition B Major Volume | Condition B Minor Volume | Warrant Condition B Met? | Combination Major A | Combination Minor A | Combination Major B | Combination Minor B | Warrant Condition A&B met? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Time** | **N-S** | E-W | | | | | | | | | | | |
| 00:01 - 01:00 | 0 | 0 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 01:00 - 02:00 | 0 | 0 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 02:00 - 03:00 | 0 | 0 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 03:00 - 04:00 | 0 | 0 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 04:00 - 05:00 | 0 | 0 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 05:00 - 06:00 | 0 | 0 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 06:00 - 07:00 | 153 | 10 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 07:00 - 08:00 | 437 | 38 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 08:00 - 09:00 | 294 | 20 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 09:00 - 10:00 | 254 | 37 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 10:00 - 11:00 | 246 | 30 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 11:00 - 12:00 | 296 | 48 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 12:00 - 13:00 | 299 | 39 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 13:00 - 14:00 | 259 | 49 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 14:00 - 15:00 | 274 | 33 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 15:00 - 16:00 | 370 | 52 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 16:00 - 17:00 | 369 | 54 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 17:00 - 18:00 | 449 | 77 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 18:00 - 19:00 | 223 | 26 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 19:00 - 20:00 | 0 | 0 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 20:00 - 21:00 | 0 | 0 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 21:00 - 22:00 | 0 | 0 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 22:00 - 23:00 | 0 | 0 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |
| 23:00 - 00:00 | 0 | 0 | 350 | 105 | **NO** | 525 | 53 | **NO** | N/A | N/A | N/A | N/A | **N/A** |

| | |
|---|---|
| **Number of Hours that met the warrant 1A =** | **0** |
| **Number of Hours that met the warrant 1B =** | **0** |
| **Number of Hours that met the warrant 1 A & B =** | **0** |

| | |
|---|---|
| **A. Is the Minimum Vehicular Volume Warrant Met? (Condition A)** | **NO** |
| **B. Is the Interruption of Continuous Traffic Met? (Condition B)** | **NO** |
| **C. Combination of Warrants A and B Criteria Met?** | **N/A** |




# FIGURE 1: WARRANT 1A

IS THERE A REDUCTION IN THE WARRANT THRESHOLDS TO 70% ...

1- DUE TO SPEED? **NO**

2- DUE TO ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000? **YES**

Spot Number:

**Main St @ Madison St**

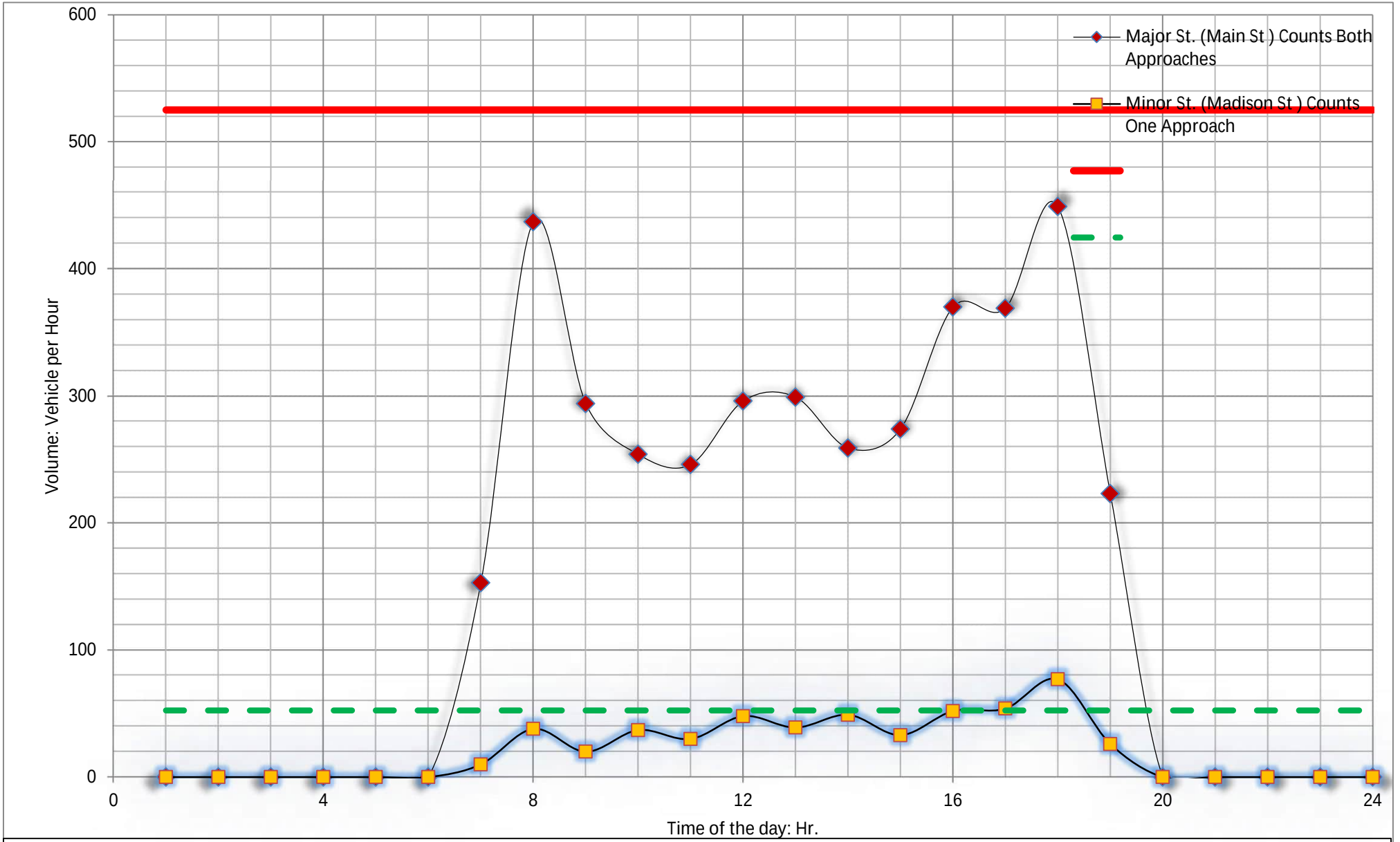
NO. OF LANES ON MAJOR ST.? **1**

NO. OF LANES ON MINOR ST.? **1**

Number of Hours that met the Warrant: **0**

Does this intersection meet Warrant 1A for signal installation? **NO**

Data Collection Date: **2/22/2023**




# FIGURE 1: WARRANT 1B

IS THERE A REDUCTION IN THE WARRANT THRESHOLDS TO 70% ...

1- DUE TO SPEED? **NO**

2- DUE TO ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000? **YES**

Spot Number:

**Main St @ Madison St**

NO. OF LANES ON MAJOR ST.? **1**

NO. OF LANES ON MINOR ST.? **1**

Number of Hours that met the Warrant: **0**

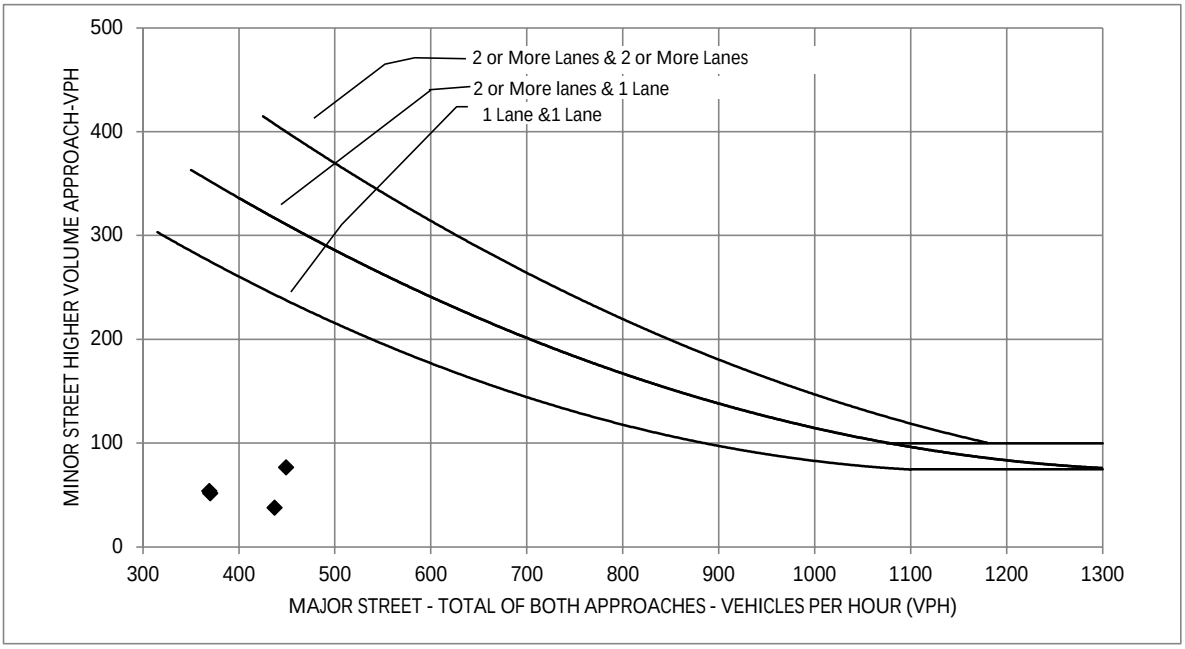
Does this intersection meet Warrant 1B for signal installation? **NO**

