



## **8<sup>th</sup> Street Traffic Engineering Study**

8<sup>th</sup> Street Corridor Improvements from Front Avenue to  
Veterans Parkway

Columbus Consolidated Government, Muscogee County,  
GA

March 29, 2022

Prepared for:

Columbus Consolidated Government

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# Sign-off Sheet

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## Table of Contents

|            |  |            |
|------------|--|------------|
| <b>1.0</b> | <b>EXECUTIVE SUMMARY .....</b>                                     | <b>1.1</b> |
| <b>2.0</b> | <b>INTRODUCTION.....</b>   | <b>2.1</b> |
| <b>3.0</b> | <b>INVENTORY OF TRAFFIC CONDITIONS.....</b>                        | <b>3.1</b> |
| 3.1        | CORRIDOR DESCRIPTION.....  | 3.1        |
| 3.2        | ROADWAY INVENTORY & EXISTING CONDITIONS .....                      | 3.1        |
| 3.3        | INTERSECTION INVENTORY & EXISTING CONDITIONS .....                 | 3.2        |
| <b>4.0</b> | <b>TRAFFIC ANALYSIS.....</b>                                       | <b>4.1</b> |
| 4.1        | TRAFFIC DATA COLLECTION .....                                      | 4.1        |
| 4.2        | TRUCK PERCENTAGES.....   | 4.1        |
| 4.3        | GROWTH RATE DEVELOPMENT .....                                      | 4.1        |
| 4.4        | CAPACITY ANALYSIS METHODOLOGY .....                                | 4.2        |
| <b>5.0</b> | <b>2021 &amp; 2044 NO-BUILD CONDITIONS CAPACITY ANALYSIS .....</b> | <b>5.1</b> |
| <b>6.0</b> | <b>2044 ROUNDABOUT ANALYSIS.....</b>                               | <b>6.1</b> |
| <b>7.0</b> | <b>CONCLUSIONS.....</b>  | <b>7.1</b> |

### LIST OF TABLES

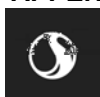
|   |     |
|---|-----|
| Table 1. Existing Conditions.....                                     | 3.4 |
| Table 2. Truck Percentages.....                                       | 4.1 |
| Table 3. HCM Intersection Level of Service Criteria.....              | 4.2 |
| Table 4. No-Build Conditions Capacity Analysis Summary .....          | 5.2 |
| Table 5: 2044 Second Avenue Roundabout Capacity Analysis Summary..... | 6.1 |

### LIST OF FIGURES

|                                 |     |
|---------------------------------|-----|
| Figure 1 Site Location Map..... | 3.3 |
|---------------------------------|-----|

### LIST OF APPENDICES

|                   |   |            |
|-------------------|---|------------|
| <b>APPENDIX A</b> | <b>TRAFFIC VOLUME COUNTS.....</b>                 | <b>A.1</b> |
| <b>APPENDIX B</b> | <b>SPEED COUNTS .....</b>                         | <b>B.1</b> |
| <b>APPENDIX C</b> | <b>TURNING MOVEMENT COUNTS .....</b>              | <b>C.1</b> |
| <b>APPENDIX D</b> | <b>TRUCK PERCENTAGES.....</b>                     | <b>E.1</b> |
| <b>APPENDIX E</b> | <b>TRAFFIC VOLUME PROJECTIONS.....</b>            | <b>E.1</b> |
| <b>APPENDIX F</b> | <b>SYNCHRO REPORTS .....</b>                      | <b>F.1</b> |
| <b>APPENDIX G</b> | <b>GDOT ROUNDABOUT ANALYSIS TOOL RESULTS.....</b> | <b>G.1</b> |
| <b>APPENDIX H</b> | <b>GROWTH RATE CALCULATIONS.....</b>              | <b>H.1</b> |



## 1.0 EXECUTIVE SUMMARY

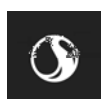
The purpose of this study is to recommend safety improvements to the City of Columbus. These recommendations need to improve safety while maintaining or improving the functionality of the corridor. This traffic engineering report describes the existing functionality of 8<sup>th</sup> Street, the future functionality under increasing traffic volumes, and performs roundabout analysis at a key location.

Average daily traffic (ADT) counts were taken at the following locations: 8<sup>th</sup> Street east of Front Avenue, 8<sup>th</sup> Street east of First Avenue, and 8<sup>th</sup> Street east of Third Avenue. Turning movement counts (TMC) were collected at 6 key intersections. This data provides base line volumes for this traffic study.

A growth rate of 1% was determined by using nearby GDOT traffic count stations and US Census Bureau data for Muscogee County/City of Columbus. This growth rate was applied to the collected traffic data to project traffic volumes in the year 2044. These volumes were input into Synchro 10 to determine the level of service (LOS) of the 6 key intersections and each of their approaches. Under existing and future traffic volumes, all but two approaches are operating at an acceptable LOS.

After making a field visit to the corridor, it was determined that roundabout analyses would be performed at the 2<sup>nd</sup> Avenue intersection. Using the GDOT roundabout analysis tool, it was determined that 2<sup>nd</sup> Avenue would operate very efficiently as a mini roundabout.

This traffic engineering report indicates that 8<sup>th</sup> Street is currently operating at acceptable levels. Only the 8<sup>th</sup> Street approaches to the Veterans Parkway intersections did not operate at an acceptable level of service, but this is primarily due to the signal timings giving priority to Veterans Parkway. A mini roundabout was found to function more efficiently than the existing stop control at 2<sup>nd</sup> Avenue. This indicates that a roundabout at this location could operate as a traffic calming measure without negatively impacting traffic flows.

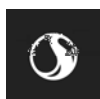


## 2.0 INTRODUCTION

The purpose of this report is to document the traffic analysis results for the 8<sup>th</sup> Street study corridor for the Columbus Consolidated Government (CCG). The observations and analysis available in this report, in conjunction with a Road Safety Audit, will serve to develop improvement recommendations along the corridor. The goal of these improvements is to create a safe walking, cycling, and driving environment that lowers accident rates for vehicles, pedestrians, and cyclists throughout the corridor. In the following sections, the analysis of traffic operations is described for existing conditions in 2021 and for future No-Build conditions in 2044, as well as for a 2044 proposed roundabout build.

The intersection at 2<sup>nd</sup> Avenue was selected for a roundabout analysis largely in order to provide traffic calming for the corridor. It could also discourage buses from traveling along the corridor, which was one of the complaints that was received for this study corridor. The operation of the 2<sup>nd</sup> Avenue intersection would not be negatively impacted by the implementation of a roundabout.

Capacity analysis is one step in identifying needs and potential improvement alternatives for the study. One objective of this study is to identify areas along the corridor that currently have or are expected to have operational deficiencies. This objective was accomplished by performing capacity analyses along the corridor for existing and projected future volumes under no build conditions. The results of these analyses are documented in this report.



## 3.0 INVENTORY OF TRAFFIC CONDITIONS

### 3.1 CORRIDOR DESCRIPTION

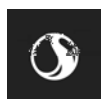
For the purpose of this report, 8<sup>th</sup> Street is referred to as an east-west route throughout the entire study area. The project area is on 8<sup>th</sup> Street from Front Avenue to Veterans Parkway. 8<sup>th</sup> Street is a two-lane local roadway with a posted speed limit of 30 miles per hour. As illustrated in **Figure 1**, the six study intersections include:

1. 8<sup>th</sup> Street at Front Avenue
2. 8<sup>th</sup> Street at Broadway
3. 8<sup>th</sup> Street at 1<sup>st</sup> Avenue
4. 8<sup>th</sup> Street at 2<sup>nd</sup> Avenue
5. 8<sup>th</sup> Street at 3<sup>rd</sup> Avenue
6. 8<sup>th</sup> Street at Veterans Parkway

### 3.2 ROADWAY INVENTORY & EXISTING CONDITIONS

To determine existing traffic conditions of the study corridor, an inventory was made of 8<sup>th</sup> Street, the six study intersections, and other key roadways influencing the study area.

8<sup>th</sup> Street is an east-west urban roadway that is classified as a local road. The study corridor runs from Front Avenue to Veterans Parkway. The approximately 0.43-mile-long study corridor is primarily a residential road that provides access to a few small businesses and a major convention center. The cross-section along the corridor is primarily two-lane undivided with 12' lanes. At the Veterans Parkway intersection, the cross-section includes left turn lanes. Residential driveways are spaced frequently along the corridor. The posted speed limit along the corridor is 30 miles per hour (mph). Average annual daily traffic (AADT) volumes along the corridor start high at the eastern end of the corridor at 1,650 vehicles per day (vpd) then drop to 1,350 vpd at just east of First Avenue. The corridor AADT volume decreases to 750 vpd at the western end of the study corridor. A site location map that illustrates intersection control type, as well as data collection sites, is provided in Figure 1 (See Page 3.3).



### 3.3 INTERSECTION INVENTORY & EXISTING CONDITIONS

The following is a brief inventory of the existing conditions at each of the six intersections, as summarized in **Table 1** (See Page 3.4).

1. 8<sup>th</sup> Street at Front Avenue

This four-legged intersection is controlled by stop signs located on the eastbound and westbound approaches of 8<sup>th</sup> Street. Sidewalks are present on all legs, but the curb ramps do not meet ADA requirements. Crosswalks exist on the east, west, and south legs.

2. 8<sup>th</sup> Street at Broadway

This four-legged intersection is controlled by stop signs located on the eastbound and westbound approaches of 8<sup>th</sup> Street. Due to the 65-foot wide median on Broadway, yield signs are also provided for the eastbound and westbound approaches at the far sides of the median. Sidewalks are present on all legs, but the curb ramps do not meet ADA requirements. No crosswalks are present at this intersection.

3. 8<sup>th</sup> Street at 1<sup>st</sup> Avenue

This four-legged intersection is controlled by stop signs located on the northbound and southbound approaches of 1<sup>st</sup> Avenue. Sidewalks and crosswalks are present on all legs, but the curb ramps do not meet ADA requirements.

4. 8<sup>th</sup> Street at 2<sup>nd</sup> Avenue

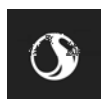
This four-legged intersection is controlled by stop signs located on the northbound and southbound approaches of 2<sup>nd</sup> Avenue. Sidewalks and crosswalks are present on all legs, but the curb ramps do not meet ADA requirements.

5. 8<sup>th</sup> Street at 3<sup>rd</sup> Avenue

This four-legged intersection is controlled by stop signs located on the northbound and southbound approaches of 3<sup>rd</sup> Avenue. Sidewalks and crosswalks are present on all legs, but the curb ramps do not meet ADA requirements.

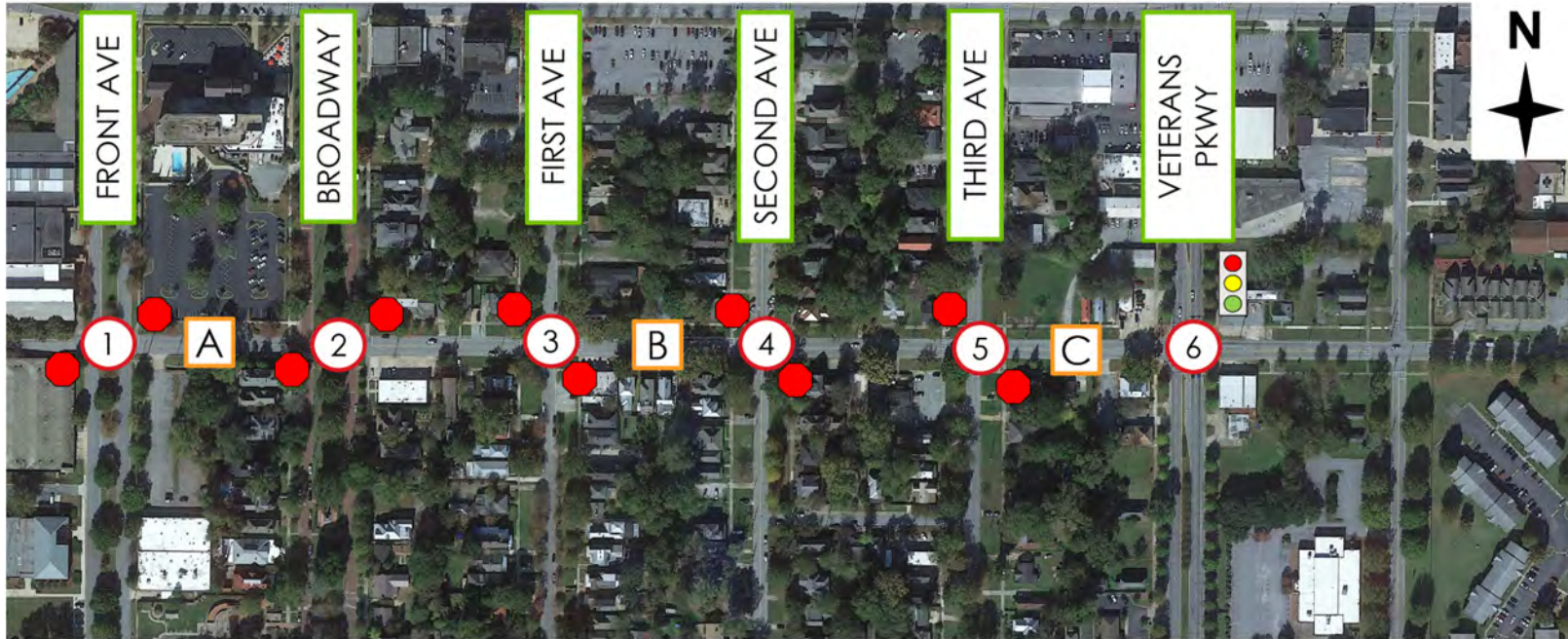
6. 8<sup>th</sup> Street at Veterans Parkway

This four-legged intersection is the only signalized intersection along the study corridor. Sidewalks and crosswalks are present on all legs, and the curb ramps appear to meet ADA requirements. A single, dedicated left-turn lane is present on each approach, but only the northbound and southbound movements have protected left-turn signal phases.



# 8TH STREET TRAFFIC ENGINEERING STUDY

## Inventory of Traffic Conditions



(X) TMC Intersections



Existing Signal



Existing Two-Way Stop



ADT Count Locations

### TMC Intersections

1. 8<sup>th</sup> Street @ Front Avenue
2. 8<sup>th</sup> Street @ Broadway
3. 8<sup>th</sup> Street @ 1<sup>st</sup> Avenue
4. 8<sup>th</sup> Street @ 2<sup>nd</sup> Avenue
5. 8<sup>th</sup> Street @ 3<sup>rd</sup> Avenue
6. 8<sup>th</sup> Street @ Veterans Parkway

### ADT Count Locations

- A. East of Front Avenue
- B. East of 1<sup>st</sup> Avenue
- C. East of 3<sup>rd</sup> Avenue

Figure 1 Site Location Map





## 8TH STREET TRAFFIC ENGINEERING STUDY

### Inventory of Traffic Conditions

**Table 1. Existing Conditions**

| Road Name              | Primary Cross-Section | Functional Classification | AADT    | Speed Limit |
|------------------------|-----------------------|---------------------------|---------|-------------|
|                        |                       |                           | (vpd)   | (mph)       |
| 8 <sup>th</sup> Street | 2-Lane Undivided      | Local                     | 1,650   | 30          |
| Front Avenue           | 4-Lane Divided        | Major Collector           | -       | 30          |
| Broadway               | 2-Lane Divided        | Major Collector           | 540*    | 30          |
| 1 <sup>st</sup> Avenue | 2-Lane Undivided      | Major Collector           | 710*    | 30          |
| 2 <sup>nd</sup> Avenue | 2-Lane Undivided      | Minor Arterial            | -       | 30          |
| 3 <sup>rd</sup> Avenue | 2-Lane Undivided      | Minor Arterial            | 760*    | 30          |
| Veterans Parkway       | 4-Lane Divided        | Principal Arterial        | 12,200* | 35          |

\*AADT values are taken from the most recent available GDOT TADA Count Station



## 4.0 TRAFFIC ANALYSIS

### 4.1 TRAFFIC DATA COLLECTION

Bidirectional speed and classification counts were taken east of 1<sup>st</sup> Avenue for the full 24-hours of May 11, 2021. Bidirectional volume only counts were also taken for the full 24-hours of May 11, 2021, east of Front Avenue and east of 3<sup>rd</sup> Avenue (See **Appendices A** and **B**, respectively). Turning movement counts were collected at the six 8<sup>th</sup> Street study intersections on May 10, 2021 (See **Appendix C**). Turning movement were collected from 7 AM to 9 AM and from 4 PM to 6 PM.

From the classification and volume counts, it was determined that the AM peak hour began at 11:30 AM and the PM peak hour began at 4:30 PM. To address the fact that the AM peak hour took place outside the turning movement count collection window, the turning movement counts which were collected in the early morning were increased using the ratio of the 11:30 AM volumes and the volumes collected during the peak hour within the morning collection period. These are the base year volumes to which growth rates were applied to generate future volumes for the capacity analysis.

### 4.2 TRUCK PERCENTAGES

**Table 2** contains the truck percentages which were calculated from the classification count. The 24-hour truck percentage is a round 2.0%. The AM peak hour truck percentage is higher at around 5.0%, with 1.0% being larger combination trucks. The PM peak hour truck percentages is equal to the 24-hour truck percentages. See **Appendix D** for truck percentage calculations.

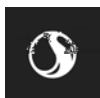
**Table 2. Truck Percentages**

| Count Location       | 24 Hour T% |       |       | Peak Hour T% |      |       |       |
|----------------------|------------|-------|-------|--------------|------|-------|-------|
|                      | S.U.       | Comb. | Total | Period       | S.U. | Comb. | Total |
| 8th St E/O First Ave | 2.0%       | 0.0%  | 2.0%  | AM           | 4.5% | 1.0%  | 5.5%  |
|                      |            |       |       | PM           | 2.0% | 0.0%  | 2.0%  |

### 4.3 GROWTH RATE DEVELOPMENT

Two sources were used to determine the growth rate that would be used to project traffic volumes into the year 2044. First, historic traffic volume data from GDOT count stations located on or near 8<sup>th</sup> Street were analyzed. Looking at the four stations that were located nearby, which only provided information up to 2019, it was found that the average trend growth rate in this area was -3.2% over the 5-year period from 2015-2019 (See **Appendix H**).

US Census Bureau data was collected for five geographic locations around the study corridor. These locations included: Muscogee County, Russell County, Phenix City, Columbus, GA-AL



Metro Area, and the Columbus-Auburn-Opelika CSA. Averaging the population growth rates of these locations gave an average annual growth rate of 1.0% from 2010-2019 (See **Appendix H**).

Given that the GDOT count stations were showing negative growth rates, this analysis opted to use the **1.0%** growth rate calculated from the US Census information. Using this 1% growth rate, turning movement counts for the projected year 2044 were used to model future traffic conditions in the no-build and build conditions (See **Appendix E**). Note that these turning movement counts were not balanced between adjacent intersections.