Data Collection Date: **2/22/2023**

# Indiana Manual of Uniform Traffic Control Devices
## Worksheet for Signal Warrants (Section 4C)
## WARRANT 3 B(70%): Peak-Hour Vehicular Volume

| | | | |
|---|---|---|---|
| Spot Number: | 0 | | |
| Intersection: | Main St @ Madison St | | |
| Date | 2/28/2023 | by | WBS |

| | |
|---|---|
| **1** | **: No. of Lanes on Major St.** |
| **1** | **: No. of Lanes on Minor St.** |
| **30** | **: Speed limit or 85th Percentile? (MPH)** |
| **YES** | **: Is the intersection within an Isolated community?** |
| **5275** | **: What is the of the population isolated community?** |




| | |
|---|---|
| **How Many Hours Are Met** | **0** |
| **Is Warrant (70%) Met?** | **NO** |

# APPENDIX D

SYNCHRO RESULTS TWO-WAY STOP-CONTROLLED

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 3 | 244 | 25 | 11 | 244 | 8 | 23 | 7 | 16 | 5 | 16 | 3 |
| Future Vol, veh/h | 3 | 244 | 25 | 11 | 244 | 8 | 23 | 7 | 16 | 5 | 16 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 50 | - | - | 150 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 75 | 75 | 75 | 84 | 84 | 84 | 68 | 68 | 68 | 50 | 50 | 50 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 325 | 33 | 13 | 290 | 10 | 34 | 10 | 24 | 10 | 32 | 6 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 300 | 0 | 0 | 358 | 0 | 0 | 690 | 676 | 342 | 688 | 687 | 295 |
| Stage 1 | - | - | - | - | - | - | 350 | 350 | - | 321 | 321 | - |
| Stage 2 | - | - | - | - | - | - | 340 | 326 | - | 367 | 366 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1261 | - | - | 1201 | - | - | 359 | 375 | 701 | 360 | 370 | 744 |
| Stage 1 | - | - | - | - | - | - | 666 | 633 | - | 691 | 652 | - |
| Stage 2 | - | - | - | - | - | - | 675 | 648 | - | 653 | 623 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1261 | - | - | 1201 | - | - | 329 | 370 | 701 | 337 | 365 | 744 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 329 | 370 | - | 337 | 365 | - |
| Stage 1 | - | - | - | - | - | - | 664 | 631 | - | 689 | 645 | - |
| Stage 2 | - | - | - | - | - | - | 629 | 641 | - | 619 | 621 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 0.3 | 15.4 | 15.7 |
| HCM LOS | | | C | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 412 | 1261 | - | - | 1201 | - | - | 383 |
| HCM Lane V/C Ratio | 0.164 | 0.003 | - | - | 0.011 | - | - | 0.125 |
| HCM Control Delay (s) | 15.4 | 7.9 | - | - | 8 | - | - | 15.7 |
| HCM Lane LOS | C | A | - | - | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.6 | 0 | - | - | 0 | - | - | 0.4 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 14.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 14 | 185 | 66 | 97 | 214 | 18 | 32 | 58 | 66 | 16 | 117 | 21 |
| Future Vol, veh/h | 14 | 185 | 66 | 97 | 214 | 18 | 32 | 58 | 66 | 16 | 117 | 21 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 150 | - | - | 190 | - | - | 30 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 77 | 77 | 77 | 86 | 86 | 86 | 59 | 59 | 59 | 70 | 70 | 70 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 18 | 240 | 86 | 113 | 249 | 21 | 54 | 98 | 112 | 23 | 167 | 30 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 270 | 0 | 0 | 326 | 0 | 0 | 903 | 815 | 283 | 910 | 848 | 260 |
| Stage 1 | - | - | - | - | - | - | 319 | 319 | - | 486 | 486 | - |
| Stage 2 | - | - | - | - | - | - | 584 | 496 | - | 424 | 362 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1293 | - | - | 1234 | - | - | 258 | 312 | 756 | 255 | 298 | 779 |
| Stage 1 | - | - | - | - | - | - | 693 | 653 | - | 563 | 551 | - |
| Stage 2 | - | - | - | - | - | - | 498 | 545 | - | 608 | 625 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1293 | - | - | 1234 | - | - | 115 | 279 | 756 | 146 | 267 | 779 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 115 | 279 | - | 146 | 267 | - |
| Stage 1 | - | - | - | - | - | - | 683 | 644 | - | 555 | 500 | - |
| Stage 2 | - | - | - | - | - | - | 290 | 495 | - | 433 | 616 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.4 | 2.4 | 30 | 37.7 |
| HCM LOS | | | D | E |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 115 | 420 | 1293 | - | - | 1234 | - | - | 146 | 297 |
| HCM Lane V/C Ratio | 0.472 | 0.5 | 0.014 | - | - | 0.091 | - | - | 0.157 | 0.664 |
| HCM Control Delay (s) | 61.6 | 21.9 | 7.8 | - | - | 8.2 | - | - | 34.2 | 38.1 |
| HCM Lane LOS | F | C | A | - | - | A | - | - | D | E |
| HCM 95th %tile Q(veh) | 2.1 | 2.7 | 0 | - | - | 0.3 | - | - | 0.5 | 4.4 |

| 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 | 7 | 33 | 13 | 4 | 7 | 20 | 159 | 14 | 5 | 264 | 13 |
| Future Vol, veh/h | 2 | 7 | 33 | 13 | 4 | 7 | 20 | 159 | 14 | 5 | 264 | 13 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 58 | 58 | 58 | 75 | 75 | 75 | 57 | 57 | 57 | 66 | 66 | 66 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 3 | 12 | 57 | 17 | 5 | 9 | 35 | 279 | 25 | 8 | 400 | 20 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 795 | 800 | 410 | 823 | 798 | 292 | 420 | 0 | 0 | 304 | 0 | 0 |
| Stage 1 | 426 | 426 | - | 362 | 362 | - | - | - | - | - | - | - |
| Stage 2 | 369 | 374 | - | 461 | 436 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 305 | 318 | 642 | 292 | 319 | 747 | 1139 | - | - | 1257 | - | - |
| Stage 1 | 606 | 586 | - | 657 | 625 | - | - | - | - | - | - | - |
| Stage 2 | 651 | 618 | - | 581 | 580 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 287 | 304 | 642 | 249 | 305 | 747 | 1139 | - | - | 1257 | - | - |
| Mov Cap-2 Maneuver | 287 | 304 | - | 249 | 305 | - | - | - | - | - | - | - |
| Stage 1 | 584 | 581 | - | 633 | 602 | - | - | - | - | - | - | - |
| Stage 2 | 614 | 595 | - | 514 | 575 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 13.1 | 17.5 | 0.9 | 0.1 |
| HCM LOS | B | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1139 | - | - | 516 | 321 | 1257 | - | - |
| HCM Lane V/C Ratio | 0.031 | - | - | 0.14 | 0.1 | 0.006 | - | - |
| HCM Control Delay (s) | 8.3 | 0 | - | 13.1 | 17.5 | 7.9 | 0 | - |
| HCM Lane LOS | A | A | - | B | C | A | A | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.5 | 0.3 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 5 | 239 | 6 | 17 | 325 | 14 | 6 | 8 | 13 | 9 | 14 | 16 |
| Future Vol, veh/h | 5 | 239 | 6 | 17 | 325 | 14 | 6 | 8 | 13 | 9 | 14 | 16 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | 75 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 81 | 81 | 81 | 94 | 94 | 94 | 61 | 61 | 61 | 75 | 75 | 75 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 6 | 295 | 7 | 18 | 346 | 15 | 10 | 13 | 21 | 12 | 19 | 21 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 361 | 0 | 0 | 302 | 0 | 0 | 721 | 708 | 299 | 718 | 704 | 354 |
| Stage 1 | - | - | - | - | - | - | 311 | 311 | - | 390 | 390 | - |
| Stage 2 | - | - | - | - | - | - | 410 | 397 | - | 328 | 314 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1198 | - | - | 1259 | - | - | 343 | 360 | 741 | 344 | 361 | 690 |
| Stage 1 | - | - | - | - | - | - | 699 | 658 | - | 634 | 608 | - |
| Stage 2 | - | - | - | - | - | - | 619 | 603 | - | 685 | 656 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1198 | - | - | 1259 | - | - | 315 | 353 | 741 | 320 | 354 | 690 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 315 | 353 | - | 320 | 354 | - |
| Stage 1 | - | - | - | - | - | - | 696 | 655 | - | 631 | 599 | - |
| Stage 2 | - | - | - | - | - | - | 573 | 595 | - | 649 | 653 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0.4 | 13.7 | 14.5 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 456 | 1198 | - | - | 1259 | - | - | 429 |
| HCM Lane V/C Ratio | 0.097 | 0.005 | - | - | 0.014 | - | - | 0.121 |
| HCM Control Delay (s) | 13.7 | 8 | - | - | 7.9 | - | - | 14.5 |
| HCM Lane LOS | B | A | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.3 | 0 | - | - | 0 | - | - | 0.4 |