#### 4.4 CAPACITY ANALYSIS METHODOLOGY

Capacity analysis models of each study intersection were completed using the software program Synchro 10, which outputs operating condition statistics. Level of service (LOS) is a term used to describe differing levels of traffic congestion and is defined as a “qualitative measure describing operational conditions within a traffic stream, and their perception by motorists or passengers.” LOS varies from Level A, representing free flow, to Level F where traffic breakdown conditions are evident. Generally, LOS D is acceptable for signalized intersections in suburban areas during peak periods. For unsignalized intersections, LOS D is desirable, but it is not uncommon for some minor street movements or approaches to operate at LOS F during peak hour conditions, which is not necessarily indicative of needed improvements.

Traffic conditions at unsignalized intersections, with stop control on the minor street only, were evaluated for the minor street approaches and for the left turns from the major street. This is because the major street traffic is assumed to have no delay since there is no control (no STOP sign). Inadequate LOS for minor street approaches to unsignalized intersections are not uncommon, as the continuous flow traffic will always get the priority.

The Highway Capacity Manual Level of Service criteria for intersections are shown in **Table 3**.

**Table 3. HCM Intersection Level of Service Criteria**

| LOS | Control Delay (seconds per vehicle) |                           |
|-----|-------------------------------------|---------------------------|
|     | Signalized Intersection             | Unsignalized Intersection |
| A   | ≤ 10                                | ≤ 10                      |
| B   | >10 and ≤20                         | >10 and ≤15               |
| C   | >20 and ≤35                         | >15 and ≤25               |
| D   | >35 and ≤55                         | >25 and ≤35               |
| E   | >55 and ≤80                         | >35 and ≤50               |
| F   | > 80                                | > 50                      |

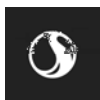


## 5.0 2021 & 2044 NO-BUILD CONDITIONS CAPACITY ANALYSIS

**Table 4** on the following page shows the LOS and overall average intersection delay (in seconds per vehicle) for the study intersections during both the 2021 and 2044 no-build conditions.

As shown in **Table 4**, all of the unsignalized intersections are currently operating at adequate Levels of Service (LOS) during both peak periods. At the signalized intersection with Veterans Parkway, both the eastbound and westbound approaches of 8<sup>th</sup> Street are LOS E in the PM peak hour. The capacity analysis Synchro printouts are included in **Appendix F**.

In the future conditions, all intersections continue to operate at an adequate LOS. The same eastbound and westbound approaches of 8<sup>th</sup> Street at the Veterans Parkway intersection continue to operate at LOS E in the future no-build scenario. These delays are likely due to the priority given to the much larger Veterans Parkway volumes. With the increased volumes, the eastbound and westbound approaches to the intersection were able to operate more efficiently with the existing signal timings.



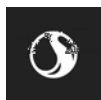
8TH STREET TRAFFIC ENGINEERING STUDY

2021 & 2044 No-Build Conditions Capacity Analysis

**Table 4. No-Build Conditions Capacity Analysis Summary**

| LOS/Delay |                  | 2021 No-Build |                 | 2044 No-Build   |                 |                 |
|-----------|------------------|---------------|-----------------|-----------------|-----------------|-----------------|
|           |                  | AM            | PM              | AM              | PM              |                 |
| 1         | Front Avenue     | Overall       | -               | -               | -               | -               |
|           |                  | EB            | B (12)          | B (10.1)        | B (12.7)        | B (10.3)        |
|           |                  | WB            | B (11.1)        | A (8.9)         | B (11.5)        | A (9)           |
|           |                  | NB            | -               | -               | -               | -               |
|           |                  | SB            | -               | -               | -               | -               |
| 2         | Broadway         | Overall       | -               | -               | -               | -               |
|           |                  | EB            | A (8.7)         | A (8.7)         | A (8.8)         | A (8.8)         |
|           |                  | WB            | A (8.7)         | A (8.8)         | A (8.8)         | A (8.8)         |
|           |                  | NB            | -               | -               | -               | -               |
|           |                  | SB            | -               | -               | -               | -               |
| 3         | First Avenue     | Overall       | -               | -               | -               | -               |
|           |                  | EB            | -               | -               | -               | -               |
|           |                  | WB            | -               | -               | -               | -               |
|           |                  | NB            | A (9.6)         | B (10.4)        | B (10)          | B (10.9)        |
|           |                  | SB            | B (10.3)        | B (10.9)        | B (10.7)        | B (11.5)        |
| 4         | Second Avenue    | Overall       | -               | -               | -               | -               |
|           |                  | EB            | -               | -               | -               | -               |
|           |                  | WB            | -               | -               | -               | -               |
|           |                  | NB            | B (10.3)        | B (10.9)        | B (10.7)        | B (11.6)        |
|           |                  | SB            | B (10.4)        | B (11)          | B (10.9)        | B (12.1)        |
| 5         | Third Avenue     | Overall       | -               | -               | -               | -               |
|           |                  | EB            | -               | -               | -               | -               |
|           |                  | WB            | -               | -               | -               | -               |
|           |                  | NB            | B (10.8)        | B (10.8)        | B (11.5)        | B (11.5)        |
|           |                  | SB            | B (10.2)        | B (10.6)        | B (10.7)        | B (11.5)        |
| 6         | Veterans Parkway | Overall       | <b>B (14.9)</b> | <b>B (16.9)</b> | <b>B (16.2)</b> | <b>B (18.6)</b> |
|           |                  | EB            | <b>D (53.4)</b> | <b>E (60.2)</b> | <b>D (52.0)</b> | <b>E (58.3)</b> |
|           |                  | WB            | <b>D (53.4)</b> | <b>E (60.9)</b> | <b>D (51.9)</b> | <b>E (59)</b>   |
|           |                  | NB            | <b>A (7.4)</b>  | <b>A (7.5)</b>  | <b>A (9.1)</b>  | <b>A (9.7)</b>  |
|           |                  | SB            | <b>A (7.0)</b>  | <b>A (7.9)</b>  | <b>A (8.8)</b>  | <b>A (10.4)</b> |

| <b>Legend:</b> |                                 |
|----------------|---------------------------------|
| X (X)          | LOS (Delay)                     |
|                | Stop-controlled Movement        |
|                | Signalized Movement             |
| -              | No Movement/Insignificant Delay |



## 6.0 2044 ROUNDABOUT ANALYSIS

As part of this analysis, the GDOT Roundabout Analysis Tool was used to measure the effectiveness of installing a mini roundabout at the 2<sup>nd</sup> Avenue intersection.

**Table 5** shows in further detail the traffic operations data resulting from this analysis. The model outputs from Synchro (analyzing 2044 traffic volumes in no-build conditions) are compared to those output from the GDOT Roundabout Analysis Tool. An improvement in performance would be expected if a mini roundabout is implemented at the 2<sup>nd</sup> Avenue intersection. Approaches that were previously free flowing would now be controlled by the roundabout, but overall, the operations at the intersection should be improved. Results from the GDOT Roundabout Analysis Tool are provided in **Appendix G**.

**Table 5: 2044 Second Avenue Roundabout Capacity Analysis Summary**

| LOS/Delay                               |         | 2044 No-Build |          | 2044 Roundabout |         |
|---|---------|---------------|----------|-----------------|---------|
|   |         | AM            | PM       | AM              | PM      |
| 8 <sup>th</sup> Street at Second Avenue | Overall | -             | -        | A (4.6)         | A (4.6) |
|   | EB      | -             | -        | A (4.4)         | A (4.7) |
|   | WB      | -             | -        | A (4.7)         | A (4.4) |
|   | NB      | B (10.7)      | B (11.6) | A (4.2)         | A (4.1) |
|   | SB      | B (10.9)      | B (12.1) | A (4.8)         | A (4.9) |

| Legend: |                                  |
|---------|----------------------------------|
| X (X)   | LOS (Delay)                      |
|         | Existing Two-way Stop-controlled |
|         | Roundabout                       |
| -       | No Movement/Insignificant Delay  |

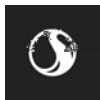


## 7.0 CONCLUSIONS

From examining the traffic conditions along 8<sup>th</sup> Street in a comprehensive fashion, it is apparent that in the existing year the corridor is operating at acceptable levels of service at all the unsignalized intersections. Only the 8<sup>th</sup> Street approaches at the Veterans Parkway signalized intersection operate poorly at a level of service of E at existing 2021 traffic volumes. These approaches continue to operate at an LOS of E at 2044 volumes as well. However, the poor performance of these approaches is primarily due to the current signal timing at the intersection prioritizing Veterans Parkway, which has much higher volumes.

Through the roundabout analysis it is clear that reconstructing the intersection at 2<sup>nd</sup> Avenue as a mini roundabout would improve traffic operations at this location. By calming traffic on 8<sup>th</sup> Street and removing the stop control on the side street, a roundabout can vastly improve the safety and operation of the 2<sup>nd</sup> Avenue intersection.

The results and analysis described in this report, along with a Road Safety Audit, will serve to develop improvement recommendations along the corridor with a focus on traffic operations and safety.



## 8TH STREET TRAFFIC ENGINEERING STUDY

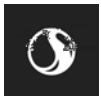
List of Appendices

# APPENDICES

- Appendix A**    Traffic Volume Counts
- Appendix B**    Speed Counts
- Appendix C**    Turning Movement Counts
- Appendix D**    Truck Percentage Calculations
- Appendix E**    Traffic Volume Projections
- Appendix F**    Synchro Reports
- Appendix G**    GDOT Roundabout Tool Results
- Appendix H**    Growth Rate Calculations



## Appendix A TRAFFIC VOLUME COUNTS



# VOLUME

8th St E/O Front Ave

Day: Tuesday  
Date: 5/11/2021

City: Columbus  
Project #: GA21\_180120\_001

| DAILY TOTALS   |    |    |       |       | NB    | SB             | EB  | WB  | Total |       |       |
|----------------|----|----|-------|-------|-------|----------------|-----|-----|-------|-------|-------|
|                |    |    |       |       | 0     | 0              | 367 | 456 | 823   |       |       |
| AM Period      | NB | SB | EB    | WB    | TOTAL | PM Period      | NB  | SB  | EB    | WB    | TOTAL |
| 00:00          |    |    | 0     | 1     | 1     | 12:00          |     |     | 6     | 7     | 13    |
| 00:15          |    |    | 0     | 0     | 0     | 12:15          |     |     | 8     | 11    | 19    |
| 00:30          |    |    | 0     | 0     | 0     | 12:30          |     |     | 4     | 7     | 11    |
| 00:45          |    |    | 0     | 0     | 0     | 12:45          |     | 1   | 6     | 24    | 31    |
| 01:00          |    |    | 0     | 0     | 0     | 13:00          |     |     | 13    | 7     | 20    |
| 01:15          |    |    | 0     | 0     | 0     | 13:15          |     |     | 3     | 10    | 13    |
| 01:30          |    |    | 0     | 0     | 0     | 13:30          |     |     | 4     | 5     | 9     |
| 01:45          |    |    | 0     | 0     | 0     | 13:45          |     |     | 5     | 25    | 31    |
| 02:00          |    |    | 0     | 0     | 0     | 14:00          |     |     | 6     | 10    | 16    |
| 02:15          |    |    | 0     | 1     | 1     | 14:15          |     |     | 3     | 7     | 10    |
| 02:30          |    |    | 0     | 0     | 0     | 14:30          |     |     | 8     | 3     | 11    |
| 02:45          |    |    | 2     | 2     | 0     | 14:45          |     | 1   | 2     | 19    | 23    |
| 03:00          |    |    | 0     | 0     | 0     | 15:00          |     |     | 3     | 9     | 12    |
| 03:15          |    |    | 1     | 0     | 1     | 15:15          |     |     | 3     | 8     | 11    |
| 03:30          |    |    | 0     | 0     | 0     | 15:30          |     |     | 11    | 9     | 20    |
| 03:45          |    |    | 0     | 1     | 0     | 15:45          |     |     | 8     | 25    | 34    |
| 04:00          |    |    | 0     | 0     | 0     | 16:00          |     |     | 9     | 11    | 20    |
| 04:15          |    |    | 0     | 0     | 0     | 16:15          |     |     | 4     | 15    | 19    |
| 04:30          |    |    | 0     | 0     | 0     | 16:30          |     |     | 11    | 8     | 19    |
| 04:45          |    |    | 0     | 0     | 0     | 16:45          |     |     | 9     | 33    | 42    |
| 05:00          |    |    | 2     | 0     | 2     | 17:00          |     |     | 9     | 19    | 28    |
| 05:15          |    |    | 1     | 7     | 8     | 17:15          |     |     | 16    | 20    | 36    |
| 05:30          |    |    | 1     | 1     | 2     | 17:30          |     |     | 10    | 11    | 21    |
| 05:45          |    |    | 3     | 7     | 1     | 17:45          |     | 9   | 2     | 37    | 59    |
| 06:00          |    |    | 0     | 2     | 2     | 18:00          |     |     | 6     | 9     | 15    |
| 06:15          |    |    | 3     | 4     | 7     | 18:15          |     |     | 11    | 11    | 22    |
| 06:30          |    |    | 12    | 1     | 13    | 18:30          |     |     | 15    | 8     | 23    |
| 06:45          |    |    | 1     | 16    | 2     | 18:45          |     | 9   | 6     | 38    | 47    |
| 07:00          |    |    | 7     | 2     | 9     | 19:00          |     |     | 6     | 6     | 12    |
| 07:15          |    |    | 6     | 2     | 8     | 19:15          |     |     | 6     | 4     | 10    |
| 07:30          |    |    | 4     | 7     | 11    | 19:30          |     |     | 3     | 1     | 4     |
| 07:45          |    |    | 3     | 20    | 6     | 19:45          |     | 17  | 1     | 16    | 16    |
| 08:00          |    |    | 4     | 7     | 11    | 20:00          |     |     | 4     | 2     | 6     |
| 08:15          |    |    | 4     | 14    | 18    | 20:15          |     |     | 0     | 2     | 2     |
| 08:30          |    |    | 6     | 7     | 13    | 20:30          |     |     | 2     | 1     | 3     |
| 08:45          |    |    | 8     | 22    | 6     | 20:45          |     | 34  | 1     | 7     | 8     |
| 09:00          |    |    | 6     | 8     | 14    | 21:00          |     |     | 0     | 2     | 2     |
| 09:15          |    |    | 2     | 10    | 12    | 21:15          |     |     | 2     | 4     | 6     |
| 09:30          |    |    | 4     | 4     | 8     | 21:30          |     |     | 0     | 0     | 0     |
| 09:45          |    |    | 7     | 19    | 2     | 21:45          |     | 24  | 1     | 3     | 7     |
| 10:00          |    |    | 4     | 4     | 8     | 22:00          |     |     | 2     | 3     | 5     |
| 10:15          |    |    | 6     | 3     | 9     | 22:15          |     |     | 1     | 1     | 2     |
| 10:30          |    |    | 4     | 11    | 15    | 22:30          |     |     | 2     | 2     | 4     |
| 10:45          |    |    | 13    | 27    | 4     | 22:45          |     | 22  | 0     | 5     | 6     |
| 11:00          |    |    | 8     | 4     | 12    | 23:00          |     |     | 1     | 2     | 3     |
| 11:15          |    |    | 4     | 4     | 8     | 23:15          |     |     | 0     | 3     | 3     |
| 11:30          |    |    | 4     | 8     | 12    | 23:30          |     |     | 0     | 2     | 2     |
| 11:45          |    |    | 4     | 20    | 13    | 23:45          |     | 29  | 0     | 1     | 8     |
| <b>TOTALS</b>  |    |    | 134   | 146   | 280   | <b>TOTALS</b>  |     |     | 233   | 310   | 543   |
| <b>SPLIT %</b> |    |    | 47.9% | 52.1% | 34.0% | <b>SPLIT %</b> |     |     | 42.9% | 57.1% | 66.0% |

| DAILY TOTALS    |       |       |       |       | NB    | SB              | EB    | WB    | Total |       |       |
|-----------------|-------|-------|-------|-------|-------|-----------------|-------|-------|-------|-------|-------|
|                 |       |       |       |       | 0     | 0               | 367   | 456   | 823   |       |       |
| AM Peak Hour    |       |       | 10:15 | 11:30 | 11:30 | PM Peak Hour    |       |       | 16:30 | 16:45 | 16:45 |
| AM Pk Volume    |       |       | 31    | 39    | 61    | PM Pk Volume    |       |       | 45    | 66    | 110   |
| Pk Hr Factor    |       |       | 0.596 | 0.750 | 0.803 | Pk Hr Factor    |       |       | 0.703 | 0.825 | 0.764 |
| 7 - 9 Volume    | 0     | 0     | 42    | 51    | 93    | 4 - 6 Volume    | 0     | 0     | 70    | 109   | 179   |
| 7 - 9 Peak Hour |       |       | 08:00 | 07:30 | 08:00 | 4 - 6 Peak Hour |       |       | 16:30 | 16:45 | 16:45 |
| 7 - 9 Pk Volume | 0     | 0     | 22    | 34    | 56    | 4 - 6 Pk Volume | 0     | 0     | 45    | 66    | 110   |
| Pk Hr Factor    | 0.000 | 0.000 | 0.688 | 0.607 | 0.778 | Pk Hr Factor    | 0.000 | 0.000 | 0.703 | 0.825 | 0.764 |





|                    |           |            |            |   |           |           |           |   |           |   |   |   |   |   |             |
|--------------------|-----------|------------|------------|---|-----------|-----------|-----------|---|-----------|---|---|---|---|---|-------------|
| 21:00              | 0         | 1          | 1          | 0 | 0         | 0         | 0         | 0 | 0         | 0 | 0 | 0 | 0 | 0 | 2           |
| 21:15              | 0         | 1          | 0          | 0 | 0         | 0         | 0         | 0 | 0         | 0 | 0 | 0 | 0 | 0 | 1           |
| 21:30              | 0         | 2          | 0          | 0 | 0         | 0         | 0         | 0 | 0         | 0 | 0 | 0 | 0 | 0 | 2           |
| 21:45              | 0         | 2          | 0          | 0 | 0         | 0         | 0         | 0 | 0         | 0 | 0 | 0 | 0 | 0 | 2           |
| 22:00              | 0         | 4          | 0          | 0 | 0         | 0         | 0         | 0 | 0         | 0 | 0 | 0 | 0 | 0 | 4           |
| 22:15              | 0         | 2          | 0          | 0 | 0         | 0         | 0         | 0 | 0         | 0 | 0 | 0 | 0 | 0 | 2           |
| 22:30              | 0         | 3          | 0          | 0 | 0         | 0         | 0         | 0 | 0         | 0 | 0 | 0 | 0 | 0 | 3           |
| 22:45              | 0         | 2          | 0          | 0 | 0         | 0         | 0         | 0 | 0         | 0 | 0 | 0 | 0 | 0 | 2           |
| 23:00              | 0         | 3          | 0          | 0 | 0         | 0         | 0         | 0 | 0         | 0 | 0 | 0 | 0 | 0 | 3           |
| 23:15              | 0         | 1          | 0          | 0 | 0         | 0         | 1         | 0 | 0         | 0 | 0 | 0 | 0 | 0 | 2           |
| 23:30              | 0         | 1          | 0          | 0 | 0         | 0         | 0         | 0 | 0         | 0 | 0 | 0 | 0 | 0 | 1           |
| 23:45              | 0         | 0          | 0          | 0 | 0         | 0         | 0         | 0 | 0         | 0 | 0 | 0 | 0 | 0 | 0           |
| <b>Totals</b>      | <b>4</b>  | <b>493</b> | <b>103</b> |   | <b>9</b>  | <b>2</b>  | <b>3</b>  |   | <b>1</b>  |   |   |   |   |   | <b>615</b>  |
| <b>% of Totals</b> | <b>1%</b> | <b>80%</b> | <b>17%</b> |   | <b>1%</b> | <b>0%</b> | <b>0%</b> |   | <b>0%</b> |   |   |   |   |   | <b>100%</b> |

|                                 |        |     |               |     |        |                  |     |        |               |     |        |                         |     |   |     |
|---------------------------------|--------|-----|---------------|-----|--------|------------------|-----|--------|---------------|-----|--------|-------------------------|-----|---|-----|
| AM Volumes                      | 1      | 172 | 45            | 0   | 6      | 0                | 1   | 0      | 1             | 0   | 0      | 0                       | 0   | 0 | 226 |
| % AM                            | 0%     | 28% | 7%            |     | 1%     |                  | 0%  |        | 0%            |     |        |                         |     |   | 37% |
| AM Peak Hour Volume             |        |     |               |     |        |                  |     |        |               |     |        |                         |     |   |     |
| PM Volumes                      | 3      | 321 | 58            | 0   | 3      | 2                | 2   | 0      | 0             | 0   | 0      | 0                       | 0   | 0 | 389 |
| % PM                            | 0%     | 52% | 9%            |     | 0%     | 0%               | 0%  |        |               |     |        |                         |     |   | 63% |
| PM Peak Hour Volume             |        |     |               |     |        |                  |     |        |               |     |        |                         |     |   |     |
| <b>Directional Peak Periods</b> |        |     | <b>AM 7-9</b> |     |        | <b>NOON 12-2</b> |     |        | <b>PM 4-6</b> |     |        | <b>Off Peak Volumes</b> |     |   |     |
| <b>All Classes</b>              | Volume |     |               | %   | Volume |                  | %   | Volume |               | %   | Volume |                         | %   |   |     |
|                                 | 64     | ↔   |               | 10% | 108    | ↔                | 18% | 97     | ↔             | 16% | 346    | ↔                       | 56% |   |     |

|                                   |                               |                            |                             |                            |
|-----------------------------------|-------------------------------|----------------------------|-----------------------------|----------------------------|
| <b>Classification Definitions</b> |                               |                            |                             |                            |
| 1 Motorcycles                     | 4 Buses                       | 7 >=4-Axle Single Units    | 10 >=6-Axle Single Trailers | 13 >=7-Axle Multi-Trailers |
| 2 Passenger Cars                  | 5 2-Axle, 6-Tire Single Units | 8 <=4-Axle Single Trailers | 11 <=5-Axle Multi-Trailers  |                            |
| 3 2-Axle, 4-Tire Single Units     | 6 3-Axle Single Units         | 9 5-Axle Single Trailers   | 12 6-Axle Multi-Trailers    |                            |





|                    |          |            |            |          |           |          |   |   |          |   |   |   |   |   |            |
|--------------------|----------|------------|------------|----------|-----------|----------|---|---|----------|---|---|---|---|---|------------|
| 21:00              | 0        | 5          | 0          | 0        | 0         | 0        | 0 | 0 | 0        | 0 | 0 | 0 | 0 | 0 | 5          |
| 21:15              | 0        | 4          | 1          | 0        | 0         | 0        | 0 | 0 | 0        | 0 | 0 | 0 | 0 | 0 | 5          |
| 21:30              | 0        | 1          | 0          | 0        | 0         | 0        | 0 | 0 | 0        | 0 | 0 | 0 | 0 | 0 | 1          |
| 21:45              | 0        | 1          | 0          | 0        | 0         | 0        | 0 | 0 | 0        | 0 | 0 | 0 | 0 | 0 | 1          |
| 22:00              | 0        | 0          | 1          | 0        | 0         | 0        | 0 | 0 | 0        | 0 | 0 | 0 | 0 | 0 | 1          |
| 22:15              | 0        | 2          | 0          | 0        | 0         | 0        | 0 | 0 | 0        | 0 | 0 | 0 | 0 | 0 | 2          |
| 22:30              | 0        | 2          | 0          | 0        | 0         | 0        | 0 | 0 | 0        | 0 | 0 | 0 | 0 | 0 | 2          |
| 22:45              | 0        | 3          | 0          | 0        | 0         | 0        | 0 | 0 | 0        | 0 | 0 | 0 | 0 | 0 | 3          |
| 23:00              | 0        | 2          | 0          | 0        | 0         | 0        | 0 | 0 | 0        | 0 | 0 | 0 | 0 | 0 | 2          |
| 23:15              | 0        | 4          | 0          | 0        | 0         | 0        | 0 | 0 | 0        | 0 | 0 | 0 | 0 | 0 | 4          |
| 23:30              | 0        | 2          | 0          | 0        | 0         | 0        | 0 | 0 | 0        | 0 | 0 | 0 | 0 | 0 | 2          |
| 23:45              | 0        | 0          | 0          | 0        | 0         | 0        | 0 | 0 | 0        | 0 | 0 | 0 | 0 | 0 | 0          |
| <b>Totals</b>      | <b>1</b> | <b>675</b> | <b>135</b> | <b>1</b> | <b>12</b> | <b>2</b> |   |   | <b>1</b> |   |   |   |   |   | <b>827</b> |
| <b>% of Totals</b> | 0%       | 82%        | 16%        | 0%       | 1%        | 0%       |   |   | 0%       |   |   |   |   |   | 100%       |

|   |        |               |     |    |        |                  |     |        |    |     |               |   |     |   |                         |
|---|--------|---------------|-----|----|--------|------------------|-----|--------|----|-----|---------------|---|-----|---|-------------------------|
| AM Volumes                                  | 1      | 229           | 50  | 0  | 6      | 1                | 0   | 0      | 1  | 0   | 0             | 0 | 0   | 0 | 288                     |
| % AM  | 0%     | 28%           | 6%  |    | 1%     | 0%               |     |        | 0% |     |               |   |     |   | 35%                     |
| AM Peak Hour Volume                         |        |               |     |    |        |                  |     |        |    |     |               |   |     |   |                         |
| PM Volumes                                  | 0      | 446           | 85  | 1  | 6      | 1                | 0   | 0      | 0  | 0   | 0             | 0 | 0   | 0 | 539                     |
| % PM  |        | 54%           | 10% | 0% | 1%     | 0%               |     |        |    |     |               |   |     |   | 65%                     |
| PM Peak Hour Volume                         |        |               |     |    |        |                  |     |        |    |     |               |   |     |   |                         |
| <b>Directional Peak Periods All Classes</b> |        |               |     |    |        |                  |     |        |    |     |               |   |     |   |                         |
|   |        | <b>AM 7-9</b> |     |    |        | <b>NOON 12-2</b> |     |        |    |     | <b>PM 4-6</b> |   |     |   | <b>Off Peak Volumes</b> |
|   | Volume |               | %   |    | Volume | %                |     | Volume | %  |     | Volume        | % |     |   |                         |
|   | 91     | ↔             | 11% |    | 143    | ↔                | 17% | 158    | ↔  | 19% | 435           | ↔ | 53% |   |                         |

|                                   |                               |                            |                             |                            |
|-----------------------------------|-------------------------------|----------------------------|-----------------------------|----------------------------|
| <b>Classification Definitions</b> |                               |                            |                             |                            |
| 1 Motorcycles                     | 4 Buses                       | 7 >=4-Axle Single Units    | 10 >=6-Axle Single Trailers | 13 >=7-Axle Multi-Trailers |
| 2 Passenger Cars                  | 5 2-Axle, 6-Tire Single Units | 8 <=4-Axle Single Trailers | 11 <=5-Axle Multi-Trailers  |                            |
| 3 2-Axle, 4-Tire Single Units     | 6 3-Axle Single Units         | 9 5-Axle Single Trailers   | 12 6-Axle Multi-Trailers    |                            |



## VOLUME

8th St E/O 3rd Ave

Day: Tuesday  
Date: 5/11/2021

City: Columbus  
Project #: GA21\_180120\_002

| DAILY TOTALS   |    |    |       |       | NB    | SB             | EB  | WB  | Total |       |       |
|----------------|----|----|-------|-------|-------|----------------|-----|-----|-------|-------|-------|
|                |    |    |       |       | 0     | 0              | 888 | 928 | 1,816 |       |       |
| AM Period      | NB | SB | EB    | WB    | TOTAL | PM Period      | NB  | SB  | EB    | WB    | TOTAL |
| 00:00          |    |    | 0     | 1     | 1     | 12:00          |     |     | 18    | 24    | 42    |
| 00:15          |    |    | 0     | 0     | 0     | 12:15          |     |     | 24    | 29    | 53    |
| 00:30          |    |    | 0     | 1     | 1     | 12:30          |     |     | 9     | 21    | 30    |
| 00:45          |    |    | 0     | 0     | 0     | 12:45          |     | 20  | 71    | 18    | 92    |
| 01:00          |    |    | 2     | 1     | 3     | 13:00          |     |     | 32    | 29    | 61    |
| 01:15          |    |    | 0     | 0     | 0     | 13:15          |     |     | 18    | 19    | 37    |
| 01:30          |    |    | 0     | 0     | 0     | 13:30          |     |     | 22    | 15    | 37    |
| 01:45          |    |    | 0     | 2     | 0     | 13:45          |     | 15  | 87    | 21    | 84    |
| 02:00          |    |    | 0     | 0     | 0     | 14:00          |     |     | 21    | 21    | 42    |
| 02:15          |    |    | 0     | 2     | 2     | 14:15          |     |     | 11    | 15    | 26    |
| 02:30          |    |    | 0     | 0     | 0     | 14:30          |     |     | 17    | 11    | 28    |
| 02:45          |    |    | 1     | 1     | 0     | 14:45          |     | 16  | 65    | 14    | 61    |
| 03:00          |    |    | 1     | 0     | 1     | 15:00          |     |     | 9     | 18    | 27    |
| 03:15          |    |    | 0     | 1     | 1     | 15:15          |     |     | 11    | 10    | 21    |
| 03:30          |    |    | 0     | 0     | 0     | 15:30          |     |     | 11    | 13    | 24    |
| 03:45          |    |    | 2     | 3     | 1     | 15:45          |     | 19  | 50    | 21    | 62    |
| 04:00          |    |    | 0     | 0     | 0     | 16:00          |     |     | 15    | 21    | 36    |
| 04:15          |    |    | 0     | 0     | 0     | 16:15          |     |     | 22    | 13    | 35    |
| 04:30          |    |    | 0     | 1     | 1     | 16:30          |     |     | 16    | 22    | 38    |
| 04:45          |    |    | 1     | 1     | 1     | 16:45          |     | 15  | 68    | 22    | 78    |
| 05:00          |    |    | 3     | 0     | 3     | 17:00          |     |     | 24    | 24    | 48    |
| 05:15          |    |    | 2     | 7     | 9     | 17:15          |     |     | 19    | 26    | 45    |
| 05:30          |    |    | 4     | 1     | 5     | 17:30          |     |     | 19    | 15    | 34    |
| 05:45          |    |    | 6     | 15    | 3     | 17:45          |     | 14  | 76    | 20    | 85    |
| 06:00          |    |    | 4     | 1     | 5     | 18:00          |     |     | 6     | 9     | 15    |
| 06:15          |    |    | 7     | 5     | 12    | 18:15          |     |     | 10    | 16    | 26    |
| 06:30          |    |    | 11    | 1     | 12    | 18:30          |     |     | 16    | 16    | 32    |
| 06:45          |    |    | 9     | 31    | 4     | 18:45          |     | 10  | 42    | 10    | 51    |
| 07:00          |    |    | 5     | 2     | 7     | 19:00          |     |     | 14    | 7     | 21    |
| 07:15          |    |    | 15    | 9     | 24    | 19:15          |     |     | 8     | 13    | 21    |
| 07:30          |    |    | 17    | 14    | 31    | 19:30          |     |     | 5     | 4     | 9     |
| 07:45          |    |    | 14    | 51    | 9     | 19:45          |     | 6   | 33    | 10    | 34    |
| 08:00          |    |    | 17    | 18    | 35    | 20:00          |     |     | 6     | 3     | 9     |
| 08:15          |    |    | 15    | 15    | 30    | 20:15          |     |     | 7     | 7     | 14    |
| 08:30          |    |    | 17    | 16    | 33    | 20:30          |     |     | 4     | 3     | 7     |
| 08:45          |    |    | 11    | 60    | 14    | 20:45          |     | 3   | 20    | 7     | 20    |
| 09:00          |    |    | 7     | 18    | 25    | 21:00          |     |     | 8     | 5     | 13    |
| 09:15          |    |    | 8     | 23    | 31    | 21:15          |     |     | 5     | 5     | 10    |
| 09:30          |    |    | 12    | 8     | 20    | 21:30          |     |     | 5     | 1     | 6     |
| 09:45          |    |    | 14    | 41    | 13    | 21:45          |     | 1   | 19    | 1     | 12    |
| 10:00          |    |    | 15    | 13    | 28    | 22:00          |     |     | 4     | 2     | 6     |
| 10:15          |    |    | 14    | 16    | 30    | 22:15          |     |     | 1     | 2     | 3     |
| 10:30          |    |    | 20    | 17    | 37    | 22:30          |     |     | 4     | 2     | 6     |
| 10:45          |    |    | 11    | 60    | 7     | 22:45          |     | 3   | 12    | 3     | 9     |
| 11:00          |    |    | 17    | 22    | 39    | 23:00          |     |     | 2     | 2     | 4     |
| 11:15          |    |    | 19    | 17    | 36    | 23:15          |     |     | 1     | 4     | 5     |
| 11:30          |    |    | 27    | 28    | 55    | 23:30          |     |     | 2     | 2     | 4     |
| 11:45          |    |    | 11    | 74    | 22    | 23:45          |     | 1   | 6     | 0     | 8     |
| <b>TOTALS</b>  |    |    | 339   | 332   | 671   | <b>TOTALS</b>  |     |     | 549   | 596   | 1145  |
| <b>SPLIT %</b> |    |    | 50.5% | 49.5% | 36.9% | <b>SPLIT %</b> |     |     | 47.9% | 52.1% | 63.1% |

| DAILY TOTALS |  |  |  |  | NB | SB | EB  | WB  | Total |
|--------------|--|--|--|--|----|----|-----|-----|-------|
|              |  |  |  |  | 0  | 0  | 888 | 928 | 1,816 |

|                 |       |       |       |                 |       |       |       |
|-----------------|-------|-------|-------|-----------------|-------|-------|-------|
| AM Peak Hour    | 11:30 | 11:30 | 11:30 | PM Peak Hour    | 12:45 | 12:15 | 12:15 |
| AM Pk Volume    | 80    | 103   | 183   | PM Pk Volume    | 92    | 97    | 182   |
| Pk Hr Factor    | 0.741 | 0.888 | 0.832 | Pk Hr Factor    | 0.719 | 0.836 | 0.746 |
| 7 - 9 Volume    | 0     | 0     | 111   | 97              | 0     | 0     | 307   |
| 7 - 9 Peak Hour | 07:15 | 08:00 | 08:00 | 4 - 6 Volume    | 16:15 | 16:30 | 16:30 |
| 7 - 9 Pk Volume | 63    | 63    | 123   | 4 - 6 Peak Hour | 77    | 94    | 168   |
| Pk Hr Factor    | 0.000 | 0.000 | 0.926 | 0.875           | 0.879 | 0.802 | 0.904 |

## Appendix B SPEED COUNTS







|                    |           |            |            |            |            |           |   |   |   |   |   |   |   |   |             |
|--------------------|-----------|------------|------------|------------|------------|-----------|---|---|---|---|---|---|---|---|-------------|
| 21:00              | 0         | 0          | 1          | 1          | 0          | 0         | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2           |
| 21:15              | 0         | 0          | 0          | 0          | 1          | 0         | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1           |
| 21:30              | 0         | 0          | 1          | 1          | 0          | 0         | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2           |
| 21:45              | 0         | 0          | 1          | 1          | 0          | 0         | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2           |
| 22:00              | 0         | 0          | 2          | 2          | 0          | 0         | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4           |
| 22:15              | 0         | 0          | 0          | 1          | 1          | 0         | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2           |
| 22:30              | 0         | 1          | 0          | 2          | 0          | 0         | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3           |
| 22:45              | 0         | 0          | 0          | 1          | 1          | 0         | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2           |
| 23:00              | 0         | 1          | 1          | 1          | 0          | 0         | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3           |
| 23:15              | 0         | 1          | 1          | 0          | 0          | 0         | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2           |
| 23:30              | 0         | 0          | 1          | 0          | 0          | 0         | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1           |
| 23:45              | 0         | 0          | 0          | 0          | 0          | 0         | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0           |
| <b>Totals</b>      | <b>48</b> | <b>109</b> | <b>208</b> | <b>172</b> | <b>65</b>  | <b>13</b> |   |   |   |   |   |   |   |   | <b>615</b>  |
| <b>% of Totals</b> | <b>8%</b> | <b>18%</b> | <b>34%</b> | <b>28%</b> | <b>11%</b> | <b>2%</b> |   |   |   |   |   |   |   |   | <b>100%</b> |

|                                 |       |       |               |       |       |        |                  |     |        |   |               |        |   |                         |       |
|---------------------------------|-------|-------|---------------|-------|-------|--------|------------------|-----|--------|---|---------------|--------|---|-------------------------|-------|
| <b>AM Volumes</b>               | 15    | 38    | 74            | 69    | 26    | 4      | 0                | 0   | 0      | 0 | 0             | 0      | 0 | 0                       | 226   |
| <b>% AM</b>                     | 2%    | 6%    | 12%           | 11%   | 4%    | 1%     |                  |     |        |   |               |        |   |                         | 37%   |
| <b>AM Peak Hour</b>             | 11:00 | 11:30 | 09:30         | 10:15 | 07:30 | 05:30  |                  |     |        |   |               |        |   |                         | 11:30 |
| <b>Volume</b>                   | 9     | 17    | 19            | 15    | 8     | 2      |                  |     |        |   |               |        |   |                         | 54    |
| <b>PM Volumes</b>               | 33    | 71    | 134           | 103   | 39    | 9      | 0                | 0   | 0      | 0 | 0             | 0      | 0 | 0                       | 389   |
| <b>% PM</b>                     | 5%    | 12%   | 22%           | 17%   | 6%    | 1%     |                  |     |        |   |               |        |   |                         | 63%   |
| <b>PM Peak Hour</b>             | 12:45 | 12:15 | 13:00         | 16:15 | 16:30 | 13:45  |                  |     |        |   |               |        |   |                         | 12:45 |
| <b>Volume</b>                   | 13    | 15    | 23            | 24    | 12    | 3      |                  |     |        |   |               |        |   |                         | 61    |
| <b>Directional Peak Periods</b> |       |       | <b>AM 7-9</b> |       |       |        | <b>NOON 12-2</b> |     |        |   | <b>PM 4-6</b> |        |   | <b>Off Peak Volumes</b> |       |
| <b>All Classes</b>              |       |       | Volume        |       | %     | Volume |                  | %   | Volume |   | %             | Volume |   | %                       |       |
|                                 |       |       | 64            | ↔     | 10%   | 108    | ↔                | 18% | 97     | ↔ | 16%           | 346    | ↔ | 56%                     |       |

| Street Name | Direction  | Percentiles |      |         |      |      |     |
|-------------|------------|-------------|------|---------|------|------|-----|
|             |            | 15th        | 50th | Average | 85th | 95th | ADT |
| 8th St      | East Bound | 17          | 24   | 23      | 30   | 34   | 615 |
| 8th St      | West Bound | 19          | 25   | 25      | 30   | 34   | 827 |