| 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 | 7 | 324 | 17 | 38 | 277 | 20 | 29 | 9 | 33 | 8 | 14 | 3 |
| Future Vol, veh/h | 7 | 324 | 17 | 38 | 277 | 20 | 29 | 9 | 33 | 8 | 14 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 50 | - | - | 150 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 89 | 89 | 89 | 80 | 80 | 80 | 69 | 69 | 69 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 7 | 338 | 18 | 43 | 311 | 22 | 36 | 11 | 41 | 12 | 20 | 4 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 333 | 0 | 0 | 356 | 0 | 0 | 781 | 780 | 347 | 795 | 778 | 322 |
| Stage 1 | - | - | - | - | - | - | 361 | 361 | - | 408 | 408 | - |
| Stage 2 | - | - | - | - | - | - | 420 | 419 | - | 387 | 370 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1226 | - | - | 1203 | - | - | 312 | 327 | 696 | 305 | 328 | 719 |
| Stage 1 | - | - | - | - | - | - | 657 | 626 | - | 620 | 597 | - |
| Stage 2 | - | - | - | - | - | - | 611 | 590 | - | 637 | 620 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1226 | - | - | 1203 | - | - | 285 | 313 | 696 | 270 | 314 | 719 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 285 | 313 | - | 270 | 314 | - |
| Stage 1 | - | - | - | - | - | - | 653 | 622 | - | 616 | 576 | - |
| Stage 2 | - | - | - | - | - | - | 565 | 569 | - | 585 | 616 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0.9 | 16.6 | 17.7 |
| HCM LOS | | | C | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 399 | 1226 | - | - | 1203 | - | - | 319 |
| HCM Lane V/C Ratio | 0.222 | 0.006 | - | - | 0.035 | - | - | 0.114 |
| HCM Control Delay (s) | 16.6 | 8 | - | - | 8.1 | - | - | 17.7 |
| HCM Lane LOS | C | A | - | - | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.8 | 0 | - | - | 0.1 | - | - | 0.4 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 10.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 26 | 323 | 38 | 66 | 259 | 32 | 58 | 70 | 96 | 22 | 71 | 19 |
| Future Vol, veh/h | 26 | 323 | 38 | 66 | 259 | 32 | 58 | 70 | 96 | 22 | 71 | 19 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 150 | - | - | 190 | - | - | 30 | - | - | 50 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 89 | 89 | 89 | 81 | 81 | 84 | 69 | 69 | 69 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 336 | 40 | 74 | 291 | 36 | 72 | 86 | 114 | 32 | 103 | 28 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 327 | 0 | 0 | 376 | 0 | 0 | 933 | 885 | 356 | 967 | 887 | 309 |
| Stage 1 | - | - | - | - | - | - | 410 | 410 | - | 457 | 457 | - |
| Stage 2 | - | - | - | - | - | - | 523 | 475 | - | 510 | 430 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1233 | - | - | 1182 | - | - | 246 | 284 | 688 | 234 | 283 | 731 |
| Stage 1 | - | - | - | - | - | - | 619 | 595 | - | 583 | 568 | - |
| Stage 2 | - | - | - | - | - | - | 537 | 557 | - | 546 | 583 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1233 | - | - | 1182 | - | - | 154 | 260 | 688 | 136 | 259 | 731 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 154 | 260 | - | 136 | 259 | - |
| Stage 1 | - | - | - | - | - | - | 605 | 582 | - | 570 | 532 | - |
| Stage 2 | - | - | - | - | - | - | 391 | 522 | - | 379 | 570 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.5 | 1.5 | 29 | 28.6 |
| HCM LOS | | | D | D |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 154 | 403 | 1233 | - | - | 1182 | - | - | 136 | 300 |
| HCM Lane V/C Ratio | 0.465 | 0.498 | 0.022 | - | - | 0.063 | - | - | 0.234 | 0.435 |
| HCM Control Delay (s) | 47.2 | 22.5 | 8 | - | - | 8.2 | - | - | 39.4 | 25.9 |
| HCM Lane LOS | E | C | A | - | - | A | - | - | E | D |
| HCM 95th %tile Q(veh) | 2.2 | 2.7 | 0.1 | - | - | 0.2 | - | - | 0.9 | 2.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 18 | 17 | 26 | 12 | 4 | 9 | 20 | 202 | 17 | 14 | 137 | 19 |
| Future Vol, veh/h | 18 | 17 | 26 | 12 | 4 | 9 | 20 | 202 | 17 | 14 | 137 | 19 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 73 | 73 | 73 | 63 | 63 | 63 | 82 | 82 | 82 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 25 | 23 | 36 | 19 | 6 | 14 | 24 | 246 | 21 | 15 | 149 | 21 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 505 | 505 | 160 | 524 | 505 | 257 | 170 | 0 | 0 | 267 | 0 | 0 |
| Stage 1 | 190 | 190 | - | 305 | 305 | - | - | - | - | - | - | - |
| Stage 2 | 315 | 315 | - | 219 | 200 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 478 | 470 | 885 | 464 | 470 | 782 | 1407 | - | - | 1297 | - | - |
| Stage 1 | 812 | 743 | - | 705 | 662 | - | - | - | - | - | - | - |
| Stage 2 | 696 | 656 | - | 783 | 736 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 453 | 454 | 885 | 417 | 454 | 782 | 1407 | - | - | 1297 | - | - |
| Mov Cap-2 Maneuver | 453 | 454 | - | 417 | 454 | - | - | - | - | - | - | - |
| Stage 1 | 796 | 733 | - | 691 | 649 | - | - | - | - | - | - | - |
| Stage 2 | 663 | 643 | - | 718 | 726 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 12.4 | 12.7 | 0.6 | 0.6 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1407 | - | - | 572 | 509 | 1297 | - | - |
| HCM Lane V/C Ratio | 0.017 | - | - | 0.146 | 0.078 | 0.012 | - | - |
| HCM Control Delay (s) | 7.6 | 0 | - | 12.4 | 12.7 | 7.8 | 0 | - |
| HCM Lane LOS | A | A | - | B | B | A | A | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.5 | 0.3 | 0 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 17 | 401 | 14 | 15 | 336 | 24 | 13 | 10 | 32 | 10 | 14 | 24 |
| Future Vol, veh/h | 17 | 401 | 14 | 15 | 336 | 24 | 13 | 10 | 32 | 10 | 14 | 24 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | 75 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 87 | 87 | 87 | 93 | 93 | 93 | 92 | 92 | 92 | 75 | 75 | 75 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 20 | 461 | 16 | 16 | 361 | 26 | 14 | 11 | 35 | 13 | 19 | 32 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 387 | 0 | 0 | 477 | 0 | 0 | 941 | 928 | 469 | 938 | 923 | 374 |
| Stage 1 | - | - | - | - | - | - | 509 | 509 | - | 406 | 406 | - |
| Stage 2 | - | - | - | - | - | - | 432 | 419 | - | 532 | 517 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1171 | - | - | 1085 | - | - | 243 | 268 | 594 | 244 | 270 | 672 |
| Stage 1 | - | - | - | - | - | - | 547 | 538 | - | 622 | 598 | - |
| Stage 2 | - | - | - | - | - | - | 602 | 590 | - | 531 | 534 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1171 | - | - | 1085 | - | - | 214 | 259 | 594 | 217 | 261 | 672 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 214 | 259 | - | 217 | 261 | - |
| Stage 1 | - | - | - | - | - | - | 538 | 529 | - | 611 | 589 | - |
| Stage 2 | - | - | - | - | - | - | 547 | 581 | - | 481 | 525 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.3 | 0.3 | 17 | 17.4 |
| HCM LOS | | | C | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 359 | 1171 | - | - | 1085 | - | - | 354 |
| HCM Lane V/C Ratio | 0.167 | 0.017 | - | - | 0.015 | - | - | 0.181 |
| HCM Control Delay (s) | 17 | 8.1 | - | - | 8.4 | - | - | 17.4 |
| HCM Lane LOS | C | A | - | - | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.6 | 0.1 | - | - | 0 | - | - | 0.7 |

# *APPENDIX E*

INDIANA DESIGN MANUAL SIGHT DISTANCE REQUIREMENTS

## 46-10.03 Stop Control

Where traffic on the minor road of an intersection is controlled by a "Stop" sign, the driver of the vehicle on the minor road must have sufficient sight distance for a safe departure from the stopped position assuming that the approaching vehicle comes into view as the stopped vehicle begins its departure. The location of the eye should be as described in Section 46-10.03(01).

### 46-10.03(01) Departure Sight Triangle and Time Gap

The departure sight triangle for an intersection with stop control on the minor road must consider the situations as follows:

1. left turn from the minor road;
2. right turn from the minor road; and
3. crossing the major road from minor-road approach.

A departure sight triangle for traffic approaching from either the right or left, like that shown in Figure 46-10F, Departure Sight Triangles, should be provided for a left turn from the minor road onto the major road for each stop-controlled approach.

Field observations of the gaps in major-road traffic actually accepted by drivers turning onto the major road have shown that the values shown in Figure 46-10G, Intersection Sight Distance for Stop-Controlled Intersection, provide sufficient time for the minor-road vehicle to accelerate from a stop and complete a left turn without unduly interfering with major-road traffic operations.

The intersection sight distance in both directions should be equal to the distance traveled at the design speed of the major road during a period of time equal to the time gap. At a minimum, ISD should be checked for both a passenger car and a single unit truck turning from the minor-road approach. Where a substantial volume of heavy vehicles enter the major road, the use of combination trucks should be considered.

No adjustment is needed for the major-road grade. However, if the minor-road design vehicle is a truck and the intersection is located near a sag vertical curve with a grade over 3%, an adjustment of the intersection sight distance should be considered.

Figure 46-10G provides the criteria for intersection sight distance in both directions for a vehicle turning left.