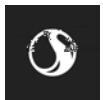
|                    |           |            |            |            |            |           |          |   |   |   |   |   |   |   |            |
|--------------------|-----------|------------|------------|------------|------------|-----------|----------|---|---|---|---|---|---|---|------------|
| 21:00              | 0         | 1          | 1          | 3          | 0          | 0         | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5          |
| 21:15              | 0         | 0          | 4          | 1          | 0          | 0         | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5          |
| 21:30              | 0         | 1          | 0          | 0          | 0          | 0         | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1          |
| 21:45              | 0         | 1          | 0          | 0          | 0          | 0         | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1          |
| 22:00              | 0         | 0          | 1          | 0          | 0          | 0         | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1          |
| 22:15              | 0         | 0          | 1          | 1          | 0          | 0         | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2          |
| 22:30              | 0         | 0          | 0          | 2          | 0          | 0         | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2          |
| 22:45              | 0         | 0          | 0          | 1          | 1          | 1         | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3          |
| 23:00              | 0         | 0          | 2          | 0          | 0          | 0         | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2          |
| 23:15              | 0         | 0          | 2          | 2          | 0          | 0         | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4          |
| 23:30              | 0         | 0          | 1          | 1          | 0          | 0         | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2          |
| 23:45              | 0         | 0          | 0          | 0          | 0          | 0         | 0        | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0          |
| <b>Totals</b>      | <b>43</b> | <b>110</b> | <b>262</b> | <b>277</b> | <b>114</b> | <b>18</b> | <b>3</b> |   |   |   |   |   |   |   | <b>827</b> |
| <b>% of Totals</b> | 5%        | 13%        | 32%        | 33%        | 14%        | 2%        | 0%       |   |   |   |   |   |   |   | 100%       |

|                                 |       |               |       |       |       |                  |       |     |               |        |   |                         |   |        |       |     |
|---------------------------------|-------|---------------|-------|-------|-------|------------------|-------|-----|---------------|--------|---|-------------------------|---|--------|-------|-----|
| AM Volumes                      | 20    | 36            | 88    | 86    | 47    | 9                | 2     | 0   | 0             | 0      | 0 | 0                       | 0 | 0      | 288   |     |
| % AM                            | 2%    | 4%            | 11%   | 10%   | 6%    | 1%               | 0%    |     |               |        |   |                         |   |        | 35%   |     |
| AM Peak Hour                    | 11:15 | 11:45         | 11:15 | 08:45 | 08:30 | 08:30            | 07:00 |     |               |        |   |                         |   |        | 11:30 |     |
| Volume                          | 15    | 18            | 27    | 24    | 17    | 5                | 1     |     |               |        |   |                         |   |        | 79    |     |
| PM Volumes                      | 23    | 74            | 174   | 191   | 67    | 9                | 1     | 0   | 0             | 0      | 0 | 0                       | 0 | 0      | 539   |     |
| % PM                            | 3%    | 9%            | 21%   | 23%   | 8%    | 1%               | 0%    |     |               |        |   |                         |   |        | 65%   |     |
| PM Peak Hour                    | 12:00 | 12:15         | 16:30 | 16:30 | 16:30 | 15:00            | 12:15 |     |               |        |   |                         |   |        | 16:30 |     |
| Volume                          | 12    | 24            | 29    | 39    | 15    | 3                | 1     |     |               |        |   |                         |   |        | 91    |     |
| <b>Directional Peak Periods</b> |       | <b>AM 7-9</b> |       |       |       | <b>NOON 12-2</b> |       |     | <b>PM 4-6</b> |        |   | <b>Off Peak Volumes</b> |   |        |       |     |
| <b>All Classes</b>              |       | Volume        |       | %     |       | Volume           |       | %   |               | Volume |   | %                       |   | Volume | %     |     |
|                                 |       | 91            | ↔     | 11%   |       | 143              | ↔     | 17% |               | 158    | ↔ | 19%                     |   | 435    | ↔     | 53% |

| Street Name | Direction  | Percentiles |      |         |      |      |     |
|-------------|------------|-------------|------|---------|------|------|-----|
|             |            | 15th        | 50th | Average | 85th | 95th | ADT |
| 8th St      | East Bound | 17          | 24   | 23      | 30   | 34   | 615 |
| 8th St      | West Bound | 19          | 25   | 25      | 30   | 34   | 827 |



## Appendix C TURNING MOVEMENT COUNTS



# National Data & Surveying Services Intersection Turning Movement Count

Location: Front Ave & 8th St  
 City: Columbus  
 Control: 2-Way Stop(EB/WB)

Project ID: 21-180119-001  
 Date: 5/10/2021

## Data - Total

| NS/EW Streets:          | Front Ave                  |        |        |       | Front Ave  |        |       |       | 8th St    |        |        |       | 8th St    |       |        |       | TOTAL        |   |   |   |       |
|-------------------------|----------------------------|--------|--------|-------|------------|--------|-------|-------|-----------|--------|--------|-------|-----------|-------|--------|-------|--------------|---|---|---|-------|
|                         | NORTHBOUND                 |        |        |       | SOUTHBOUND |        |       |       | EASTBOUND |        |        |       | WESTBOUND |       |        |       |              |   |   |   |       |
| AM                      | 0                          | 1      | 0      | 0     | 0          | 2      | 0     | 0     | 0         | 1      | 0      | 0     | 0         | 1     | 0      | 0     | 0            | 1 | 0 | 0 | TOTAL |
|                         | NL                         | NT     | NR     | NU    | SL         | ST     | SR    | SU    | EL        | ET     | ER     | EU    | WL        | WT    | WR     | WU    |              |   |   |   |       |
| 7:00 AM                 | 0                          | 0      | 1      | 0     | 3          | 3      | 0     | 0     | 0         | 0      | 0      | 0     | 0         | 0     | 2      | 0     |              |   |   |   | 9     |
| 7:15 AM                 | 0                          | 0      | 0      | 0     | 6          | 1      | 0     | 0     | 0         | 0      | 0      | 0     | 0         | 0     | 1      | 0     |              |   |   |   | 8     |
| 7:30 AM                 | 0                          | 5      | 1      | 0     | 4          | 3      | 1     | 0     | 0         | 0      | 0      | 0     | 1         | 0     | 4      | 0     |              |   |   |   | 19    |
| 7:45 AM                 | 0                          | 1      | 0      | 0     | 3          | 2      | 0     | 0     | 0         | 0      | 0      | 0     | 1         | 0     | 3      | 0     |              |   |   |   | 10    |
| 8:00 AM                 | 0                          | 6      | 0      | 0     | 2          | 4      | 0     | 0     | 1         | 0      | 0      | 0     | 1         | 0     | 4      | 0     |              |   |   |   | 18    |
| 8:15 AM                 | 0                          | 4      | 2      | 0     | 6          | 10     | 0     | 1     | 0         | 0      | 0      | 0     | 3         | 0     | 5      | 0     |              |   |   |   | 31    |
| 8:30 AM                 | 0                          | 7      | 1      | 0     | 3          | 16     | 0     | 0     | 0         | 0      | 1      | 0     | 1         | 0     | 3      | 0     |              |   |   |   | 32    |
| 8:45 AM                 | 0                          | 9      | 0      | 0     | 6          | 5      | 1     | 0     | 0         | 1      | 0      | 0     | 4         | 1     | 1      | 0     |              |   |   |   | 28    |
| <b>TOTAL VOLUMES :</b>  | NL                         | NT     | NR     | NU    | SL         | ST     | SR    | SU    | EL        | ET     | ER     | EU    | WL        | WT    | WR     | WU    | <b>TOTAL</b> |   |   |   |       |
| <b>APPROACH %'s :</b>   | 0                          | 32     | 5      | 0     | 33         | 44     | 2     | 1     | 1         | 1      | 1      | 0     | 11        | 1     | 23     | 0     | 155          |   |   |   |       |
|                         | 0.00%                      | 86.49% | 13.51% | 0.00% | 41.25%     | 55.00% | 2.50% | 1.25% | 33.33%    | 33.33% | 33.33% | 0.00% | 31.43%    | 2.86% | 65.71% | 0.00% | 0.852        |   |   |   |       |
| <b>PEAK HR :</b>        | <b>08:00 AM - 09:00 AM</b> |        |        |       |            |        |       |       |           |        |        |       |           |       |        |       | <b>TOTAL</b> |   |   |   |       |
| <b>PEAK HR VOL :</b>    | 0                          | 26     | 3      | 0     | 17         | 35     | 1     | 1     | 1         | 1      | 1      | 0     | 9         | 1     | 13     | 0     | 109          |   |   |   |       |
| <b>PEAK HR FACTOR :</b> | 0.000                      | 0.722  | 0.375  | 0.000 | 0.708      | 0.547  | 0.250 | 0.250 | 0.250     | 0.250  | 0.250  | 0.000 | 0.563     | 0.250 | 0.650  | 0.000 | 0.852        |   |   |   |       |
|                         | 0.806                      |        |        |       | 0.711      |        |       |       | 0.750     |        |        |       | 0.719     |       |        |       |              |   |   |   |       |

| NS/EW Streets:          | Front Ave                  |        |        |       | Front Ave  |        |       |       | 8th St    |        |        |       | 8th St    |       |        |       | TOTAL        |  |  |  |    |
|-------------------------|----------------------------|--------|--------|-------|------------|--------|-------|-------|-----------|--------|--------|-------|-----------|-------|--------|-------|--------------|--|--|--|----|
|                         | NORTHBOUND                 |        |        |       | SOUTHBOUND |        |       |       | EASTBOUND |        |        |       | WESTBOUND |       |        |       |              |  |  |  |    |
| PM                      | 0                          | 1      | 0      | 0     | 0          | 2      | 0     | 0     | 0         | 1      | 0      | 0     | 0         | 1     | 0      | 0     | TOTAL        |  |  |  |    |
|                         | NL                         | NT     | NR     | NU    | SL         | ST     | SR    | SU    | EL        | ET     | ER     | EU    | WL        | WT    | WR     | WU    |              |  |  |  |    |
| 4:00 PM                 | 0                          | 3      | 3      | 1     | 5          | 2      | 1     | 0     | 0         | 0      | 1      | 0     | 1         | 0     | 9      | 0     |              |  |  |  | 26 |
| 4:15 PM                 | 0                          | 4      | 3      | 0     | 2          | 9      | 0     | 1     | 0         | 1      | 0      | 0     | 2         | 0     | 8      | 0     |              |  |  |  | 30 |
| 4:30 PM                 | 0                          | 5      | 1      | 0     | 6          | 6      | 0     | 0     | 0         | 3      | 0      | 0     | 1         | 0     | 7      | 0     |              |  |  |  | 29 |
| 4:45 PM                 | 0                          | 10     | 0      | 0     | 2          | 4      | 0     | 0     | 0         | 1      | 0      | 0     | 1         | 0     | 14     | 0     |              |  |  |  | 32 |
| 5:00 PM                 | 0                          | 4      | 1      | 0     | 9          | 3      | 0     | 0     | 0         | 0      | 0      | 0     | 0         | 0     | 9      | 0     |              |  |  |  | 26 |
| 5:15 PM                 | 0                          | 8      | 1      | 0     | 10         | 5      | 0     | 0     | 0         | 0      | 0      | 0     | 2         | 0     | 10     | 0     |              |  |  |  | 36 |
| 5:30 PM                 | 1                          | 6      | 1      | 0     | 4          | 8      | 0     | 0     | 1         | 0      | 0      | 0     | 1         | 0     | 6      | 0     |              |  |  |  | 28 |
| 5:45 PM                 | 0                          | 4      | 1      | 0     | 3          | 5      | 0     | 1     | 0         | 0      | 0      | 0     | 2         | 0     | 7      | 0     |              |  |  |  | 23 |
| <b>TOTAL VOLUMES :</b>  | NL                         | NT     | NR     | NU    | SL         | ST     | SR    | SU    | EL        | ET     | ER     | EU    | WL        | WT    | WR     | WU    | <b>TOTAL</b> |  |  |  |    |
| <b>APPROACH %'s :</b>   | 1                          | 44     | 11     | 1     | 41         | 42     | 1     | 2     | 1         | 5      | 1      | 0     | 10        | 0     | 70     | 0     | 230          |  |  |  |    |
|                         | 1.75%                      | 77.19% | 19.30% | 1.75% | 47.67%     | 48.84% | 1.16% | 2.33% | 14.29%    | 71.43% | 14.29% | 0.00% | 12.50%    | 0.00% | 87.50% | 0.00% | 0.854        |  |  |  |    |
| <b>PEAK HR :</b>        | <b>04:30 PM - 05:30 PM</b> |        |        |       |            |        |       |       |           |        |        |       |           |       |        |       | <b>TOTAL</b> |  |  |  |    |
| <b>PEAK HR VOL :</b>    | 0                          | 27     | 3      | 0     | 27         | 18     | 0     | 0     | 0         | 4      | 0      | 0     | 4         | 0     | 40     | 0     | 123          |  |  |  |    |
| <b>PEAK HR FACTOR :</b> | 0.000                      | 0.675  | 0.750  | 0.000 | 0.675      | 0.750  | 0.000 | 0.000 | 0.000     | 0.333  | 0.000  | 0.000 | 0.500     | 0.000 | 0.714  | 0.000 | 0.854        |  |  |  |    |
|                         | 0.750                      |        |        |       | 0.750      |        |       |       | 0.333     |        |        |       | 0.733     |       |        |       |              |  |  |  |    |

# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Broadway Ave & 8th St  
**City:** Columbus  
**Control:** 2-Way Stop(EB/WB)

**Project ID:** 21-180119-002  
**Date:** 5/10/2021

## Data - Total

| NS/EW Streets:          | Broadway Ave        |        |        |       | Broadway Ave |        |        |       | 8th St    |        |       |       | 8th St    |        |        |       |              |    |    |
|-------------------------|---------------------|--------|--------|-------|--------------|--------|--------|-------|-----------|--------|-------|-------|-----------|--------|--------|-------|--------------|----|----|
| AM                      | NORTHBOUND          |        |        |       | SOUTHBOUND   |        |        |       | EASTBOUND |        |       |       | WESTBOUND |        |        |       | TOTAL        |    |    |
|                         | NL                  | NT     | NR     | NU    | SL           | ST     | SR     | SU    | EL        | ET     | ER    | EU    | WL        | WT     | WR     | WU    |              |    |    |
| 7:00 AM                 | 0                   | 0      | 0      | 0     | 0            | 1      | 0      | 0     | 0         | 0      | 5     | 0     | 0         | 0      | 0      | 0     | 0            | 6  |    |
| 7:15 AM                 | 0                   | 0      | 1      | 0     | 1            | 0      | 0      | 0     | 0         | 0      | 11    | 0     | 0         | 0      | 0      | 2     | 1            | 0  | 16 |
| 7:30 AM                 | 0                   | 0      | 2      | 0     | 0            | 0      | 0      | 0     | 0         | 0      | 4     | 0     | 0         | 1      | 6      | 0     | 0            | 13 |    |
| 7:45 AM                 | 1                   | 0      | 0      | 0     | 0            | 2      | 1      | 0     | 0         | 0      | 5     | 0     | 0         | 1      | 6      | 1     | 0            | 17 |    |
| 8:00 AM                 | 0                   | 0      | 0      | 0     | 0            | 1      | 1      | 0     | 0         | 1      | 7     | 0     | 0         | 0      | 9      | 3     | 0            | 22 |    |
| 8:15 AM                 | 0                   | 2      | 0      | 0     | 0            | 2      | 5      | 0     | 0         | 1      | 6     | 0     | 0         | 1      | 14     | 0     | 0            | 31 |    |
| 8:30 AM                 | 0                   | 0      | 1      | 0     | 1            | 2      | 0      | 0     | 0         | 0      | 3     | 0     | 0         | 1      | 8      | 1     | 0            | 17 |    |
| 8:45 AM                 | 0                   | 4      | 0      | 0     | 0            | 2      | 1      | 0     | 0         | 0      | 4     | 0     | 0         | 1      | 8      | 1     | 0            | 21 |    |
| <b>TOTAL VOLUMES :</b>  | NL                  | NT     | NR     | NU    | SL           | ST     | SR     | SU    | EL        | ET     | ER    | EU    | WL        | WT     | WR     | WU    | <b>TOTAL</b> |    |    |
| <b>APPROACH %'s :</b>   | 1                   | 6      | 4      | 0     | 2            | 10     | 8      | 0     | 2         | 45     | 0     | 0     | 5         | 53     | 7      | 0     | 143          |    |    |
|                         | 9.09%               | 54.55% | 36.36% | 0.00% | 10.00%       | 50.00% | 40.00% | 0.00% | 4.26%     | 95.74% | 0.00% | 0.00% | 7.69%     | 81.54% | 10.77% | 0.00% |              |    |    |
| <b>PEAK HR :</b>        | 08:00 AM - 09:00 AM |        |        |       |              |        |        |       |           |        |       |       |           |        |        |       | <b>TOTAL</b> |    |    |
| <b>PEAK HR VOL :</b>    | 0                   | 6      | 1      | 0     | 1            | 7      | 7      | 0     | 2         | 20     | 0     | 0     | 3         | 39     | 5      | 0     | 91           |    |    |
| <b>PEAK HR FACTOR :</b> | 0.000               | 0.375  | 0.250  | 0.000 | 0.250        | 0.875  | 0.350  | 0.000 | 0.500     | 0.714  | 0.000 | 0.000 | 0.750     | 0.696  | 0.417  | 0.000 | 0.734        |    |    |
|                         | 0.438               |        |        |       | 0.536        |        |        |       | 0.688     |        |       |       | 0.783     |        |        |       |              |    |    |

| NS/EW Streets:          | Broadway Ave        |        |        |       | Broadway Ave |        |        |       | 8th St    |        |       |       | 8th St    |        |        |       |              |
|-------------------------|---------------------|--------|--------|-------|--------------|--------|--------|-------|-----------|--------|-------|-------|-----------|--------|--------|-------|--------------|
| PM                      | NORTHBOUND          |        |        |       | SOUTHBOUND   |        |        |       | EASTBOUND |        |       |       | WESTBOUND |        |        |       | TOTAL        |
|                         | NL                  | NT     | NR     | NU    | SL           | ST     | SR     | SU    | EL        | ET     | ER    | EU    | WL        | WT     | WR     | WU    |              |
| 4:00 PM                 | 0                   | 4      | 2      | 1     | 6            | 5      | 1      | 1     | 0         | 9      | 0     | 0     | 1         | 11     | 3      | 0     | 44           |
| 4:15 PM                 | 0                   | 3      | 1      | 0     | 1            | 2      | 1      | 0     | 0         | 10     | 1     | 0     | 0         | 14     | 1      | 0     | 34           |
| 4:30 PM                 | 0                   | 3      | 2      | 0     | 0            | 2      | 0      | 0     | 1         | 10     | 0     | 0     | 0         | 9      | 4      | 0     | 31           |
| 4:45 PM                 | 1                   | 2      | 1      | 0     | 0            | 3      | 1      | 0     | 0         | 6      | 0     | 0     | 2         | 18     | 0      | 0     | 34           |
| 5:00 PM                 | 0                   | 0      | 2      | 0     | 4            | 1      | 2      | 0     | 0         | 13     | 0     | 0     | 1         | 19     | 2      | 0     | 44           |
| 5:15 PM                 | 0                   | 2      | 0      | 0     | 0            | 6      | 2      | 0     | 0         | 9      | 2     | 0     | 1         | 21     | 0      | 0     | 43           |
| 5:30 PM                 | 0                   | 2      | 1      | 0     | 0            | 2      | 1      | 0     | 3         | 8      | 2     | 0     | 2         | 8      | 0      | 0     | 29           |
| 5:45 PM                 | 1                   | 3      | 0      | 0     | 1            | 4      | 1      | 0     | 0         | 1      | 2     | 0     | 4         | 6      | 5      | 0     | 28           |
| <b>TOTAL VOLUMES :</b>  | NL                  | NT     | NR     | NU    | SL           | ST     | SR     | SU    | EL        | ET     | ER    | EU    | WL        | WT     | WR     | WU    | <b>TOTAL</b> |
| <b>APPROACH %'s :</b>   | 2                   | 19     | 9      | 1     | 12           | 25     | 9      | 1     | 4         | 66     | 7     | 0     | 11        | 106    | 15     | 0     | 287          |
|                         | 6.45%               | 61.29% | 29.03% | 3.23% | 25.53%       | 53.19% | 19.15% | 2.13% | 5.19%     | 85.71% | 9.09% | 0.00% | 8.33%     | 80.30% | 11.36% | 0.00% |              |
| <b>PEAK HR :</b>        | 04:30 PM - 05:30 PM |        |        |       |              |        |        |       |           |        |       |       |           |        |        |       | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 1                   | 7      | 5      | 0     | 4            | 12     | 5      | 0     | 1         | 38     | 2     | 0     | 4         | 67     | 6      | 0     | 152          |
| <b>PEAK HR FACTOR :</b> | 0.250               | 0.583  | 0.625  | 0.000 | 0.250        | 0.500  | 0.625  | 0.000 | 0.250     | 0.731  | 0.250 | 0.000 | 0.500     | 0.798  | 0.375  | 0.000 | 0.864        |
|                         | 0.650               |        |        |       | 0.656        |        |        |       | 0.788     |        |       |       | 0.875     |        |        |       |              |