Intersection sight distance for a left turn at a divided-highway intersection should consider multiple design vehicles and median width. If the design vehicle used to determine sight distance for a divided-highway intersection is larger than a passenger car, sight distance for a left turn will need to be checked for that selected design vehicle and for smaller design vehicles as well. If the divided-highway median is wide enough to store the design vehicle with a clearance to the through lanes of 3 ft at both ends of the vehicle, no separate analysis for the departure sight triangle for a left turn is needed on the minor-road approach for the near roadway to the left.

If the design vehicle can be stored in the median with adequate clearance to the through lanes, a departure sight triangle to the right for a left turn should be provided for that design vehicle turning left from the median roadway. Where the median is not wide enough to store the design vehicle, a departure sight triangle should be provided for that design vehicle to turn left from the minor-road approach. The median width should be considered in determining the number of lanes to be crossed. The median width should be converted to an equivalent number of lanes.

The sight triangle for a left or right turn onto the major road will also provide more than adequate sight distance for a minor-road vehicle to cross the major road. However, the intersection sight distance for a crossing maneuver must be checked for the situations as follows:

1. where left or right turns are not permitted from a particular approach and the crossing maneuver is the only legal maneuver;

2. where the crossing vehicle would cross the equivalent width of more than 6 lanes; or

3. where a substantial volume of heavy vehicles cross the highway, and steep grades that might slow such vehicles while their back portions are still in the intersection are present on the departure roadway on the far side of the intersection.

The time gap shown in Figure 46-10H(1), Time Gap for Crossing Maneuver, may be used for the crossing-maneuver check.

Figure 46-10H, Intersection Sight Distance for Passenger Car to Turn Right provides the intersection sight distance for a passenger car making a right turn from a stop or a crossing maneuver.

At a divided-highway intersection, depending on the median width and the length of the design vehicle, intersection sight distance may need to be considered for crossing both roadways of a divided highway or for crossing the near lanes only and stopping in the median before proceeding.

The ISD value will establish one leg of the sight triangle which needs to be visible to the entering vehicle. The leg on the stop-controlled road or street will be determined by the assumed location of the eye. This is established as 18 ft behind the edge of the travel lane for a new or reconstruction project, or 14.5 ft for a 3R project (see Figure 46-10F, Departure Sight Triangle).

### 46-10.03(02) Measures to Improve Intersection Sight Distance

The available ISD should be checked using the parameters described above. If the line of sight falls above a bridge railing and guardrail and the ISD value from Figure 46-10G is provided, no further investigation is needed. If the line of sight is restricted by the bridge railing, guardrail, or other obstruction, or the horizontal and vertical alignment of the major road and the ISD value is not available, one or more of the modifications, or a combination of them, should be evaluated to achieve the intersection sight distance as follows:

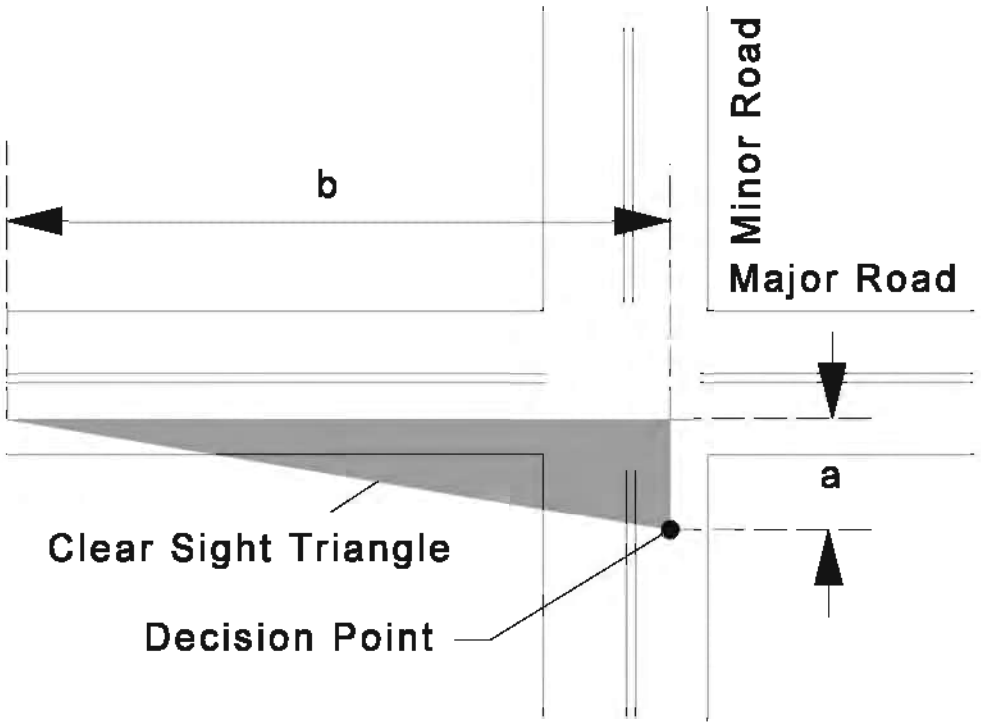
1. relocate the minor road or drive farther from the end of the bridge;
2. widen the structure on the side where the railing is restricting the line of sight;
3. flare the approach guardrail;
4. revise the grades on the major road or the minor road or drive;
5. remove the obstruction that is restricting sight distance;
6. close the minor road or drive;
7. make the minor road or drive one-way away from the major road; or
8. review other measures that may be practical at a particular location.

If intersection sight distance along the major road cannot be achieved, consideration should be given to installing advance intersection signing with advisory speed plates.

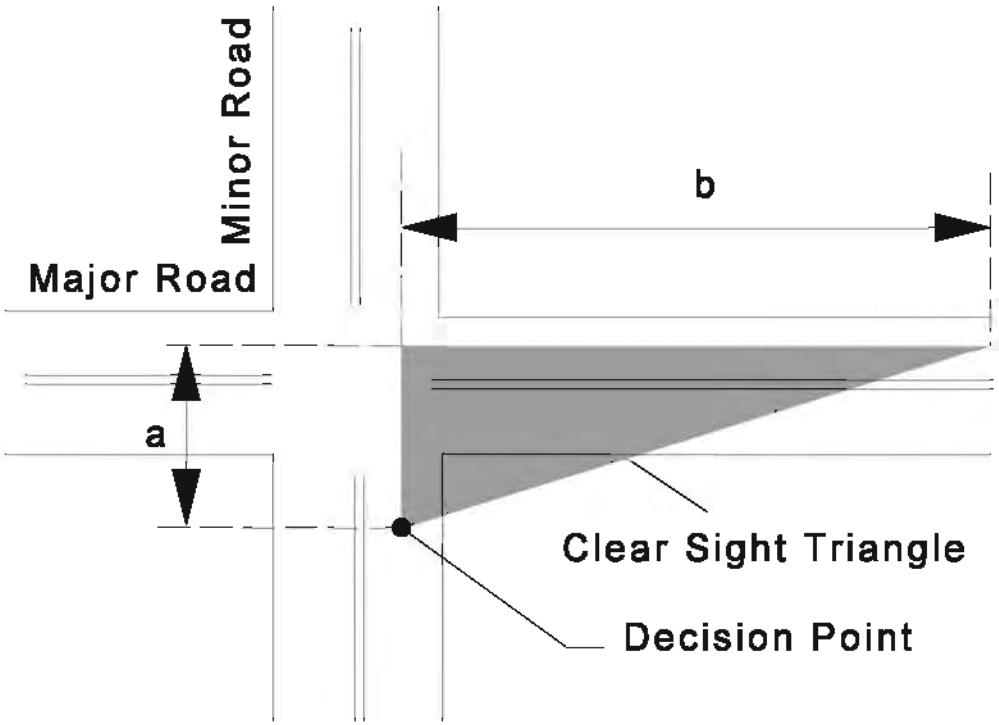
## 46-10.04 Left Turn From the Major Road

Each location along the major road from which a vehicle is permitted to turn left across opposing traffic, including an intersection or drive, should have sufficient sight distance to accommodate the left-turn maneuver. A left-turning driver needs sufficient sight distance to decide when it is safe to turn left across the lanes used by opposing traffic. Sight distance design should be based on a left turn by a stopped vehicle, since a vehicle that turns left without stopping would need less sight distance. The sight distance along the major road to accommodate a left turn is the distance traversed at the design speed of the major road in the travel time for the design vehicle shown in Figure 46-10 I.

The figure also includes appropriate adjustment factors for the number of major-road lanes to be crossed by the turning vehicle. The unadjusted time gap shown in Figure 46-10 I for a passenger car was used to develop the sight distance shown in Figure 46-10J.




Clear Sight Triangle for Viewing
Traffic Approaching from the Left.




Clear Sight Triangle for Viewing
Traffic Approaching from the Right.

## DEPARTURE SIGHT TRIANGLES

Figure 46-10F

| $V_{major}$ (mph) | Passenger Car | | | | Single-Unit Truck | | Combination Truck | |
|---|---|---|---|---|---|---|---|---|
| | Local Road | | Collector or Arterial | | | | | |
| | $t_g$ (s) | ISD (ft) | $t_g$ (s) | ISD (ft) | $t_g$ (s) | ISD (ft) | $t_g$ (s) | ISD (ft) |
| 15 | 7.5 | 170 | 7.5 | 170 | 9.5 | 210 | 11.5 | 260 |
| 20 | 7.5 | 220 | 7.5 | 220 | 9.5 | 280 | 11.5 | 340 |
| 25 | 7.5 | 280 | 7.5 | 280 | 9.5 | 350 | 11.5 | 430 |
| 30 | 7.5 | 330 | 7.5 | 330 | 9.5 | 420 | 11.5 | 510 |
| 35 | 7.5 | 390 | 7.5 | 390 | 9.5 | 490 | 11.5 | 600 |
| 40 | 7.5 | 440 | 7.5 | 440 | 9.5 | 560 | 11.5 | 680 |
| 45 | 7.5 | 500 | 7.5 | 500 | 9.5 | 630 | 11.5 | 760 |
| 50 | 7.5 | 550 | 8.5 | 630 | 10.5 | 780 | 12.5 | 920 |
| 55 | 7.5 | 610 | 9.0 | 730 | 11.0 | 890 | 13.0 | 1060 |
| 60 | 7.5 | 670 | 9.5 | 840 | 11.5 | 1020 | 13.5 | 1190 |
| 65 | 7.5 | 720 | 10.0 | 960 | 12.0 | 1150 | 14.0 | 1340 |
| 70 | 7.5 | 780 | 10.0 | 1030 | 12.0 | 1240 | 14.0 | 1440 |

$V_{major}$ = Design speed of major road

$t_g$ = Time gap for minor road vehicle to enter major road

ISD = Intersection sight distance (length of leg of sight triangle along major road)

ISD is shown for a stopped vehicle to turn left onto a two-lane highway with approach grades of 3% or flatter. For other conditions, the time gap should be adjusted and the required ISD recalculated using the formula ISD = 1.47 $V_{major}$ $t_g$ .

For a left turn onto a two-way highway with more than two lanes, add 0.5 s for a passenger car, or 0.7 s for a truck for each additional lane from the left in excess of one, to be crossed by a turning vehicle.

For the minor-road approach, if its grade is an upgrade that is steeper than 3%, add 0.2 s for each percent grade for a left turn. The adjustment for the minor-road approach grade is required only if the rear wheels of the design vehicle would be on an upgrade steeper than 3%.

**INTERSECTION SIGHT DISTANCE**
**FOR STOP-CONTROLLED INTERSECTION**

**Figure 46-10G**

| | Intersection Sight Distance For Passenger Car | |
|---|---|---|
| Design Speed (mph) | Calculated (ft) | Design (ft) |
| 15 | 143.3 | 145 |
| 20 | 191.1 | 195 |
| 25 | 238.9 | 240 |
| 30 | 286.7 | 290 |
| 35 | 334.4 | 335 |
| 40 | 382.2 | 385 |
| 45 | 430.0 | 430 |
| 50 | 477.8 | 480 |
| 55 | 525.5 | 530 |
| 60 | 573.3 | 575 |
| 65 | 621.1 | 625 |
| 70 | 668.9 | 670 |

*Note: Intersection sight distance shown is for a stopped passenger car to turn right onto or cross a two-lane highway with no median and grades of 3% or flatter. For other conditions, the time gap should be adjusted and the required sight distance recalculated.*

**INTERSECTION SIGHT DISTANCE FOR PASSENGER CAR TO TURN RIGHT FROM A STOP OR TO MAKE A CROSSING MANEUVER**

**Figure 46-10H**

# APPENDIX F

SYNCHRO RESULTS ALL-WAY STOP-CONTROLLED

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 11.9 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 3 | 244 | 25 | 11 | 244 | 8 | 23 | 7 | 16 | 5 | 16 | 3 |
| Future Vol, veh/h | 3 | 244 | 25 | 11 | 244 | 8 | 23 | 7 | 16 | 5 | 16 | 3 |
| Peak Hour Factor | 0.75 | 0.75 | 0.75 | 0.84 | 0.84 | 0.84 | 0.68 | 0.68 | 0.68 | 0.50 | 0.50 | 0.50 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 325 | 33 | 13 | 290 | 10 | 34 | 10 | 24 | 10 | 32 | 6 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 2 | 2 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 2 | 2 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 2 | 2 |
| HCM Control Delay | 12.9 | 11.6 | 9.3 | 9.2 |
| HCM LOS | B | B | A | A |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 |
|---|---|---|---|---|---|---|
| Vol Left, % | 50% | 100% | 0% | 100% | 0% | 21% |
| Vol Thru, % | 15% | 0% | 91% | 0% | 97% | 67% |
| Vol Right, % | 35% | 0% | 9% | 0% | 3% | 12% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 46 | 3 | 269 | 11 | 252 | 24 |
| LT Vol | 23 | 3 | 0 | 11 | 0 | 5 |
| Through Vol | 7 | 0 | 244 | 0 | 244 | 16 |
| RT Vol | 16 | 0 | 25 | 0 | 8 | 3 |
| Lane Flow Rate | 68 | 4 | 359 | 13 | 300 | 48 |
| Geometry Grp | 2 | 7 | 7 | 7 | 7 | 2 |
| Degree of Util (X) | 0.104 | 0.006 | 0.504 | 0.021 | 0.428 | 0.075 |
| Departure Headway (Hd) | 5.528 | 5.631 | 5.062 | 5.667 | 5.141 | 5.642 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 643 | 633 | 710 | 629 | 696 | 629 |
| Service Time | 3.609 | 3.387 | 2.818 | 3.425 | 2.899 | 3.728 |
| HCM Lane V/C Ratio | 0.106 | 0.006 | 0.506 | 0.021 | 0.431 | 0.076 |
| HCM Control Delay | 9.3 | 8.4 | 12.9 | 8.5 | 11.7 | 9.2 |
| HCM Lane LOS | A | A | B | A | B | A |
| HCM 95th-tile Q | 0.3 | 0 | 2.9 | 0.1 | 2.2 | 0.2 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 16.1 |
| Intersection LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 14 | 185 | 66 | 97 | 214 | 18 | 32 | 58 | 66 | 16 | 117 | 21 |
| Future Vol, veh/h | 14 | 185 | 66 | 97 | 214 | 18 | 32 | 58 | 66 | 16 | 117 | 21 |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.86 | 0.86 | 0.86 | 0.59 | 0.59 | 0.59 | 0.70 | 0.70 | 0.70 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 18 | 240 | 86 | 113 | 249 | 21 | 54 | 98 | 112 | 23 | 167 | 30 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 2 | 2 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 2 | 2 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 2 | 2 |
| HCM Control Delay | 19.4 | 15.5 | 13.9 | 14.6 |
| HCM LOS | C | C | B | B |