# National Data & Surveying Services Intersection Turning Movement Count

Location: 1st Ave & 8th St  
 City: Columbus  
 Control: 2-Way Stop(NB/SB)

Project ID: 21-180119-003  
 Date: 5/10/2021

## Data - Total

| NS/EW Streets:          | 1st Ave                    |        |        |       | 1st Ave    |        |        |       | 8th St    |        |       |       | 8th St    |        |        |       |              |
|-------------------------|----------------------------|--------|--------|-------|------------|--------|--------|-------|-----------|--------|-------|-------|-----------|--------|--------|-------|--------------|
| AM                      | NORTHBOUND                 |        |        |       | SOUTHBOUND |        |        |       | EASTBOUND |        |       |       | WESTBOUND |        |        |       |              |
|                         | NL                         | NT     | NR     | NU    | SL         | ST     | SR     | SU    | EL        | ET     | ER    | EU    | WL        | WT     | WR     | WU    | TOTAL        |
| 7:00 AM                 | 0                          | 1      | 0      | 0     | 0          | 1      | 0      | 0     | 0         | 1      | 0     | 0     | 0         | 1      | 0      | 0     | 9            |
| 7:15 AM                 | 0                          | 1      | 1      | 0     | 0          | 0      | 0      | 0     | 1         | 4      | 0     | 0     | 2         | 0      | 1      | 0     | 20           |
| 7:30 AM                 | 1                          | 3      | 2      | 0     | 0          | 3      | 0      | 0     | 0         | 10     | 1     | 0     | 1         | 3      | 3      | 0     | 27           |
| 7:45 AM                 | 0                          | 5      | 0      | 0     | 0          | 2      | 2      | 0     | 0         | 7      | 0     | 0     | 2         | 7      | 2      | 0     | 26           |
| 8:00 AM                 | 0                          | 3      | 3      | 0     | 0          | 1      | 0      | 0     | 0         | 6      | 0     | 0     | 1         | 6      | 4      | 0     | 29           |
| 8:15 AM                 | 0                          | 2      | 3      | 0     | 1          | 2      | 0      | 0     | 0         | 5      | 0     | 0     | 2         | 11     | 4      | 0     | 31           |
| 8:30 AM                 | 0                          | 5      | 2      | 0     | 1          | 0      | 0      | 0     | 0         | 7      | 0     | 0     | 1         | 14     | 1      | 0     | 30           |
| 8:45 AM                 | 0                          | 2      | 4      | 0     | 1          | 0      | 0      | 0     | 0         | 5      | 1     | 0     | 2         | 11     | 3      | 0     | 27           |
| <b>TOTAL VOLUMES :</b>  | NL                         | NT     | NR     | NU    | SL         | ST     | SR     | SU    | EL        | ET     | ER    | EU    | WL        | WT     | WR     | WU    | TOTAL        |
| <b>APPROACH %'s :</b>   | 1                          | 22     | 15     | 0     | 3          | 10     | 2      | 0     | 1         | 48     | 2     | 0     | 13        | 63     | 19     | 0     | 199          |
|                         | 2.63%                      | 57.89% | 39.47% | 0.00% | 20.00%     | 66.67% | 13.33% | 0.00% | 1.96%     | 94.12% | 3.92% | 0.00% | 13.68%    | 66.32% | 20.00% | 0.00% |              |
| <b>PEAK HR :</b>        | <b>08:00 AM - 09:00 AM</b> |        |        |       |            |        |        |       |           |        |       |       |           |        |        |       | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 0                          | 12     | 12     | 0     | 3          | 5      | 0      | 0     | 0         | 21     | 1     | 0     | 7         | 47     | 9      | 0     | 117          |
| <b>PEAK HR FACTOR :</b> | 0.000                      | 0.600  | 0.750  | 0.000 | 0.750      | 0.625  | 0.000  | 0.000 | 0.000     | 0.750  | 0.250 | 0.000 | 0.875     | 0.839  | 0.563  | 0.000 | 0.944        |
|                         | 0.857                      |        |        |       | 0.667      |        |        |       | 0.786     |        |       |       | 0.926     |        |        |       |              |
| PM                      | NORTHBOUND                 |        |        |       | SOUTHBOUND |        |        |       | EASTBOUND |        |       |       | WESTBOUND |        |        |       |              |
|                         | NL                         | NT     | NR     | NU    | SL         | ST     | SR     | SU    | EL        | ET     | ER    | EU    | WL        | WT     | WR     | WU    | TOTAL        |
| 4:00 PM                 | 0                          | 3      | 1      | 0     | 0          | 1      | 1      | 0     | 0         | 13     | 0     | 0     | 2         | 19     | 0      | 0     | 41           |
| 4:15 PM                 | 0                          | 4      | 0      | 0     | 2          | 5      | 1      | 0     | 1         | 12     | 1     | 0     | 1         | 9      | 1      | 0     | 37           |
| 4:30 PM                 | 1                          | 2      | 2      | 0     | 2          | 4      | 0      | 0     | 0         | 9      | 0     | 0     | 2         | 15     | 2      | 0     | 39           |
| 4:45 PM                 | 1                          | 3      | 1      | 0     | 2          | 1      | 1      | 0     | 2         | 8      | 1     | 0     | 2         | 14     | 2      | 0     | 38           |
| 5:00 PM                 | 0                          | 3      | 2      | 0     | 2          | 13     | 0      | 0     | 0         | 17     | 1     | 0     | 2         | 21     | 1      | 0     | 62           |
| 5:15 PM                 | 1                          | 3      | 2      | 0     | 1          | 2      | 2      | 0     | 0         | 8      | 0     | 0     | 2         | 14     | 0      | 1     | 36           |
| 5:30 PM                 | 0                          | 2      | 3      | 0     | 0          | 5      | 0      | 0     | 2         | 9      | 0     | 0     | 4         | 15     | 0      | 0     | 40           |
| 5:45 PM                 | 0                          | 3      | 1      | 0     | 0          | 5      | 1      | 0     | 1         | 0      | 1     | 0     | 7         | 15     | 1      | 1     | 36           |
| <b>TOTAL VOLUMES :</b>  | NL                         | NT     | NR     | NU    | SL         | ST     | SR     | SU    | EL        | ET     | ER    | EU    | WL        | WT     | WR     | WU    | TOTAL        |
| <b>APPROACH %'s :</b>   | 3                          | 23     | 12     | 0     | 9          | 36     | 6      | 0     | 7         | 76     | 4     | 0     | 22        | 122    | 7      | 2     | 329          |
|                         | 7.89%                      | 60.53% | 31.58% | 0.00% | 17.65%     | 70.59% | 11.76% | 0.00% | 8.05%     | 87.36% | 4.60% | 0.00% | 14.38%    | 79.74% | 4.58%  | 1.31% |              |
| <b>PEAK HR :</b>        | <b>04:45 PM - 05:45 PM</b> |        |        |       |            |        |        |       |           |        |       |       |           |        |        |       | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 2                          | 11     | 8      | 0     | 5          | 21     | 3      | 0     | 4         | 42     | 2     | 0     | 10        | 64     | 3      | 1     | 176          |
| <b>PEAK HR FACTOR :</b> | 0.500                      | 0.917  | 0.667  | 0.000 | 0.625      | 0.404  | 0.375  | 0.000 | 0.500     | 0.618  | 0.500 | 0.000 | 0.625     | 0.762  | 0.375  | 0.250 | 0.710        |
|                         | 0.875                      |        |        |       | 0.483      |        |        |       | 0.667     |        |       |       | 0.813     |        |        |       |              |

# National Data & Surveying Services Intersection Turning Movement Count

Location: 2nd Ave & 8th St  
 City: Columbus  
 Control: 2-Way Stop(NB/SB)

Project ID: 21-180119-004  
 Date: 5/10/2021

## Data - Total

| NS/EW Streets:          | 2nd Ave                    |        |        |       | 2nd Ave    |        |        |       | 8th St    |        |       |       | 8th St    |        |        |       | TOTAL        |   |   |   |       |
|-------------------------|----------------------------|--------|--------|-------|------------|--------|--------|-------|-----------|--------|-------|-------|-----------|--------|--------|-------|--------------|---|---|---|-------|
|                         | NORTHBOUND                 |        |        |       | SOUTHBOUND |        |        |       | EASTBOUND |        |       |       | WESTBOUND |        |        |       |              |   |   |   |       |
| AM                      | 0                          | 1      | 0      | 0     | 0          | 1      | 0      | 0     | 0         | 1      | 0     | 0     | 0         | 1      | 0      | 0     | 0            | 1 | 0 | 0 | TOTAL |
|                         | NL                         | NT     | NR     | NU    | SL         | ST     | SR     | SU    | EL        | ET     | ER    | EU    | WL        | WT     | WR     | WU    |              |   |   |   |       |
| 7:00 AM                 | 0                          | 1      | 0      | 0     | 1          | 1      | 0      | 0     | 0         | 3      | 1     | 0     | 0         | 1      | 1      | 0     |              |   |   |   | 9     |
| 7:15 AM                 | 1                          | 5      | 2      | 0     | 0          | 1      | 0      | 0     | 1         | 10     | 0     | 0     | 0         | 6      | 0      | 0     |              |   |   |   | 26    |
| 7:30 AM                 | 1                          | 4      | 2      | 0     | 2          | 3      | 1      | 0     | 1         | 8      | 0     | 0     | 1         | 9      | 3      | 0     |              |   |   |   | 35    |
| 7:45 AM                 | 1                          | 3      | 4      | 0     | 0          | 2      | 2      | 0     | 0         | 6      | 0     | 0     | 1         | 8      | 6      | 0     |              |   |   |   | 33    |
| 8:00 AM                 | 0                          | 3      | 1      | 0     | 2          | 6      | 1      | 0     | 1         | 7      | 0     | 0     | 1         | 16     | 2      | 0     |              |   |   |   | 40    |
| 8:15 AM                 | 1                          | 6      | 2      | 0     | 1          | 2      | 4      | 0     | 1         | 8      | 0     | 0     | 0         | 13     | 2      | 0     |              |   |   |   | 40    |
| 8:30 AM                 | 2                          | 3      | 1      | 0     | 0          | 6      | 0      | 0     | 0         | 5      | 0     | 0     | 2         | 12     | 7      | 0     |              |   |   |   | 38    |
| 8:45 AM                 | 0                          | 5      | 3      | 0     | 1          | 7      | 2      | 0     | 1         | 13     | 0     | 0     | 2         | 14     | 2      | 0     |              |   |   |   | 50    |
| <b>TOTAL VOLUMES :</b>  | NL                         | NT     | NR     | NU    | SL         | ST     | SR     | SU    | EL        | ET     | ER    | EU    | WL        | WT     | WR     | WU    | <b>TOTAL</b> |   |   |   |       |
| <b>APPROACH %'s :</b>   | 6                          | 30     | 15     | 0     | 7          | 28     | 10     | 0     | 5         | 60     | 1     | 0     | 7         | 79     | 23     | 0     | 271          |   |   |   |       |
|                         | 11.76%                     | 58.82% | 29.41% | 0.00% | 15.56%     | 62.22% | 22.22% | 0.00% | 7.58%     | 90.91% | 1.52% | 0.00% | 6.42%     | 72.48% | 21.10% | 0.00% |              |   |   |   |       |
| <b>PEAK HR :</b>        | <b>08:00 AM - 09:00 AM</b> |        |        |       |            |        |        |       |           |        |       |       |           |        |        |       | <b>TOTAL</b> |   |   |   |       |
| <b>PEAK HR VOL :</b>    | 3                          | 17     | 7      | 0     | 4          | 21     | 7      | 0     | 3         | 33     | 0     | 0     | 5         | 55     | 13     | 0     | 168          |   |   |   |       |
| <b>PEAK HR FACTOR :</b> | 0.375                      | 0.708  | 0.583  | 0.000 | 0.500      | 0.750  | 0.438  | 0.000 | 0.750     | 0.635  | 0.000 | 0.000 | 0.625     | 0.859  | 0.464  | 0.000 | 0.840        |   |   |   |       |
|                         | 0.750                      |        |        |       | 0.800      |        |        |       | 0.643     |        |       |       | 0.869     |        |        |       |              |   |   |   |       |

| NS/EW Streets:          | 2nd Ave                    |        |        |       | 2nd Ave    |        |        |       | 8th St    |        |       |       | 8th St    |        |       |       | TOTAL        |  |  |  |  |
|-------------------------|----------------------------|--------|--------|-------|------------|--------|--------|-------|-----------|--------|-------|-------|-----------|--------|-------|-------|--------------|--|--|--|--|
|                         | NORTHBOUND                 |        |        |       | SOUTHBOUND |        |        |       | EASTBOUND |        |       |       | WESTBOUND |        |       |       |              |  |  |  |  |
| PM                      | 0                          | 1      | 0      | 0     | 0          | 1      | 0      | 0     | 0         | 1      | 0     | 0     | 0         | 1      | 0     | 0     | TOTAL        |  |  |  |  |
|                         | NL                         | NT     | NR     | NU    | SL         | ST     | SR     | SU    | EL        | ET     | ER    | EU    | WL        | WT     | WR    | WU    |              |  |  |  |  |
| 4:00 PM                 | 0                          | 5      | 4      | 0     | 4          | 5      | 1      | 0     | 5         | 13     | 0     | 0     | 2         | 12     | 1     | 0     | 52           |  |  |  |  |
| 4:15 PM                 | 0                          | 8      | 3      | 0     | 2          | 7      | 4      | 0     | 2         | 9      | 0     | 0     | 2         | 12     | 1     | 0     | 50           |  |  |  |  |
| 4:30 PM                 | 0                          | 4      | 2      | 0     | 3          | 8      | 1      | 0     | 3         | 12     | 1     | 0     | 6         | 15     | 0     | 0     | 55           |  |  |  |  |
| 4:45 PM                 | 1                          | 5      | 3      | 0     | 0          | 11     | 3      | 0     | 1         | 9      | 1     | 0     | 3         | 18     | 3     | 0     | 58           |  |  |  |  |
| 5:00 PM                 | 0                          | 7      | 2      | 0     | 6          | 14     | 3      | 0     | 0         | 19     | 1     | 0     | 3         | 16     | 3     | 0     | 74           |  |  |  |  |
| 5:15 PM                 | 0                          | 8      | 3      | 0     | 3          | 11     | 6      | 0     | 3         | 9      | 1     | 0     | 2         | 20     | 1     | 0     | 67           |  |  |  |  |
| 5:30 PM                 | 0                          | 7      | 3      | 0     | 4          | 4      | 2      | 0     | 0         | 9      | 2     | 0     | 3         | 14     | 1     | 0     | 49           |  |  |  |  |
| 5:45 PM                 | 1                          | 9      | 3      | 0     | 4          | 12     | 3      | 0     | 0         | 3      | 0     | 0     | 1         | 16     | 0     | 0     | 52           |  |  |  |  |
| <b>TOTAL VOLUMES :</b>  | NL                         | NT     | NR     | NU    | SL         | ST     | SR     | SU    | EL        | ET     | ER    | EU    | WL        | WT     | WR    | WU    | <b>TOTAL</b> |  |  |  |  |
| <b>APPROACH %'s :</b>   | 2                          | 53     | 23     | 0     | 26         | 72     | 23     | 0     | 14        | 83     | 6     | 0     | 22        | 123    | 10    | 0     | 457          |  |  |  |  |
|                         | 2.56%                      | 67.95% | 29.49% | 0.00% | 21.49%     | 59.50% | 19.01% | 0.00% | 13.59%    | 80.58% | 5.83% | 0.00% | 14.19%    | 79.35% | 6.45% | 0.00% |              |  |  |  |  |
| <b>PEAK HR :</b>        | <b>04:30 PM - 05:30 PM</b> |        |        |       |            |        |        |       |           |        |       |       |           |        |       |       | <b>TOTAL</b> |  |  |  |  |
| <b>PEAK HR VOL :</b>    | 1                          | 24     | 10     | 0     | 12         | 44     | 13     | 0     | 7         | 49     | 4     | 0     | 14        | 69     | 7     | 0     | 254          |  |  |  |  |
| <b>PEAK HR FACTOR :</b> | 0.250                      | 0.750  | 0.833  | 0.000 | 0.500      | 0.786  | 0.542  | 0.000 | 0.583     | 0.645  | 1.000 | 0.000 | 0.583     | 0.863  | 0.583 | 0.000 | 0.858        |  |  |  |  |
|                         | 0.795                      |        |        |       | 0.750      |        |        |       | 0.750     |        |       |       | 0.938     |        |       |       |              |  |  |  |  |

# National Data & Surveying Services Intersection Turning Movement Count

Location: 3rd Ave & 8th St  
 City: Columbus  
 Control: 2-Way Stop(NB/SB)