| Lane | NBLn1 | NBLn2 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 100% | 0% | 100% | 0% | 100% | 0% |
| Vol Thru, % | 0% | 47% | 0% | 74% | 0% | 92% | 0% | 85% |
| Vol Right, % | 0% | 53% | 0% | 26% | 0% | 8% | 0% | 15% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 32 | 124 | 14 | 251 | 97 | 232 | 16 | 138 |
| LT Vol | 32 | 0 | 14 | 0 | 97 | 0 | 16 | 0 |
| Through Vol | 0 | 58 | 0 | 185 | 0 | 214 | 0 | 117 |
| RT Vol | 0 | 66 | 0 | 66 | 0 | 18 | 0 | 21 |
| Lane Flow Rate | 54 | 210 | 18 | 326 | 113 | 270 | 23 | 197 |
| Geometry Grp | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| Degree of Util (X) | 0.119 | 0.408 | 0.038 | 0.615 | 0.233 | 0.515 | 0.051 | 0.402 |
| Departure Headway (Hd) | 7.888 | 6.993 | 7.491 | 6.792 | 7.443 | 6.876 | 7.966 | 7.343 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 454 | 515 | 478 | 531 | 482 | 523 | 449 | 489 |
| Service Time | 5.643 | 4.747 | 5.241 | 4.541 | 5.194 | 4.627 | 5.722 | 5.099 |
| HCM Lane V/C Ratio | 0.119 | 0.408 | 0.038 | 0.614 | 0.234 | 0.516 | 0.051 | 0.403 |
| HCM Control Delay | 11.7 | 14.5 | 10.5 | 19.9 | 12.5 | 16.8 | 11.2 | 15 |
| HCM Lane LOS | B | B | B | C | B | C | B | B |
| HCM 95th-tile Q | 0.4 | 2 | 0.1 | 4.1 | 0.9 | 2.9 | 0.2 | 1.9 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 11.8 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 2 | 7 | 33 | 13 | 4 | 7 | 20 | 159 | 14 | 5 | 264 | 13 |
| Future Vol, veh/h | 2 | 7 | 33 | 13 | 4 | 7 | 20 | 159 | 14 | 5 | 264 | 13 |
| Peak Hour Factor | 0.58 | 0.58 | 0.58 | 0.75 | 0.75 | 0.75 | 0.57 | 0.57 | 0.57 | 0.66 | 0.66 | 0.66 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 3 | 12 | 57 | 17 | 5 | 9 | 35 | 279 | 25 | 8 | 400 | 20 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 8.9 | 9.1 | 11.3 | 12.9 |
| HCM LOS | A | A | B | B |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 10% | 5% | 54% | 2% |
| Vol Thru, % | 82% | 17% | 17% | 94% |
| Vol Right, % | 7% | 79% | 29% | 5% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 193 | 42 | 24 | 282 |
| LT Vol | 20 | 2 | 13 | 5 |
| Through Vol | 159 | 7 | 4 | 264 |
| RT Vol | 14 | 33 | 7 | 13 |
| Lane Flow Rate | 339 | 72 | 32 | 427 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.437 | 0.105 | 0.051 | 0.541 |
| Departure Headway (Hd) | 4.651 | 5.212 | 5.686 | 4.559 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 772 | 681 | 624 | 786 |
| Service Time | 2.703 | 3.294 | 3.776 | 2.608 |
| HCM Lane V/C Ratio | 0.439 | 0.106 | 0.051 | 0.543 |
| HCM Control Delay | 11.3 | 8.9 | 9.1 | 12.9 |
| HCM Lane LOS | B | A | A | B |
| HCM 95th-tile Q | 2.2 | 0.4 | 0.2 | 3.3 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 11.7 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 5 | 239 | 6 | 17 | 325 | 14 | 6 | 8 | 13 | 9 | 14 | 16 |
| Future Vol, veh/h | 5 | 239 | 6 | 17 | 325 | 14 | 6 | 8 | 13 | 9 | 14 | 16 |
| Peak Hour Factor | 0.81 | 0.81 | 0.81 | 0.94 | 0.94 | 0.94 | 0.61 | 0.61 | 0.61 | 0.75 | 0.75 | 0.75 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 6 | 295 | 7 | 18 | 346 | 15 | 10 | 13 | 21 | 12 | 19 | 21 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 2 | 2 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 2 | 2 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 2 | 2 |
| HCM Control Delay | 11.5 | 12.6 | 8.9 | 9 |
| HCM LOS | B | B | A | A |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 |
|---|---|---|---|---|---|---|
| Vol Left, % | 22% | 100% | 0% | 100% | 0% | 23% |
| Vol Thru, % | 30% | 0% | 98% | 0% | 96% | 36% |
| Vol Right, % | 48% | 0% | 2% | 0% | 4% | 41% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 27 | 5 | 245 | 17 | 339 | 39 |
| LT Vol | 6 | 5 | 0 | 17 | 0 | 9 |
| Through Vol | 8 | 0 | 239 | 0 | 325 | 14 |
| RT Vol | 13 | 0 | 6 | 0 | 14 | 16 |
| Lane Flow Rate | 44 | 6 | 302 | 18 | 361 | 52 |
| Geometry Grp | 2 | 7 | 7 | 7 | 7 | 2 |
| Degree of Util (X) | 0.066 | 0.01 | 0.428 | 0.028 | 0.503 | 0.079 |
| Departure Headway (Hd) | 5.407 | 5.616 | 5.096 | 5.554 | 5.022 | 5.438 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 657 | 636 | 705 | 643 | 714 | 654 |
| Service Time | 3.484 | 3.364 | 2.843 | 3.301 | 2.768 | 3.51 |
| HCM Lane V/C Ratio | 0.067 | 0.009 | 0.428 | 0.028 | 0.506 | 0.08 |
| HCM Control Delay | 8.9 | 8.4 | 11.6 | 8.5 | 12.8 | 9 |
| HCM Lane LOS | A | A | B | A | B | A |
| HCM 95th-tile Q | 0.2 | 0 | 2.2 | 0.1 | 2.9 | 0.3 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 12.3 |
| Intersection LOS | B |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 7 | 324 | 17 | 38 | 277 | 20 | 29 | 9 | 33 | 8 | 14 | 3 |
| Future Vol, veh/h | 7 | 324 | 17 | 38 | 277 | 20 | 29 | 9 | 33 | 8 | 14 | 3 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.89 | 0.89 | 0.89 | 0.80 | 0.80 | 0.80 | 0.69 | 0.69 | 0.69 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 7 | 338 | 18 | 43 | 311 | 22 | 36 | 11 | 41 | 12 | 20 | 4 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 2 | 2 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 2 | 2 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 2 | 2 |
| HCM Control Delay | 13.3 | 12.2 | 9.5 | 9.3 |
| HCM LOS | B | B | A | A |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 |
|---|---|---|---|---|---|---|
| Vol Left, % | 41% | 100% | 0% | 100% | 0% | 32% |
| Vol Thru, % | 13% | 0% | 95% | 0% | 93% | 56% |
| Vol Right, % | 46% | 0% | 5% | 0% | 7% | 12% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 71 | 7 | 341 | 38 | 297 | 25 |
| LT Vol | 29 | 7 | 0 | 38 | 0 | 8 |
| Through Vol | 9 | 0 | 324 | 0 | 277 | 14 |
| RT Vol | 33 | 0 | 17 | 0 | 20 | 3 |
| Lane Flow Rate | 89 | 7 | 355 | 43 | 334 | 36 |
| Geometry Grp | 2 | 7 | 7 | 7 | 7 | 2 |
| Degree of Util (X) | 0.137 | 0.012 | 0.512 | 0.068 | 0.478 | 0.06 |
| Departure Headway (Hd) | 5.541 | 5.73 | 5.191 | 5.707 | 5.155 | 5.949 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 640 | 621 | 689 | 624 | 694 | 606 |
| Service Time | 3.637 | 3.502 | 2.963 | 3.478 | 2.927 | 3.949 |
| HCM Lane V/C Ratio | 0.139 | 0.011 | 0.515 | 0.069 | 0.481 | 0.059 |
| HCM Control Delay | 9.5 | 8.6 | 13.4 | 8.9 | 12.6 | 9.3 |
| HCM Lane LOS | A | A | B | A | B | A |
| HCM 95th-tile Q | 0.5 | 0 | 2.9 | 0.2 | 2.6 | 0.2 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 18.2 |
| Intersection LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 26 | 323 | 38 | 66 | 259 | 32 | 58 | 70 | 96 | 22 | 71 | 19 |
| Future Vol, veh/h | 26 | 323 | 38 | 66 | 259 | 32 | 58 | 70 | 96 | 22 | 71 | 19 |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.89 | 0.89 | 0.89 | 0.81 | 0.81 | 0.84 | 0.69 | 0.69 | 0.69 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 27 | 336 | 40 | 74 | 291 | 36 | 72 | 86 | 114 | 32 | 103 | 28 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 2 | 2 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 2 | 2 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 2 | 2 |
| HCM Control Delay | 23.3 | 18.2 | 13.7 | 12.9 |
| HCM LOS | C | C | B | B |

| Lane | NBLn1 | NBLn2 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 100% | 0% | 100% | 0% | 100% | 0% |
| Vol Thru, % | 0% | 42% | 0% | 89% | 0% | 89% | 0% | 79% |
| Vol Right, % | 0% | 58% | 0% | 11% | 0% | 11% | 0% | 21% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 58 | 166 | 26 | 361 | 66 | 291 | 22 | 90 |
| LT Vol | 58 | 0 | 26 | 0 | 66 | 0 | 22 | 0 |
| Through Vol | 0 | 70 | 0 | 323 | 0 | 259 | 0 | 71 |
| RT Vol | 0 | 96 | 0 | 38 | 0 | 32 | 0 | 19 |
| Lane Flow Rate | 72 | 201 | 27 | 376 | 74 | 327 | 32 | 130 |
| Geometry Grp | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| Degree of Util (X) | 0.159 | 0.393 | 0.055 | 0.706 | 0.152 | 0.615 | 0.073 | 0.274 |
| Departure Headway (Hd) | 7.972 | 7.044 | 7.343 | 6.757 | 7.365 | 6.776 | 8.242 | 7.575 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 450 | 510 | 487 | 534 | 486 | 533 | 434 | 473 |
| Service Time | 5.723 | 4.794 | 5.089 | 4.503 | 5.113 | 4.523 | 6.001 | 5.334 |
| HCM Lane V/C Ratio | 0.16 | 0.394 | 0.055 | 0.704 | 0.152 | 0.614 | 0.074 | 0.275 |
| HCM Control Delay | 12.2 | 14.3 | 10.5 | 24.2 | 11.4 | 19.8 | 11.7 | 13.2 |
| HCM Lane LOS | B | B | B | C | B | C | B | B |
| HCM 95th-tile Q | 0.6 | 1.9 | 0.2 | 5.6 | 0.5 | 4.1 | 0.2 | 1.1 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 9.3 |
| Intersection LOS | A |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 18 | 17 | 26 | 12 | 4 | 9 | 20 | 202 | 17 | 14 | 137 | 19 |
| Future Vol, veh/h | 18 | 17 | 26 | 12 | 4 | 9 | 20 | 202 | 17 | 14 | 137 | 19 |
| Peak Hour Factor | 0.73 | 0.73 | 0.73 | 0.63 | 0.63 | 0.63 | 0.82 | 0.82 | 0.82 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 25 | 23 | 36 | 19 | 6 | 14 | 24 | 246 | 21 | 15 | 149 | 21 |
| Number of Lanes | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 1 | 1 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 1 | 1 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 1 | 1 |
| HCM Control Delay | 8.5 | 8.3 | 9.9 | 8.9 |
| HCM LOS | A | A | A | A |

| Lane | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|---|---|---|---|---|
| Vol Left, % | 8% | 30% | 48% | 8% |
| Vol Thru, % | 85% | 28% | 16% | 81% |
| Vol Right, % | 7% | 43% | 36% | 11% |
| Sign Control | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 239 | 61 | 25 | 170 |
| LT Vol | 20 | 18 | 12 | 14 |
| Through Vol | 202 | 17 | 4 | 137 |
| RT Vol | 17 | 26 | 9 | 19 |
| Lane Flow Rate | 291 | 84 | 40 | 185 |
| Geometry Grp | 1 | 1 | 1 | 1 |
| Degree of Util (X) | 0.357 | 0.113 | 0.055 | 0.231 |
| Departure Headway (Hd) | 4.415 | 4.854 | 4.994 | 4.502 |
| Convergence, Y/N | Yes | Yes | Yes | Yes |
| Cap | 813 | 737 | 715 | 796 |
| Service Time | 2.444 | 2.895 | 3.041 | 2.534 |
| HCM Lane V/C Ratio | 0.358 | 0.114 | 0.056 | 0.232 |
| HCM Control Delay | 9.9 | 8.5 | 8.3 | 8.9 |
| HCM Lane LOS | A | A | A | A |
| HCM 95th-tile Q | 1.6 | 0.4 | 0.2 | 0.9 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 16.2 |
| Intersection LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 17 | 401 | 14 | 15 | 336 | 24 | 13 | 10 | 32 | 10 | 14 | 24 |
| Future Vol, veh/h | 17 | 401 | 14 | 15 | 336 | 24 | 13 | 10 | 32 | 10 | 14 | 24 |
| Peak Hour Factor | 0.87 | 0.87 | 0.87 | 0.93 | 0.93 | 0.93 | 0.92 | 0.92 | 0.92 | 0.75 | 0.75 | 0.75 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 20 | 461 | 16 | 16 | 361 | 26 | 14 | 11 | 35 | 13 | 19 | 32 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 2 | 2 | 1 | 1 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 1 | 1 | 2 | 2 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 1 | 1 | 2 | 2 |
| HCM Control Delay | 18.8 | 15 | 9.7 | 9.8 |
| HCM LOS | C | B | A | A |

| Lane | NBLn1 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 |
|---|---|---|---|---|---|---|
| Vol Left, % | 24% | 100% | 0% | 100% | 0% | 21% |
| Vol Thru, % | 18% | 0% | 97% | 0% | 93% | 29% |
| Vol Right, % | 58% | 0% | 3% | 0% | 7% | 50% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 55 | 17 | 415 | 15 | 360 | 48 |
| LT Vol | 13 | 17 | 0 | 15 | 0 | 10 |
| Through Vol | 10 | 0 | 401 | 0 | 336 | 14 |
| RT Vol | 32 | 0 | 14 | 0 | 24 | 24 |
| Lane Flow Rate | 60 | 20 | 477 | 16 | 387 | 64 |
| Geometry Grp | 2 | 7 | 7 | 7 | 7 | 2 |
| Degree of Util (X) | 0.1 | 0.031 | 0.693 | 0.027 | 0.58 | 0.108 |
| Departure Headway (Hd) | 6.02 | 5.863 | 5.335 | 5.945 | 5.393 | 6.051 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 597 | 614 | 682 | 606 | 674 | 594 |
| Service Time | 4.043 | 3.563 | 3.035 | 3.645 | 3.093 | 4.073 |
| HCM Lane V/C Ratio | 0.101 | 0.033 | 0.699 | 0.026 | 0.574 | 0.108 |
| HCM Control Delay | 9.7 | 8.8 | 19.2 | 8.8 | 15.3 | 9.8 |
| HCM Lane LOS | A | A | C | A | C | A |
| HCM 95th-tile Q | 0.3 | 0.1 | 5.6 | 0.1 | 3.7 | 0.4 |

# APPENDIX G

SYNCHRO RESULTS MIXED STOP-CONTROLLED

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 3 | 244 | 25 | 11 | 244 | 8 | 23 | 7 | 16 | 5 | 16 | 3 |
| Future Vol, veh/h | 3 | 244 | 25 | 11 | 244 | 8 | 23 | 7 | 16 | 5 | 16 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 50 | - | - | 150 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 75 | 75 | 75 | 84 | 84 | 84 | 68 | 68 | 68 | 50 | 50 | 50 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 4 | 325 | 33 | 13 | 290 | 10 | 34 | 10 | 24 | 10 | 32 | 6 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 300 | 0 | 0 | 358 | 0 | 0 | 690 | 676 | 342 | 688 | 687 | 295 |
| Stage 1 | - | - | - | - | - | - | 350 | 350 | - | 321 | 321 | - |
| Stage 2 | - | - | - | - | - | - | 340 | 326 | - | 367 | 366 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1261 | - | - | 1201 | - | - | 359 | 375 | 701 | 360 | 370 | 744 |
| Stage 1 | - | - | - | - | - | - | 666 | 633 | - | 691 | 652 | - |
| Stage 2 | - | - | - | - | - | - | 675 | 648 | - | 653 | 623 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1261 | - | - | 1201 | - | - | 329 | 370 | 701 | 337 | 365 | 744 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 329 | 370 | - | 337 | 365 | - |
| Stage 1 | - | - | - | - | - | - | 664 | 631 | - | 689 | 645 | - |
| Stage 2 | - | - | - | - | - | - | 629 | 641 | - | 619 | 621 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 0.3 | 15.4 | 15.7 |
| HCM LOS | | | C | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 412 | 1261 | - | - | 1201 | - | - | 383 |
| HCM Lane V/C Ratio | 0.164 | 0.003 | - | - | 0.011 | - | - | 0.125 |
| HCM Control Delay (s) | 15.4 | 7.9 | - | - | 8 | - | - | 15.7 |
| HCM Lane LOS | C | A | - | - | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.6 | 0 | - | - | 0 | - | - | 0.4 |

| Intersection | |
|---|---|
| Intersection Delay, s/veh | 16.1 |
| Intersection LOS | C |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 14 | 185 | 66 | 97 | 214 | 18 | 32 | 58 | 66 | 16 | 117 | 21 |
| Future Vol, veh/h | 14 | 185 | 66 | 97 | 214 | 18 | 32 | 58 | 66 | 16 | 117 | 21 |
| Peak Hour Factor | 0.77 | 0.77 | 0.77 | 0.86 | 0.86 | 0.86 | 0.59 | 0.59 | 0.59 | 0.70 | 0.70 | 0.70 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 18 | 240 | 86 | 113 | 249 | 21 | 54 | 98 | 112 | 23 | 167 | 30 |
| Number of Lanes | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| Opposing Approach | WB | EB | SB | NB |
| Opposing Lanes | 2 | 2 | 2 | 2 |
| Conflicting Approach Left | SB | NB | EB | WB |
| Conflicting Lanes Left | 2 | 2 | 2 | 2 |
| Conflicting Approach Right | NB | SB | WB | EB |
| Conflicting Lanes Right | 2 | 2 | 2 | 2 |
| HCM Control Delay | 19.4 | 15.5 | 13.9 | 14.6 |
| HCM LOS | C | C | B | B |

| Lane | NBLn1 | NBLn2 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
|---|---|---|---|---|---|---|---|---|
| Vol Left, % | 100% | 0% | 100% | 0% | 100% | 0% | 100% | 0% |
| Vol Thru, % | 0% | 47% | 0% | 74% | 0% | 92% | 0% | 85% |
| Vol Right, % | 0% | 53% | 0% | 26% | 0% | 8% | 0% | 15% |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Stop | Stop |
| Traffic Vol by Lane | 32 | 124 | 14 | 251 | 97 | 232 | 16 | 138 |
| LT Vol | 32 | 0 | 14 | 0 | 97 | 0 | 16 | 0 |
| Through Vol | 0 | 58 | 0 | 185 | 0 | 214 | 0 | 117 |
| RT Vol | 0 | 66 | 0 | 66 | 0 | 18 | 0 | 21 |
| Lane Flow Rate | 54 | 210 | 18 | 326 | 113 | 270 | 23 | 197 |
| Geometry Grp | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| Degree of Util (X) | 0.119 | 0.408 | 0.038 | 0.615 | 0.233 | 0.515 | 0.051 | 0.402 |
| Departure Headway (Hd) | 7.888 | 6.993 | 7.491 | 6.792 | 7.443 | 6.876 | 7.966 | 7.343 |
| Convergence, Y/N | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Cap | 454 | 515 | 478 | 531 | 482 | 523 | 449 | 489 |
| Service Time | 5.643 | 4.747 | 5.241 | 4.541 | 5.194 | 4.627 | 5.722 | 5.099 |
| HCM Lane V/C Ratio | 0.119 | 0.408 | 0.038 | 0.614 | 0.234 | 0.516 | 0.051 | 0.403 |
| HCM Control Delay | 11.7 | 14.5 | 10.5 | 19.9 | 12.5 | 16.8 | 11.2 | 15 |
| HCM Lane LOS | B | B | B | C | B | C | B | B |
| HCM 95th-tile Q | 0.4 | 2 | 0.1 | 4.1 | 0.9 | 2.9 | 0.2 | 1.9 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 5 | 239 | 6 | 17 | 325 | 14 | 6 | 8 | 13 | 9 | 14 | 16 |
| Future Vol, veh/h | 5 | 239 | 6 | 17 | 325 | 14 | 6 | 8 | 13 | 9 | 14 | 16 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | 75 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 81 | 81 | 81 | 94 | 94 | 94 | 61 | 61 | 61 | 75 | 75 | 75 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 6 | 295 | 7 | 18 | 346 | 15 | 10 | 13 | 21 | 12 | 19 | 21 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 361 | 0 | 0 | 302 | 0 | 0 | 721 | 708 | 299 | 718 | 704 | 354 |
| Stage 1 | - | - | - | - | - | - | 311 | 311 | - | 390 | 390 | - |
| Stage 2 | - | - | - | - | - | - | 410 | 397 | - | 328 | 314 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1198 | - | - | 1259 | - | - | 343 | 360 | 741 | 344 | 361 | 690 |
| Stage 1 | - | - | - | - | - | - | 699 | 658 | - | 634 | 608 | - |
| Stage 2 | - | - | - | - | - | - | 619 | 603 | - | 685 | 656 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1198 | - | - | 1259 | - | - | 315 | 353 | 741 | 320 | 354 | 690 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 315 | 353 | - | 320 | 354 | - |
| Stage 1 | - | - | - | - | - | - | 696 | 655 | - | 631 | 599 | - |
| Stage 2 | - | - | - | - | - | - | 573 | 595 | - | 649 | 653 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0.4 | 13.7 | 14.5 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 456 | 1198 | - | - | 1259 | - | - | 429 |
| HCM Lane V/C Ratio | 0.097 | 0.005 | - | - | 0.014 | - | - | 0.121 |
| HCM Control Delay (s) | 13.7 | 8 | - | - | 7.9 | - | - | 14.5 |
| HCM Lane LOS | B | A | - | - | A | - | - | B |
| HCM 95th %tile Q(veh) | 0.3 | 0 | - | - | 0 | - | - | 0.4 |