Project ID: 21-180119-005  
 Date: 5/10/2021

## Data - Cars

| NS/EW Streets:          | 3rd Ave             |        |        |       | 3rd Ave    |        |        |       | 8th St    |        |       |       | 8th St    |        |       |       |              |
|-------------------------|---------------------|--------|--------|-------|------------|--------|--------|-------|-----------|--------|-------|-------|-----------|--------|-------|-------|--------------|
| AM                      | NORTHBOUND          |        |        |       | SOUTHBOUND |        |        |       | EASTBOUND |        |       |       | WESTBOUND |        |       |       |              |
|                         | NL                  | NT     | NR     | NU    | SL         | ST     | SR     | SU    | EL        | ET     | ER    | EU    | WL        | WT     | WR    | WU    | TOTAL        |
| 7:00 AM                 | 0                   | 1      | 0      | 0     | 0          | 1      | 0      | 0     | 0         | 1      | 0     | 0     | 0         | 1      | 0     | 0     | 14           |
| 7:15 AM                 | 1                   | 2      | 3      | 0     | 1          | 2      | 0      | 0     | 0         | 12     | 0     | 0     | 1         | 6      | 0     | 0     | 27           |
| 7:30 AM                 | 2                   | 5      | 2      | 0     | 0          | 2      | 0      | 0     | 0         | 12     | 0     | 0     | 1         | 10     | 0     | 0     | 34           |
| 7:45 AM                 | 3                   | 6      | 3      | 0     | 0          | 3      | 1      | 0     | 1         | 9      | 0     | 0     | 1         | 12     | 0     | 0     | 39           |
| 8:00 AM                 | 1                   | 10     | 7      | 0     | 1          | 1      | 0      | 0     | 1         | 8      | 0     | 0     | 1         | 15     | 3     | 0     | 48           |
| 8:15 AM                 | 2                   | 16     | 7      | 0     | 1          | 2      | 3      | 0     | 0         | 7      | 0     | 0     | 1         | 16     | 1     | 0     | 56           |
| 8:30 AM                 | 0                   | 8      | 4      | 0     | 1          | 4      | 0      | 0     | 1         | 7      | 2     | 0     | 0         | 15     | 0     | 0     | 42           |
| 8:45 AM                 | 0                   | 7      | 5      | 0     | 0          | 1      | 0      | 0     | 2         | 9      | 0     | 0     | 2         | 15     | 2     | 0     | 43           |
| <b>TOTAL VOLUMES :</b>  | NL                  | NT     | NR     | NU    | SL         | ST     | SR     | SU    | EL        | ET     | ER    | EU    | WL        | WT     | WR    | WU    | TOTAL        |
| <b>APPROACH %'s :</b>   | 9                   | 60     | 31     | 0     | 4          | 17     | 4      | 0     | 5         | 67     | 2     | 0     | 7         | 90     | 6     | 1     | 303          |
|                         | 9.00%               | 60.00% | 31.00% | 0.00% | 16.00%     | 68.00% | 16.00% | 0.00% | 6.76%     | 90.54% | 2.70% | 0.00% | 6.73%     | 86.54% | 5.77% | 0.96% |              |
| <b>PEAK HR :</b>        | 08:00 AM - 09:00 AM |        |        |       |            |        |        |       |           |        |       |       |           |        |       |       | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 3                   | 41     | 23     | 0     | 3          | 8      | 3      | 0     | 4         | 31     | 2     | 0     | 4         | 61     | 6     | 0     | 189          |
| <b>PEAK HR FACTOR :</b> | 0.375               | 0.641  | 0.821  | 0.000 | 0.750      | 0.500  | 0.250  | 0.000 | 0.500     | 0.861  | 0.250 | 0.000 | 0.500     | 0.953  | 0.500 | 0.000 | 0.844        |
|                         | 0.670               |        |        |       | 0.583      |        |        |       | 0.841     |        |       |       | 0.934     |        |       |       |              |
| PM                      | NORTHBOUND          |        |        |       | SOUTHBOUND |        |        |       | EASTBOUND |        |       |       | WESTBOUND |        |       |       |              |
|                         | NL                  | NT     | NR     | NU    | SL         | ST     | SR     | SU    | EL        | ET     | ER    | EU    | WL        | WT     | WR    | WU    | TOTAL        |
| 4:00 PM                 | 1                   | 3      | 4      | 0     | 2          | 4      | 1      | 0     | 2         | 15     | 2     | 0     | 0         | 13     | 3     | 0     | 50           |
| 4:15 PM                 | 1                   | 5      | 2      | 0     | 0          | 4      | 1      | 0     | 1         | 12     | 1     | 0     | 1         | 14     | 1     | 0     | 43           |
| 4:30 PM                 | 0                   | 5      | 3      | 0     | 1          | 4      | 1      | 0     | 0         | 15     | 1     | 0     | 2         | 18     | 0     | 0     | 50           |
| 4:45 PM                 | 0                   | 3      | 2      | 0     | 1          | 4      | 2      | 0     | 3         | 8      | 1     | 0     | 3         | 22     | 2     | 0     | 51           |
| 5:00 PM                 | 4                   | 6      | 2      | 0     | 1          | 5      | 2      | 0     | 3         | 22     | 2     | 0     | 4         | 15     | 4     | 0     | 70           |
| 5:15 PM                 | 0                   | 7      | 1      | 0     | 1          | 3      | 1      | 0     | 2         | 11     | 0     | 0     | 1         | 24     | 0     | 0     | 51           |
| 5:30 PM                 | 1                   | 2      | 2      | 0     | 1          | 5      | 0      | 1     | 0         | 15     | 1     | 0     | 2         | 14     | 1     | 0     | 45           |
| 5:45 PM                 | 0                   | 10     | 0      | 0     | 1          | 3      | 2      | 0     | 0         | 10     | 0     | 0     | 2         | 15     | 0     | 0     | 43           |
| <b>TOTAL VOLUMES :</b>  | NL                  | NT     | NR     | NU    | SL         | ST     | SR     | SU    | EL        | ET     | ER    | EU    | WL        | WT     | WR    | WU    | TOTAL        |
| <b>APPROACH %'s :</b>   | 7                   | 41     | 16     | 0     | 8          | 32     | 10     | 1     | 11        | 108    | 8     | 0     | 15        | 135    | 11    | 0     | 403          |
|                         | 10.94%              | 64.06% | 25.00% | 0.00% | 15.69%     | 62.75% | 19.61% | 1.96% | 8.66%     | 85.04% | 6.30% | 0.00% | 9.32%     | 83.85% | 6.83% | 0.00% |              |
| <b>PEAK HR :</b>        | 04:30 PM - 05:30 PM |        |        |       |            |        |        |       |           |        |       |       |           |        |       |       | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 4                   | 21     | 8      | 0     | 4          | 16     | 6      | 0     | 8         | 56     | 4     | 0     | 10        | 79     | 6     | 0     | 222          |
| <b>PEAK HR FACTOR :</b> | 0.250               | 0.750  | 0.667  | 0.000 | 1.000      | 0.800  | 0.750  | 0.000 | 0.667     | 0.636  | 0.500 | 0.000 | 0.625     | 0.823  | 0.375 | 0.000 | 0.793        |
|                         | 0.688               |        |        |       | 0.813      |        |        |       | 0.630     |        |       |       | 0.880     |        |       |       |              |

# National Data & Surveying Services Intersection Turning Movement Count

Location: SR 1/US 27/Veterans Pkwy & 8th St  
 City: Columbus  
 Control: Signalized

Project ID: 21-180119-006  
 Date: 5/10/2021

## Data - Total

| NS/EW Streets:          | SR 1/US 27/Veterans Pkwy   |         |         |         | SR 1/US 27/Veterans Pkwy |         |         |         | 8th St    |         |         |         | 8th St    |         |         |         |              |
|-------------------------|----------------------------|---------|---------|---------|--------------------------|---------|---------|---------|-----------|---------|---------|---------|-----------|---------|---------|---------|--------------|
| AM                      | NORTHBOUND                 |         |         |         | SOUTHBOUND               |         |         |         | EASTBOUND |         |         |         | WESTBOUND |         |         |         | TOTAL        |
|                         | 1<br>NL                    | 2<br>NT | 0<br>NR | 0<br>NU | 1<br>SL                  | 2<br>ST | 0<br>SR | 0<br>SU | 1<br>EL   | 1<br>ET | 0<br>ER | 0<br>EU | 1<br>WL   | 1<br>WT | 0<br>WR | 0<br>WU |              |
| 7:00 AM                 | 1                          | 54      | 3       | 0       | 5                        | 106     | 0       | 0       | 1         | 3       | 1       | 0       | 1         | 3       | 9       | 0       | 187          |
| 7:15 AM                 | 1                          | 92      | 1       | 0       | 6                        | 77      | 3       | 0       | 3         | 3       | 4       | 0       | 3         | 2       | 5       | 0       | 200          |
| 7:30 AM                 | 1                          | 77      | 3       | 0       | 12                       | 119     | 3       | 0       | 6         | 6       | 8       | 0       | 4         | 10      | 6       | 0       | 255          |
| 7:45 AM                 | 5                          | 94      | 0       | 0       | 16                       | 91      | 3       | 0       | 5         | 6       | 3       | 0       | 5         | 3       | 8       | 0       | 239          |
| 8:00 AM                 | 4                          | 107     | 1       | 0       | 13                       | 82      | 4       | 0       | 3         | 3       | 9       | 0       | 4         | 12      | 6       | 0       | 248          |
| 8:15 AM                 | 4                          | 99      | 5       | 0       | 15                       | 109     | 5       | 0       | 3         | 7       | 1       | 0       | 4         | 9       | 9       | 0       | 270          |
| 8:30 AM                 | 8                          | 114     | 4       | 0       | 6                        | 109     | 8       | 0       | 7         | 8       | 1       | 0       | 6         | 6       | 4       | 0       | 281          |
| 8:45 AM                 | 3                          | 96      | 2       | 1       | 9                        | 112     | 6       | 0       | 5         | 9       | 4       | 0       | 4         | 6       | 9       | 0       | 266          |
| <b>TOTAL VOLUMES :</b>  | NL                         | NT      | NR      | NU      | SL                       | ST      | SR      | SU      | EL        | ET      | ER      | EU      | WL        | WT      | WR      | WU      | TOTAL        |
| <b>APPROACH %'s :</b>   | 27                         | 733     | 19      | 1       | 82                       | 805     | 32      | 0       | 33        | 45      | 31      | 0       | 31        | 51      | 56      | 0       | 1946         |
|                         | 3.46%                      | 93.97%  | 2.44%   | 0.13%   | 8.92%                    | 87.60%  | 3.48%   | 0.00%   | 30.28%    | 41.28%  | 28.44%  | 0.00%   | 22.46%    | 36.96%  | 40.58%  | 0.00%   |              |
| <b>PEAK HR :</b>        | <b>08:00 AM - 09:00 AM</b> |         |         |         |                          |         |         |         |           |         |         |         |           |         |         |         | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 19                         | 416     | 12      | 1       | 43                       | 412     | 23      | 0       | 18        | 27      | 15      | 0       | 18        | 33      | 28      | 0       | 1065         |
| <b>PEAK HR FACTOR :</b> | 0.594                      | 0.912   | 0.600   | 0.250   | 0.717                    | 0.920   | 0.719   | 0.000   | 0.643     | 0.750   | 0.417   | 0.000   | 0.750     | 0.688   | 0.778   | 0.000   | 0.948        |
|                         | 0.889                      |         |         |         | 0.926                    |         |         |         | 0.833     |         |         |         | 0.898     |         |         |         |              |
| PM                      | NORTHBOUND                 |         |         |         | SOUTHBOUND               |         |         |         | EASTBOUND |         |         |         | WESTBOUND |         |         |         | TOTAL        |
|                         | 1<br>NL                    | 2<br>NT | 0<br>NR | 0<br>NU | 1<br>SL                  | 2<br>ST | 0<br>SR | 0<br>SU | 1<br>EL   | 1<br>ET | 0<br>ER | 0<br>EU | 1<br>WL   | 1<br>WT | 0<br>WR | 0<br>WU |              |
| 4:00 PM                 | 4                          | 136     | 3       | 0       | 11                       | 151     | 7       | 0       | 6         | 8       | 1       | 0       | 5         | 6       | 19      | 0       | 357          |
| 4:15 PM                 | 3                          | 130     | 5       | 2       | 11                       | 115     | 10      | 0       | 5         | 15      | 2       | 0       | 8         | 8       | 9       | 0       | 323          |
| 4:30 PM                 | 4                          | 132     | 4       | 0       | 10                       | 140     | 4       | 0       | 5         | 8       | 1       | 0       | 9         | 12      | 15      | 0       | 344          |
| 4:45 PM                 | 9                          | 148     | 3       | 0       | 10                       | 125     | 4       | 0       | 4         | 4       | 8       | 0       | 5         | 10      | 16      | 0       | 346          |
| 5:00 PM                 | 7                          | 123     | 5       | 0       | 10                       | 148     | 5       | 0       | 7         | 12      | 3       | 0       | 11        | 17      | 14      | 0       | 362          |
| 5:15 PM                 | 5                          | 138     | 3       | 0       | 8                        | 189     | 4       | 0       | 11        | 5       | 1       | 0       | 11        | 11      | 8       | 0       | 394          |
| 5:30 PM                 | 6                          | 127     | 0       | 0       | 14                       | 174     | 10      | 0       | 4         | 5       | 8       | 0       | 5         | 1       | 7       | 0       | 361          |
| 5:45 PM                 | 9                          | 122     | 1       | 0       | 8                        | 127     | 9       | 0       | 1         | 11      | 3       | 0       | 10        | 1       | 2       | 0       | 304          |
| <b>TOTAL VOLUMES :</b>  | NL                         | NT      | NR      | NU      | SL                       | ST      | SR      | SU      | EL        | ET      | ER      | EU      | WL        | WT      | WR      | WU      | TOTAL        |
| <b>APPROACH %'s :</b>   | 47                         | 1056    | 24      | 2       | 82                       | 1169    | 53      | 0       | 43        | 68      | 27      | 0       | 64        | 66      | 90      | 0       | 2791         |
|                         | 4.16%                      | 93.53%  | 2.13%   | 0.18%   | 6.29%                    | 89.65%  | 4.06%   | 0.00%   | 31.16%    | 49.28%  | 19.57%  | 0.00%   | 29.09%    | 30.00%  | 40.91%  | 0.00%   |              |
| <b>PEAK HR :</b>        | <b>04:45 PM - 05:45 PM</b> |         |         |         |                          |         |         |         |           |         |         |         |           |         |         |         | <b>TOTAL</b> |
| <b>PEAK HR VOL :</b>    | 27                         | 536     | 11      | 0       | 42                       | 636     | 23      | 0       | 26        | 26      | 20      | 0       | 32        | 39      | 45      | 0       | 1463         |
| <b>PEAK HR FACTOR :</b> | 0.750                      | 0.905   | 0.550   | 0.000   | 0.750                    | 0.841   | 0.575   | 0.000   | 0.591     | 0.542   | 0.625   | 0.000   | 0.727     | 0.574   | 0.703   | 0.000   | 0.928        |
|                         | 0.897                      |         |         |         | 0.872                    |         |         |         | 0.818     |         |         |         | 0.690     |         |         |         |              |

## Appendix D TRUCK PERCENTAGE CALCULATIONS





**8th St E/O First Ave**

|          |           | Direction | Total | Class 1 | Class 2 | Class 3 | Class 4 | Class 5 | Class 6 | Class 7 | Class 8 | Class 9 | Class 10 | Class 11 | Class 12 | Class 13  | S.U. T% | Comb. T% |
|----------|-----------|-----------|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|----------|----------|----------|-----------|---------|----------|
| 11:30 AM | 5/11/2021 | EB        | 54    | 0       | 43      | 7       | 0       | 3       | 0       | 1       | 0       | 0       | 0        | 0        | 0        | 0         | 7.4%    | 0.0%     |
|          |           | WB        | 79    | 0       | 60      | 16      | 0       | 2       | 0       | 0       | 0       | 1       | 0        | 0        | 0        | 0         | 2.5%    | 1.3%     |
|          |           |           |       |         |         |         |         |         |         |         |         |         |          |          |          | AM DHV T% | 4.5%    | 0.8%     |
|          |           |           |       |         |         |         |         |         |         |         |         |         |          |          |          |           | 4.5%    | 1.0%     |
| 4:30 AM  | 5/11/2021 | EB        | 55    | 1       | 44      | 9       | 0       | 1       | 0       | 0       | 0       | 0       | 0        | 0        | 0        | 0         | 1.8%    | 0.0%     |
|          |           | WB        | 91    | 0       | 69      | 20      | 1       | 1       | 0       | 0       | 0       | 0       | 0        | 0        | 0        | 0         | 2.2%    | 0.0%     |
|          |           |           |       |         |         |         |         |         |         |         |         |         |          |          |          | PM DHV T% | 2.1%    | 0.0%     |
|          |           |           |       |         |         |         |         |         |         |         |         |         |          |          |          |           | 2.0%    | 0.0%     |
| 24-hr T  | 5/11/2021 | EB        | 615   | 4       | 493     | 103     | 0       | 9       | 2       | 3       | 0       | 1       | 0        | 0        | 0        | 0         | 2.3%    | 0.2%     |
|          |           | WB        | 827   | 1       | 675     | 135     | 1       | 12      | 2       | 0       | 0       | 1       | 0        | 0        | 0        | 0         | 1.8%    | 0.1%     |
|          |           |           |       |         |         |         |         |         |         |         |         |         |          |          |          | Daily T%  | 2.0%    | 0.1%     |
|          |           |           |       |         |         |         |         |         |         |         |         |         |          |          |          |           | 2.0%    | 0.0%     |

## Appendix E TRAFFIC VOLUME PROJECTIONS



**DHV TRAFFIC VOLUMES**

Project: 8th St Roadway Improvements  
 Client: Columbus, GA  
 Date: 6/7/2021  
 Growth Rate: 1.0%  
 AM Peak Hour: 11:30 AM

Project Number: 171007027  
 Computed by: J. Ekstedt  
 Checked by: M. Holt  
 PM Peak Hour: 4:30 PM

**Intersection 1-8th Street @ Front Avenue**

| 2021 Existing Peak Hr TMC (RAW DATA) |              |         |       |           |              |         |       |           |            |         |       |           |            |         |       |           |  |  |
|--------------------------------------|--------------|---------|-------|-----------|--------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|--|--|
|                                      | Front Avenue |         |       |           | Front Avenue |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |  |  |
| BY MOVEMENT                          | NB LT        | NB THRU | NB RT | NB U-TURN | SB LT        | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |  |  |
| 8:00 AM                              | 0            | 26      | 3     | 0         | 17           | 35      | 1     | 1         | 1          | 1       | 1     | 0         | 9          | 1       | 13    | 0         |  |  |
| Percentage                           | 0.0%         | 89.7%   | 10.3% | 0.0%      | 31.5%        | 64.8%   | 1.9%  | 1.9%      | N/A        | N/A     | N/A   | N/A       | 39.1%      | 4.3%    | 56.5% | 0.0%      |  |  |
| 4:30 PM                              | 0            | 27      | 3     | 0         | 27           | 18      | 0     | 0         | 0          | 4       | 0     | 0         | 4          | 0       | 40    | 0         |  |  |
| Percentage                           | 0.0%         | 90.0%   | 10.0% | 0.0%      | 60.0%        | 40.0%   | 0.0%  | 0.0%      | 0.0%       | 100.0%  | 0.0%  | 0.0%      | 9.1%       | 0.0%    | 90.9% | 0.0%      |  |  |
| BY APPROACH                          | IN           |         |       | OUT       |              |         | IN    |           |            | OUT     |       |           | IN         |         |       | OUT       |  |  |
| AM:                                  | 29           |         |       | 45        |              |         | 54    |           |            | 41      |       |           | 3          |         |       | 2         |  |  |
| PM:                                  | 30           |         |       | 22        |              |         | 45    |           |            | 67      |       |           | 4          |         |       | 0         |  |  |
| 4-HOUR TOTAL                         | 1            | 76      | 16    | 1         | 74           | 86      | 3     | 3         | 2          | 6       | 2     | 0         | 21         | 1       | 93    | 0         |  |  |
| Percentage                           | 1.1%         | 80.9%   | 17.0% | 1.1%      | 44.6%        | 51.8%   | 1.8%  | 1.8%      | 20.0%      | 60.0%   | 20.0% | 0.0%      | 18.3%      | 0.9%    | 80.9% | 0.0%      |  |  |