| 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 | 7 | 33 | 13 | 4 | 7 | 20 | 159 | 14 | 5 | 264 | 13 |
| Future Vol, veh/h | 2 | 7 | 33 | 13 | 4 | 7 | 20 | 159 | 14 | 5 | 264 | 13 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 58 | 58 | 58 | 75 | 75 | 75 | 57 | 57 | 57 | 66 | 66 | 66 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 3 | 12 | 57 | 17 | 5 | 9 | 35 | 279 | 25 | 8 | 400 | 20 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 795 | 800 | 410 | 823 | 798 | 292 | 420 | 0 | 0 | 304 | 0 | 0 |
| Stage 1 | 426 | 426 | - | 362 | 362 | - | - | - | - | - | - | - |
| Stage 2 | 369 | 374 | - | 461 | 436 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 305 | 318 | 642 | 292 | 319 | 747 | 1139 | - | - | 1257 | - | - |
| Stage 1 | 606 | 586 | - | 657 | 625 | - | - | - | - | - | - | - |
| Stage 2 | 651 | 618 | - | 581 | 580 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 287 | 304 | 642 | 249 | 305 | 747 | 1139 | - | - | 1257 | - | - |
| Mov Cap-2 Maneuver | 287 | 304 | - | 249 | 305 | - | - | - | - | - | - | - |
| Stage 1 | 584 | 581 | - | 633 | 602 | - | - | - | - | - | - | - |
| Stage 2 | 614 | 595 | - | 514 | 575 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 13.1 | 17.5 | 0.9 | 0.1 |
| HCM LOS | B | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1139 | - | - | 516 | 321 | 1257 | - | - |
| HCM Lane V/C Ratio | 0.031 | - | - | 0.14 | 0.1 | 0.006 | - | - |
| HCM Control Delay (s) | 8.3 | 0 | - | 13.1 | 17.5 | 7.9 | 0 | - |
| HCM Lane LOS | A | A | - | B | C | A | A | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.5 | 0.3 | 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 | 7 | 324 | 17 | 38 | 277 | 20 | 29 | 9 | 33 | 8 | 14 | 3 |
| Future Vol, veh/h | 7 | 324 | 17 | 38 | 277 | 20 | 29 | 9 | 33 | 8 | 14 | 3 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 50 | - | - | 150 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 96 | 96 | 96 | 89 | 89 | 89 | 80 | 80 | 80 | 69 | 69 | 69 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 7 | 338 | 18 | 43 | 311 | 22 | 36 | 11 | 41 | 12 | 20 | 4 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 333 | 0 | 0 | 356 | 0 | 0 | 781 | 780 | 347 | 795 | 778 | 322 |
| Stage 1 | - | - | - | - | - | - | 361 | 361 | - | 408 | 408 | - |
| Stage 2 | - | - | - | - | - | - | 420 | 419 | - | 387 | 370 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1226 | - | - | 1203 | - | - | 312 | 327 | 696 | 305 | 328 | 719 |
| Stage 1 | - | - | - | - | - | - | 657 | 626 | - | 620 | 597 | - |
| Stage 2 | - | - | - | - | - | - | 611 | 590 | - | 637 | 620 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1226 | - | - | 1203 | - | - | 285 | 313 | 696 | 270 | 314 | 719 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 285 | 313 | - | 270 | 314 | - |
| Stage 1 | - | - | - | - | - | - | 653 | 622 | - | 616 | 576 | - |
| Stage 2 | - | - | - | - | - | - | 565 | 569 | - | 585 | 616 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.2 | 0.9 | 16.6 | 17.7 |
| HCM LOS | | | C | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 399 | 1226 | - | - | 1203 | - | - | 319 |
| HCM Lane V/C Ratio | 0.222 | 0.006 | - | - | 0.035 | - | - | 0.114 |
| HCM Control Delay (s) | 16.6 | 8 | - | - | 8.1 | - | - | 17.7 |
| HCM Lane LOS | C | A | - | - | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.8 | 0 | - | - | 0.1 | - | - | 0.4 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 17 | 401 | 14 | 15 | 336 | 24 | 13 | 10 | 32 | 10 | 14 | 24 |
| Future Vol, veh/h | 17 | 401 | 14 | 15 | 336 | 24 | 13 | 10 | 32 | 10 | 14 | 24 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 100 | - | - | 75 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 87 | 87 | 87 | 93 | 93 | 93 | 92 | 92 | 92 | 75 | 75 | 75 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 20 | 461 | 16 | 16 | 361 | 26 | 14 | 11 | 35 | 13 | 19 | 32 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 387 | 0 | 0 | 477 | 0 | 0 | 941 | 928 | 469 | 938 | 923 | 374 |
| Stage 1 | - | - | - | - | - | - | 509 | 509 | - | 406 | 406 | - |
| Stage 2 | - | - | - | - | - | - | 432 | 419 | - | 532 | 517 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.12 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 |
| Pot Cap-1 Maneuver | 1171 | - | - | 1085 | - | - | 243 | 268 | 594 | 244 | 270 | 672 |
| Stage 1 | - | - | - | - | - | - | 547 | 538 | - | 622 | 598 | - |
| Stage 2 | - | - | - | - | - | - | 602 | 590 | - | 531 | 534 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1171 | - | - | 1085 | - | - | 214 | 259 | 594 | 217 | 261 | 672 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 214 | 259 | - | 217 | 261 | - |
| Stage 1 | - | - | - | - | - | - | 538 | 529 | - | 611 | 589 | - |
| Stage 2 | - | - | - | - | - | - | 547 | 581 | - | 481 | 525 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.3 | 0.3 | 17 | 17.4 |
| HCM LOS | | | C | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 359 | 1171 | - | - | 1085 | - | - | 354 |
| HCM Lane V/C Ratio | 0.167 | 0.017 | - | - | 0.015 | - | - | 0.181 |
| HCM Control Delay (s) | 17 | 8.1 | - | - | 8.4 | - | - | 17.4 |
| HCM Lane LOS | C | A | - | - | A | - | - | C |
| HCM 95th %tile Q(veh) | 0.6 | 0.1 | - | - | 0 | - | - | 0.7 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 18 | 17 | 26 | 12 | 4 | 9 | 20 | 202 | 17 | 14 | 137 | 19 |
| Future Vol, veh/h | 18 | 17 | 26 | 12 | 4 | 9 | 20 | 202 | 17 | 14 | 137 | 19 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 73 | 73 | 73 | 63 | 63 | 63 | 82 | 82 | 82 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 25 | 23 | 36 | 19 | 6 | 14 | 24 | 246 | 21 | 15 | 149 | 21 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 505 | 505 | 160 | 524 | 505 | 257 | 170 | 0 | 0 | 267 | 0 | 0 |
| Stage 1 | 190 | 190 | - | 305 | 305 | - | - | - | - | - | - | - |
| Stage 2 | 315 | 315 | - | 219 | 200 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.12 | 6.52 | 6.22 | 7.12 | 6.52 | 6.22 | 4.12 | - | - | 4.12 | - | - |
| Critical Hdwy Stg 1 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.12 | 5.52 | - | 6.12 | 5.52 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.518 | 4.018 | 3.318 | 3.518 | 4.018 | 3.318 | 2.218 | - | - | 2.218 | - | - |
| Pot Cap-1 Maneuver | 478 | 470 | 885 | 464 | 470 | 782 | 1407 | - | - | 1297 | - | - |
| Stage 1 | 812 | 743 | - | 705 | 662 | - | - | - | - | - | - | - |
| Stage 2 | 696 | 656 | - | 783 | 736 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | 453 | 454 | 885 | 417 | 454 | 782 | 1407 | - | - | 1297 | - | - |
| Mov Cap-2 Maneuver | 453 | 454 | - | 417 | 454 | - | - | - | - | - | - | - |
| Stage 1 | 796 | 733 | - | 691 | 649 | - | - | - | - | - | - | - |
| Stage 2 | 663 | 643 | - | 718 | 726 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 12.4 | 12.7 | 0.6 | 0.6 |
| HCM LOS | B | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 1407 | - | - | 572 | 509 | 1297 | - | - |
| HCM Lane V/C Ratio | 0.017 | - | - | 0.146 | 0.078 | 0.012 | - | - |
| HCM Control Delay (s) | 7.6 | 0 | - | 12.4 | 12.7 | 7.8 | 0 | - |
| HCM Lane LOS | A | A | - | B | B | A | A | - |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0.5 | 0.3 | 0 | - | - |