**2021 Existing Peak Hr TMC (Converted the AM Peaks to 11:30 AM Peak)**

| 2021 Existing Peak Hr TMC (Converted the AM Peaks to 11:30 AM Peak) |              |         |       |           |              |         |       |           |            |         |       |           |            |         |       |           |  |  |
|---|--------------|---------|-------|-----------|--------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|--|--|
|   | Front Avenue |         |       |           | Front Avenue |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |  |  |
| BY MOVEMENT   | NB LT        | NB THRU | NB RT | NB U-TURN | SB LT        | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |  |  |
| 11:30 AM  | 0            | 36      | 4     | 0         | 24           | 49      | 1     | 1         | 1          | 1       | 1     | 0         | 12         | 1       | 18    | 0         |  |  |
| Percentage  | 0.0%         | 124.1%  | 13.8% | 0.0%      | 44.4%        | 90.7%   | 1.9%  | 1.9%      | N/A        | N/A     | N/A   | N/A       | 38.7%      | 3.2%    | 58.1% | 0.0%      |  |  |
| 4:30 PM   | 0            | 27      | 3     | 0         | 27           | 18      | 0     | 0         | 0          | 4       | 0     | 0         | 4          | 0       | 40    | 0         |  |  |
| Percentage  | 0.0%         | 90.0%   | 10.0% | 0.0%      | 60.0%        | 40.0%   | 0.0%  | 0.0%      | 0.0%       | 100.0%  | 0.0%  | 0.0%      | 9.1%       | 0.0%    | 90.9% | 0.0%      |  |  |
| BY APPROACH   | IN           |         |       | OUT       |              |         | IN    |           |            | OUT     |       |           | IN         |         |       | OUT       |  |  |
| AM:   | 40           |         |       | 62        |              |         | 75    |           |            | 56      |       |           | 3          |         |       | 2         |  |  |
| PM:   | 30           |         |       | 22        |              |         | 45    |           |            | 67      |       |           | 4          |         |       | 0         |  |  |
| 4-HOUR TOTAL  | 1            | 76      | 16    | 1         | 74           | 86      | 3     | 3         | 2          | 6       | 2     | 0         | 21         | 1       | 93    | 0         |  |  |
| Percentage  | 1.1%         | 80.9%   | 17.0% | 1.1%      | 44.6%        | 51.8%   | 1.8%  | 1.8%      | 20.0%      | 60.0%   | 20.0% | 0.0%      | 18.3%      | 0.9%    | 80.9% | 0.0%      |  |  |

**2021 Existing Peak Hr TMC (Rounded)**

| 2021 Existing Peak Hr TMC (Rounded) |              |         |       |           |              |         |       |           |            |         |       |           |            |         |       |           |  |  |
|-------------------------------------|--------------|---------|-------|-----------|--------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|--|--|
|                                     | Front Avenue |         |       |           | Front Avenue |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |  |  |
| BY MOVEMENT                         | NB LT        | NB THRU | NB RT | NB U-TURN | SB LT        | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |  |  |
| AM:                                 | 0            | 35      | 5     | 0         | 25           | 50      | 5     | 5         | 5          | 5       | 5     | 5         | 10         | 5       | 20    | 0         |  |  |
| PM:                                 | 0            | 25      | 5     | 0         | 25           | 20      | 0     | 0         | 0          | 5       | 0     | 0         | 5          | 0       | 40    | 0         |  |  |
| BY APPROACH                         | IN           |         |       | OUT       |              |         | IN    |           |            | OUT     |       |           | IN         |         |       | OUT       |  |  |
| AM:                                 | 40           |         |       | 105       |              |         | 65    |           |            | 80      |       |           | 140        |         |       | 60        |  |  |
| PM:                                 | 30           |         |       | 55        |              |         | 25    |           |            | 45      |       |           | 110        |         |       | 65        |  |  |

**2044 No Build/Build DHV**

| 2044 No Build/Build DHV |              |         |       |           |              |         |       |           |            |         |       |           |            |         |       |           |  |  |
|-------------------------|--------------|---------|-------|-----------|--------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|--|--|
|                         | Front Avenue |         |       |           | Front Avenue |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |  |  |
| BY MOVEMENT             | NB LT        | NB THRU | NB RT | NB U-TURN | SB LT        | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |  |  |
| AM:                     | 0            | 45      | 5     | 0         | 30           | 65      | 5     | 5         | 5          | 5       | 5     | 5         | 15         | 5       | 25    | 0         |  |  |
| PM:                     | 0            | 30      | 5     | 0         | 30           | 25      | 0     | 0         | 0          | 5       | 0     | 0         | 5          | 0       | 50    | 0         |  |  |
| BY APPROACH             | IN           |         |       | OUT       |              |         | IN    |           |            | OUT     |       |           | IN         |         |       | OUT       |  |  |
| AM:                     | 50           |         |       | 85        |              |         | 105   |           |            | 80      |       |           | 20         |         |       | 15        |  |  |
| PM:                     | 35           |         |       | 30        |              |         | 55    |           |            | 80      |       |           | 5          |         |       | 0         |  |  |

**DHV TRAFFIC VOLUMES**

Project: 8th St Roadway Improvements  
 Client: Columbus, GA  
 Date: 6/7/2021  
 Growth Rate: 1.0%  
 AM Peak Hour: 11:30 AM

Project Number: 171007027  
 Computed by: J. Ekstedt  
 Checked by: M. Holt  
 PM Peak Hour: 4:30 PM

**Intersection 2: 8th Street @ Broadway**

| 2021 Existing Peak Hr TMC (RAW DATA) |              |         |       |           |              |         |       |           |            |         |       |           |            |         |       |           |
|--------------------------------------|--------------|---------|-------|-----------|--------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
|                                      | Broadway Ave |         |       |           | Broadway Ave |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |
| BY MOVEMENT                          | NB LT        | NB THRU | NB RT | NB U-TURN | SB LT        | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| 8:00 AM                              | 0            | 6       | 1     | 0         | 1            | 7       | 7     | 0         | 2          | 20      | 0     | 0         | 3          | 39      | 5     | 0         |
| Percentage                           | 0.0%         | 85.7%   | 14.3% | 0.0%      | 6.7%         | 46.7%   | 46.7% | 0.0%      | 9.1%       | 90.9%   | 0.0%  | 0.0%      | 6.4%       | 83.0%   | 10.6% | 0.0%      |
| 4:30 PM                              | 1            | 7       | 5     | 0         | 4            | 12      | 5     | 0         | 1          | 38      | 2     | 0         | 4          | 67      | 6     | 0         |
| Percentage                           | 7.7%         | 53.8%   | 38.5% | 0.0%      | 19.0%        | 57.1%   | 23.8% | 0.0%      | 2.4%       | 92.7%   | 4.9%  | 0.0%      | 5.2%       | 87.0%   | 7.8%  | 0.0%      |
| BY APPROACH                          | IN           |         |       | OUT       | IN           |         |       | OUT       | IN         |         |       | OUT       | IN         |         |       | OUT       |
| AM:                                  | 7            |         |       | 10        | 15           |         |       | 13        | 22         |         |       | 46        | 47         |         |       | 22        |
| PM:                                  | 13           |         |       | 18        | 21           |         |       | 14        | 41         |         |       | 73        | 77         |         |       | 47        |
| 4-HOUR TOTAL                         | 3            | 25      | 13    | 1         | 14           | 35      | 17    | 1         | 6          | 111     | 7     | 0         | 16         | 159     | 22    | 0         |
| Percentage                           | 7.1%         | 59.5%   | 31.0% | 2.4%      | N/A          | N/A     | N/A   | N/A       | 4.8%       | 89.5%   | 5.6%  | 0.0%      | 8.1%       | 80.7%   | 11.2% | 0.0%      |

**2021 Existing Peak Hr TMC (Converted the AM Peaks to 11:30 AM Peak)**

| 2021 Existing Peak Hr TMC (Converted the AM Peaks to 11:30 AM Peak) |              |         |       |           |              |         |       |           |            |         |       |           |            |         |       |           |
|---|--------------|---------|-------|-----------|--------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
|   | Broadway Ave |         |       |           | Broadway Ave |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |
| BY MOVEMENT   | NB LT        | NB THRU | NB RT | NB U-TURN | SB LT        | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| 11:30 AM  | 0            | 8       | 1     | 0         | 1            | 10      | 10    | 0         | 3          | 28      | 0     | 0         | 4          | 54      | 7     | 0         |
| Percentage  | 0.0%         | 88.9%   | 11.1% | 0.0%      | 4.8%         | 47.6%   | 47.6% | 0.0%      | 9.7%       | 90.3%   | 0.0%  | 0.0%      | 6.2%       | 83.1%   | 10.8% | 0.0%      |
| 4:30 PM   | 1            | 7       | 5     | 0         | 4            | 12      | 5     | 0         | 1          | 38      | 2     | 0         | 4          | 67      | 6     | 0         |
| Percentage  | 7.7%         | 53.8%   | 38.5% | 0.0%      | 19.0%        | 57.1%   | 23.8% | 0.0%      | 2.4%       | 92.7%   | 4.9%  | 0.0%      | 5.2%       | 87.0%   | 7.8%  | 0.0%      |
| BY APPROACH   | IN           |         |       | OUT       | IN           |         |       | OUT       | IN         |         |       | OUT       | IN         |         |       | OUT       |
| AM:   | 9            |         |       | 14        | 21           |         |       | 18        | 31         |         |       | 64        | 65         |         |       | 30        |
| PM:   | 13           |         |       | 18        | 21           |         |       | 14        | 41         |         |       | 73        | 77         |         |       | 47        |
| 4-HOUR TOTAL  | 3            | 25      | 13    | 1         | 14           | 35      | 17    | 1         | 6          | 111     | 7     | 0         | 16         | 159     | 22    | 0         |
| Percentage  | 7.1%         | 59.5%   | 31.0% | 2.4%      | N/A          | N/A     | N/A   | N/A       | 4.8%       | 89.5%   | 5.6%  | 0.0%      | 8.1%       | 80.7%   | 11.2% | 0.0%      |

**2021 Existing Peak Hr TMC (Calculated & Rounded)**

| 2021 Existing Peak Hr TMC (Calculated & Rounded) |              |         |       |           |              |         |       |           |            |         |       |           |            |         |       |           |
|--|--------------|---------|-------|-----------|--------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
|  | Broadway Ave |         |       |           | Broadway Ave |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |
| BY MOVEMENT                                      | NB LT        | NB THRU | NB RT | NB U-TURN | SB LT        | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| AM:  | 0            | 10      | 5     | 0         | 5            | 10      | 10    | 0         | 5          | 30      | 5     | 0         | 5          | 55      | 5     | 0         |
| PM:  | 5            | 5       | 5     | 0         | 5            | 10      | 5     | 0         | 5          | 40      | 5     | 0         | 5          | 65      | 5     | 0         |
| BY APPROACH                                      | IN           |         |       | OUT       | IN           |         |       | OUT       | IN         |         |       | OUT       | IN         |         |       | OUT       |
| AM:  | 15           | 35      |       | 20        | 25           | 45      |       | 20        | 40         | 105     |       | 65        | 65         | 105     |       | 40        |
| PM:  | 15           | 35      |       | 20        | 20           | 35      |       | 15        | 50         | 125     |       | 75        | 75         | 125     |       | 50        |

**2044 No Build/Build DHV**

| 2044 No Build/Build DHV |              |         |       |           |              |         |       |           |            |         |       |           |            |         |       |           |
|-------------------------|--------------|---------|-------|-----------|--------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
|                         | Broadway Ave |         |       |           | Broadway Ave |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |
| BY MOVEMENT             | NB LT        | NB THRU | NB RT | NB U-TURN | SB LT        | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| AM:                     | 0            | 15      | 5     | 0         | 5            | 15      | 15    | 0         | 5          | 40      | 5     | 0         | 5          | 70      | 5     | 0         |
| PM:                     | 5            | 5       | 5     | 0         | 5            | 15      | 5     | 0         | 5          | 50      | 5     | 0         | 5          | 80      | 5     | 0         |
| BY APPROACH             | IN           |         |       | OUT       | IN           |         |       | OUT       | IN         |         |       | OUT       | IN         |         |       | OUT       |
| AM:                     | 20           |         |       | 25        | 35           |         |       | 25        | 50         |         |       | 85        | 80         |         |       | 50        |
| PM:                     | 15           |         |       | 25        | 25           |         |       | 15        | 60         |         |       | 90        | 90         |         |       | 60        |

**DHV TRAFFIC VOLUMES**

Project: 8th St Roadway Improvements  
 Client: Columbus, GA  
 Date: 6/7/2021  
 Growth Rate: 1.0%  
 AM Peak Hour: 11:30 AM

Project Number: 171007027  
 Computed by: J. Ekstedt  
 Checked by: M. Holt  
 PM Peak Hour: 4:30 PM

**Intersection 3: 8th Street @ First Avenue**

**2021 Existing Peak Hr TMC (RAW DATA)**

| BY MOVEMENT  | First Avenue |         |       |           | First Avenue |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |
|--------------|--------------|---------|-------|-----------|--------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
|              | NB LT        | NB THRU | NB RT | NB U-TURN | SB LT        | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| 8:00 AM      | 0            | 12      | 12    | 0         | 3            | 5       | 0     | 0         | 0          | 21      | 1     | 0         | 7          | 47      | 9     | 0         |
| Percentage   | 0.0%         | 50.0%   | 50.0% | 0.0%      | 37.5%        | 62.5%   | 0.0%  | 0.0%      | 0.0%       | 95.5%   | 4.5%  | 0.0%      | 11.1%      | 74.6%   | 14.3% | 0.0%      |
| 4:30 PM      | 3            | 11      | 7     | 0         | 7            | 20      | 3     | 0         | 2          | 42      | 2     | 0         | 8          | 64      | 5     | 1         |
| Percentage   | 14.3%        | 52.4%   | 33.3% | 0.0%      | 23.3%        | 66.7%   | 10.0% | 0.0%      | 4.3%       | 91.3%   | 4.3%  | 0.0%      | 10.3%      | 82.1%   | 6.4%  | 1.3%      |
| BY APPROACH  | IN           |         |       |           | OUT          |         |       |           | IN         |         |       |           | OUT        |         |       |           |
| AM:          | 24           |         |       |           | 13           |         |       |           | 8          |         |       |           | 21         |         |       |           |
| PM:          | 21           |         |       |           | 30           |         |       |           | 30         |         |       |           | 18         |         |       |           |
| 4-HOUR TOTAL | 4            | 45      | 27    | 0         | 12           | 46      | 8     | 0         | 8          | 124     | 6     | 0         | 35         | 185     | 26    | 2         |
| Percentage   | 5.3%         | 59.2%   | 35.5% | 0.0%      | 18.2%        | 69.7%   | 12.1% | 0.0%      | 5.8%       | 89.9%   | 4.3%  | 0.0%      | 14.1%      | 74.6%   | 10.5% | 0.8%      |

**2021 Existing Peak Hr TMC (Converted the AM Peaks to 11:30 AM Peak)**

| BY MOVEMENT  | First Avenue |         |       |           | First Avenue |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |
|--------------|--------------|---------|-------|-----------|--------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
|              | NB LT        | NB THRU | NB RT | NB U-TURN | SB LT        | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| 11:30 AM     | 0            | 16      | 16    | 0         | 4            | 7       | 0     | 0         | 0          | 28      | 1     | 0         | 9          | 63      | 12    | 0         |
| Percentage   | 0.0%         | 50.0%   | 50.0% | 0.0%      | 36.4%        | 63.6%   | 0.0%  | 0.0%      | 0.0%       | 96.6%   | 3.4%  | 0.0%      | 10.7%      | 75.0%   | 14.3% | 0.0%      |
| 4:30 PM      | 3            | 11      | 7     | 0         | 7            | 20      | 3     | 0         | 2          | 42      | 2     | 0         | 8          | 64      | 5     | 1         |
| Percentage   | 14.3%        | 52.4%   | 33.3% | 0.0%      | 23.3%        | 66.7%   | 10.0% | 0.0%      | 4.3%       | 91.3%   | 4.3%  | 0.0%      | 10.3%      | 82.1%   | 6.4%  | 1.3%      |
| BY APPROACH  | IN           |         |       |           | OUT          |         |       |           | IN         |         |       |           | OUT        |         |       |           |
| AM:          | 32           |         |       |           | 17           |         |       |           | 11         |         |       |           | 28         |         |       |           |
| PM:          | 21           |         |       |           | 30           |         |       |           | 30         |         |       |           | 18         |         |       |           |
| 4-HOUR TOTAL | 4            | 45      | 27    | 0         | 12           | 46      | 8     | 0         | 8          | 124     | 6     | 0         | 35         | 185     | 26    | 2         |
| Percentage   | 5.3%         | 59.2%   | 35.5% | 0.0%      | 18.2%        | 69.7%   | 12.1% | 0.0%      | 5.8%       | 89.9%   | 4.3%  | 0.0%      | 14.1%      | 74.6%   | 10.5% | 0.8%      |

**2021 Existing Peak Hr TMC (Calculated & Rounded)**

| BY MOVEMENT | First Avenue |         |       |           | First Avenue |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |
|-------------|--------------|---------|-------|-----------|--------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
|             | NB LT        | NB THRU | NB RT | NB U-TURN | SB LT        | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| AM:         | 0            | 15      | 15    | 0         | 5            | 5       | 0     | 0         | 0          | 30      | 5     | 0         | 10         | 65      | 10    | 0         |
| PM:         | 5            | 10      | 5     | 0         | 5            | 20      | 5     | 0         | 5          | 40      | 5     | 0         | 10         | 65      | 5     | 5         |
| BY APPROACH | IN           |         |       |           | OUT          |         |       |           | IN         |         |       |           | OUT        |         |       |           |
| AM:         | 30           |         |       |           | 50           |         |       |           | 20         |         |       |           | 35         |         |       |           |
| PM:         | 20           |         |       |           | 55           |         |       |           | 35         |         |       |           | 50         |         |       |           |

**2044 No Build/Build DHV**

| BY MOVEMENT | First Avenue |         |       |           | First Avenue |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |
|-------------|--------------|---------|-------|-----------|--------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
|             | NB LT        | NB THRU | NB RT | NB U-TURN | SB LT        | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| AM:         | 0            | 20      | 20    | 0         | 5            | 5       | 0     | 0         | 0          | 40      | 5     | 0         | 15         | 80      | 15    | 0         |
| PM:         | 5            | 15      | 5     | 0         | 5            | 25      | 5     | 0         | 5          | 50      | 5     | 0         | 15         | 80      | 5     | 5         |
| BY APPROACH | IN           |         |       |           | OUT          |         |       |           | IN         |         |       |           | OUT        |         |       |           |
| AM:         | 40           |         |       |           | 25           |         |       |           | 10         |         |       |           | 35         |         |       |           |
| PM:         | 25           |         |       |           | 45           |         |       |           | 35         |         |       |           | 60         |         |       |           |

**DHV TRAFFIC VOLUMES**

Project: 8th St Roadway Improvements  
 Client: Columbus, GA  
 Date: 6/7/2021  
 Growth Rate: 1.0%  
 AM Peak Hour: 11:30 AM

Project Number: 171007027  
 Computed by: J. Ekstedt  
 Checked by: M. Holt  
 PM Peak Hour: 4:30 PM

**Intersection 4: 8th Street @ Second Avenue**

| 2021 Existing Peak Hr TMC (RAW DATA) |               |         |       |           |               |         |       |           |            |         |       |           |            |         |       |           |
|--------------------------------------|---------------|---------|-------|-----------|---------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
|                                      | Second Avenue |         |       |           | Second Avenue |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |
| BY MOVEMENT                          | NB LT         | NB THRU | NB RT | NB U-TURN | SB LT         | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| 8:00 AM                              | 3             | 17      | 7     | 0         | 4             | 21      | 7     | 0         | 3          | 33      | 0     | 0         | 5          | 55      | 13    | 0         |
| Percentage                           | 11.1%         | 63.0%   | 25.9% | 0.0%      | 12.5%         | 65.6%   | 21.9% | 0.0%      | 8.3%       | 91.7%   | 0.0%  | 0.0%      | 6.8%       | 75.3%   | 17.8% | 0.0%      |
| 4:30 PM                              | 1             | 24      | 10    | 0         | 12            | 44      | 13    | 0         | 7          | 49      | 4     | 0         | 14         | 69      | 7     | 0         |
| Percentage                           | 2.9%          | 68.6%   | 28.6% | 0.0%      | 17.4%         | 63.8%   | 18.8% | 0.0%      | 11.7%      | 81.7%   | 6.7%  | 0.0%      | 15.6%      | 76.7%   | 7.8%  | 0.0%      |
| BY APPROACH                          | IN            |         |       | OUT       | IN            |         |       | OUT       | IN         |         |       | OUT       | IN         |         |       | OUT       |
| AM:                                  | 27            |         |       | 26        | 32            |         |       | 33        | 36         |         |       | 65        | 73         |         |       | 44        |
| PM:                                  | 35            |         |       | 62        | 69            |         |       | 38        | 60         |         |       | 83        | 90         |         |       | 71        |
| 4-HOUR TOTAL                         | 8             | 83      | 38    | 0         | 33            | 100     | 33    | 0         | 19         | 143     | 7     | 0         | 29         | 202     | 33    | 0         |
| Percentage                           | 6.2%          | 64.3%   | 29.5% | 0.0%      | 19.9%         | 60.2%   | 19.9% | 0.0%      | 11.2%      | 84.6%   | 4.1%  | 0.0%      | 11.0%      | 76.5%   | 12.5% | 0.0%      |

**2021 Existing Peak Hr TMC (Converted the AM Peaks to 11:30 AM Peak)**

| 2021 Existing Peak Hr TMC (Converted the AM Peaks to 11:30 AM Peak) |               |         |       |           |               |         |       |           |            |         |       |           |            |         |       |           |
|---|---------------|---------|-------|-----------|---------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
|   | Second Avenue |         |       |           | Second Avenue |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |
| BY MOVEMENT   | NB LT         | NB THRU | NB RT | NB U-TURN | SB LT         | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| 11:30 AM  | 4             | 22      | 9     | 0         | 5             | 28      | 9     | 0         | 4          | 43      | 0     | 0         | 7          | 72      | 17    | 0         |
| Percentage  | 11.4%         | 62.9%   | 25.7% | 0.0%      | 11.9%         | 66.7%   | 21.4% | 0.0%      | 8.5%       | 91.5%   | 0.0%  | 0.0%      | 7.3%       | 75.0%   | 17.7% | 0.0%      |
| 12:00 AM  | 1             | 24      | 10    | 0         | 12            | 44      | 13    | 0         | 7          | 49      | 4     | 0         | 14         | 69      | 7     | 0         |
| Percentage  | 2.9%          | 68.6%   | 28.6% | 0.0%      | 17.4%         | 63.8%   | 18.8% | 0.0%      | 11.7%      | 81.7%   | 6.7%  | 0.0%      | 15.6%      | 76.7%   | 7.8%  | 0.0%      |
| BY APPROACH   | IN            |         |       | OUT       | IN            |         |       | OUT       | IN         |         |       | OUT       | IN         |         |       | OUT       |
| AM:   | 35            |         |       | 35        | 42            |         |       | 43        | 47         |         |       | 85        | 96         |         |       | 57        |
| PM:   | 35            |         |       | 62        | 69            |         |       | 38        | 60         |         |       | 83        | 90         |         |       | 71        |
| 4-HOUR TOTAL  | 8             | 83      | 38    | 0         | 33            | 100     | 33    | 0         | 19         | 143     | 7     | 0         | 29         | 202     | 33    | 0         |
| Percentage  | 6.2%          | 64.3%   | 29.5% | 0.0%      | 19.9%         | 60.2%   | 19.9% | 0.0%      | 11.2%      | 84.6%   | 4.1%  | 0.0%      | 11.0%      | 76.5%   | 12.5% | 0.0%      |

**2021 Existing Peak Hr TMC (Calculated & Rounded)**

| 2021 Existing Peak Hr TMC (Calculated & Rounded) |               |         |       |           |               |         |       |           |            |         |       |           |            |         |       |           |
|--|---------------|---------|-------|-----------|---------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
|  | Second Avenue |         |       |           | Second Avenue |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |
| BY MOVEMENT                                      | NB LT         | NB THRU | NB RT | NB U-TURN | SB LT         | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| AM:  | 5             | 20      | 10    | 0         | 5             | 30      | 10    | 0         | 5          | 45      | 0     | 0         | 5          | 70      | 15    | 0         |
| PM:  | 5             | 25      | 10    | 0         | 10            | 45      | 15    | 0         | 5          | 50      | 5     | 0         | 15         | 70      | 5     | 0         |
| BY APPROACH                                      | IN            |         |       | OUT       | IN            |         |       | OUT       | IN         |         |       | OUT       | IN         |         |       | OUT       |
| AM:  | 35            | 70      |       | 35        | 45            | 85      |       | 40        | 50         | 135     |       | 85        | 90         | 150     |       | 60        |
| PM:  | 40            | 105     |       | 65        | 70            | 105     |       | 35        | 60         | 150     |       | 90        | 90         | 160     |       | 70        |

**2044 No Build/Build DHV**

| 2044 No Build/Build DHV |               |         |       |           |               |         |       |           |            |         |       |           |            |         |       |           |
|-------------------------|---------------|---------|-------|-----------|---------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
|                         | Second Avenue |         |       |           | Second Avenue |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |
| BY MOVEMENT             | NB LT         | NB THRU | NB RT | NB U-TURN | SB LT         | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| AM:                     | 5             | 25      | 15    | 0         | 5             | 40      | 15    | 0         | 5          | 55      | 0     | 0         | 5          | 90      | 20    | 0         |
| PM:                     | 5             | 30      | 15    | 0         | 15            | 55      | 20    | 0         | 5          | 65      | 5     | 0         | 20         | 90      | 5     | 0         |
| BY APPROACH             | IN            |         |       | OUT       | IN            |         |       | OUT       | IN         |         |       | OUT       | IN         |         |       | OUT       |
| AM:                     | 45            |         |       | 45        | 60            |         |       | 50        | 60         |         |       | 110       | 115        |         |       | 75        |
| PM:                     | 50            |         |       | 80        | 90            |         |       | 40        | 75         |         |       | 115       | 115        |         |       | 95        |

**DHV TRAFFIC VOLUMES**

Project: 8th St Roadway Improvements  
 Client: Columbus, GA  
 Date: 6/7/2021  
 Growth Rate: 1.0%  
 AM Peak Hour: 11:30 AM

Project Number: 171007027  
 Computed by: J. Ekstedt  
 Checked by: M. Holt  
 PM Peak Hour: 4:30 PM

**Intersection 5: 8th Street @ Third Avenue**

| 2021 Existing Peak Hr TMC (RAW DATA) |              |         |       |           |              |         |       |           |            |         |       |           |            |         |       |           |
|--------------------------------------|--------------|---------|-------|-----------|--------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
|                                      | Third Avenue |         |       |           | Third Avenue |         |       |           | 8th Street |         |       |           | 8th street |         |       |           |
| BY MOVEMENT                          | NB LT        | NB THRU | NB RT | NB U-TURN | SB LT        | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| 8:00 AM                              | 3            | 41      | 24    | 0         | 4            | 8       | 4     | 0         | 4          | 34      | 2     | 0         | 4          | 64      | 7     | 0         |
| Percentage                           | 4.4%         | 60.3%   | 35.3% | 0.0%      | 25.0%        | 50.0%   | 25.0% | 0.0%      | 10.0%      | 85.0%   | 5.0%  | 0.0%      | 5.3%       | 85.3%   | 9.3%  | 0.0%      |
| 4:30 PM                              | 4            | 21      | 8     | 0         | 4            | 16      | 6     | 0         | 9          | 58      | 4     | 0         | 10         | 81      | 6     | 0         |
| Percentage                           | 12.1%        | 63.6%   | 24.2% | 0.0%      | 15.4%        | 61.5%   | 23.1% | 0.0%      | 12.7%      | 81.7%   | 5.6%  | 0.0%      | 10.3%      | 83.5%   | 6.2%  | 0.0%      |
| BY APPROACH                          | IN           |         |       | OUT       | IN           |         |       | OUT       | IN         |         |       | OUT       | IN         |         |       | OUT       |
| AM:                                  | 68           |         |       | 14        | 16           |         |       | 52        | 40         |         |       | 71        | 75         |         |       | 62        |
| PM:                                  | 33           |         |       | 30        | 26           |         |       | 36        | 71         |         |       | 91        | 97         |         |       | 70        |
| 4-HOUR TOTAL                         | 16           | 101     | 50    | 0         | 13           | 49      | 15    | 1         | 17         | 183     | 10    | 0         | 23         | 232     | 18    | 1         |
| Percentage                           | 9.6%         | 60.5%   | 29.9% | 0.0%      | 16.7%        | 62.8%   | 19.2% | 1.3%      | 8.1%       | 87.1%   | 4.8%  | 0.0%      | 8.4%       | 84.7%   | 6.6%  | 0.4%      |

**2021 Existing Peak Hr TMC (Converted the AM Peaks to 11:30 AM Peak)**

|              | Third Avenue |         |       |           | Third Avenue |         |       |           | 8th Street |         |       |           | 8th street |         |       |           |
|--------------|--------------|---------|-------|-----------|--------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
| BY MOVEMENT  | NB LT        | NB THRU | NB RT | NB U-TURN | SB LT        | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| 11:30 AM     | 4            | 51      | 30    | 0         | 5            | 10      | 5     | 0         | 5          | 43      | 3     | 0         | 5          | 80      | 9     | 0         |
| Percentage   | 4.7%         | 60.0%   | 35.3% | 0.0%      | 25.0%        | 50.0%   | 25.0% | 0.0%      | 9.8%       | 84.3%   | 5.9%  | 0.0%      | 5.3%       | 85.1%   | 9.6%  | 0.0%      |
| 12:00 AM     | 4            | 21      | 8     | 0         | 4            | 16      | 6     | 0         | 9          | 58      | 4     | 0         | 10         | 81      | 6     | 0         |
| Percentage   | 12.1%        | 63.6%   | 24.2% | 0.0%      | 15.4%        | 61.5%   | 23.1% | 0.0%      | 12.7%      | 81.7%   | 5.6%  | 0.0%      | 10.3%      | 83.5%   | 6.2%  | 0.0%      |
| BY APPROACH  | IN           |         |       | OUT       | IN           |         |       | OUT       | IN         |         |       | OUT       | IN         |         |       | OUT       |
| AM:          | 85           |         |       | 18        | 20           |         |       | 65        | 51         |         |       | 89        | 94         |         |       | 78        |
| PM:          | 33           |         |       | 30        | 26           |         |       | 36        | 71         |         |       | 91        | 97         |         |       | 70        |
| 4-HOUR TOTAL | 16           | 101     | 50    | 0         | 13           | 49      | 15    | 1         | 17         | 183     | 10    | 0         | 23         | 232     | 18    | 1         |
| Percentage   | 9.6%         | 60.5%   | 29.9% | 0.0%      | 16.7%        | 62.8%   | 19.2% | 1.3%      | 8.1%       | 87.1%   | 4.8%  | 0.0%      | 8.4%       | 84.7%   | 6.6%  | 0.4%      |

**2021 Existing Peak Hr TMC (Calculated & Rounded)**

|             | Third Avenue |         |       |           | Third Avenue |         |       |           | 8th Street |         |       |           | 8th street |         |       |           |
|-------------|--------------|---------|-------|-----------|--------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
| BY MOVEMENT | NB LT        | NB THRU | NB RT | NB U-TURN | SB LT        | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| AM:         | 5            | 50      | 30    | 0         | 5            | 10      | 5     | 0         | 5          | 45      | 5     | 0         | 5          | 80      | 10    | 0         |
| PM:         | 5            | 20      | 10    | 0         | 5            | 15      | 5     | 0         | 10         | 60      | 5     | 0         | 10         | 80      | 5     | 0         |
| BY APPROACH | IN           |         |       | OUT       | IN           |         |       | OUT       | IN         |         |       | OUT       | IN         |         |       | OUT       |
| AM:         | 85           |         |       | 105       | 20           |         |       | 85        | 65         |         |       | 55        | 145        |         |       | 90        |
| PM:         | 35           |         |       | 65        | 30           |         |       | 25        | 60         |         |       | 35        | 75         |         |       | 165       |

**2044 No Build/Build DHV**

|             | Third Avenue |         |       |           | Third Avenue |         |       |           | 8th Street |         |       |           | 8th street |         |       |           |
|-------------|--------------|---------|-------|-----------|--------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
| BY MOVEMENT | NB LT        | NB THRU | NB RT | NB U-TURN | SB LT        | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| AM:         | 5            | 65      | 40    | 0         | 5            | 15      | 5     | 0         | 5          | 55      | 5     | 0         | 5          | 100     | 15    | 0         |
| PM:         | 5            | 25      | 15    | 0         | 5            | 20      | 5     | 0         | 15         | 75      | 5     | 0         | 15         | 100     | 5     | 0         |
| BY APPROACH | IN           |         |       | OUT       | IN           |         |       | OUT       | IN         |         |       | OUT       | IN         |         |       | OUT       |
| AM:         | 110          |         |       | 25        | 25           |         |       | 85        | 65         |         |       | 110       | 120        |         |       | 100       |
| PM:         | 45           |         |       | 40        | 30           |         |       | 45        | 95         |         |       | 110       | 120        |         |       | 95        |

**DHV TRAFFIC VOLUMES**

Project: 8th St Roadway Improvements  
 Client: Columbus, GA  
 Date: 6/7/2021  
 Growth Rate: 1.0%  
 AM Peak Hour: 11:30 AM

Project Number: 171007027  
 Computed by: J. Ekstedt  
 Checked by: M. Holt  
 PM Peak Hour: 4:30 PM

**Intersection 6: 8th Street @ Veterans Parkway**

| 2021 Existing Peak Hr TMC (RAW DATA) |                  |         |       |           |                  |         |       |           |            |         |       |           |            |         |       |           |
|--------------------------------------|------------------|---------|-------|-----------|------------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
|                                      | Veterans Parkway |         |       |           | Veterans Parkway |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |
| BY MOVEMENT                          | NB LT            | NB THRU | NB RT | NB U-TURN | SB LT            | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| 8:00 AM                              | 19               | 416     | 12    | 1         | 43               | 412     | 23    | 0         | 18         | 27      | 15    | 0         | 18         | 33      | 28    | 0         |
| Percentage                           | 4.2%             | 92.9%   | 2.7%  | 0.2%      | 9.0%             | 86.2%   | 4.8%  | 0.0%      | 30.0%      | 45.0%   | 25.0% | 0.0%      | 22.8%      | 41.8%   | 35.4% | 0.0%      |
| 4:30 PM                              | 25               | 541     | 15    | 0         | 38               | 602     | 17    | 0         | 27         | 29      | 13    | 0         | 36         | 50      | 53    | 0         |
| Percentage                           | 4.3%             | 93.1%   | 2.6%  | 0.0%      | 5.8%             | 91.6%   | 2.6%  | 0.0%      | 39.1%      | 42.0%   | 18.8% | 0.0%      | 25.9%      | 36.0%   | 38.1% | 0.0%      |
| BY APPROACH                          | IN               |         |       | OUT       | IN               |         |       | OUT       | IN         |         |       | OUT       | IN         |         |       | OUT       |
| AM:                                  | 448              |         |       | 446       | 478              |         |       | 462       | 60         |         |       | 75        | 79         |         |       | 82        |
| PM:                                  | 581              |         |       | 651       | 657              |         |       | 621       | 69         |         |       | 92        | 139        |         |       | 82        |
| 4-HOUR TOTAL                         | 74               | 1789    | 43    | 3         | 164              | 1974    | 85    | 0         | 76         | 113     | 58    | 0         | 95         | 117     | 146   | 0         |
| Percentage                           | 3.9%             | 93.7%   | 2.3%  | 0.2%      | 7.4%             | 88.8%   | 3.8%  | 0.0%      | 30.8%      | 45.7%   | 23.5% | 0.0%      | 26.5%      | 32.7%   | 40.8% | 0.0%      |

2021 Existing Peak Hr TMC (Converted the AM Peaks to 11:30 AM Peak)

|              | Veterans Parkway |         |       |           | Veterans Parkway |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |
|--------------|------------------|---------|-------|-----------|------------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
| BY MOVEMENT  | NB LT            | NB THRU | NB RT | NB U-TURN | SB LT            | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| 11:30 AM     | 24               | 530     | 15    | 1         | 55               | 525     | 29    | 0         | 23         | 34      | 19    | 0         | 23         | 42      | 36    | 0         |
| Percentage   | 4.2%             | 93.0%   | 2.6%  | 0.2%      | 9.0%             | 86.2%   | 4.8%  | 0.0%      | 30.3%      | 44.7%   | 25.0% | 0.0%      | 22.8%      | 41.6%   | 35.6% | 0.0%      |
| 12:00 AM     | 25               | 541     | 15    | 0         | 38               | 602     | 17    | 0         | 27         | 29      | 13    | 0         | 36         | 50      | 53    | 0         |
| Percentage   | 4.3%             | 93.1%   | 2.6%  | 0.0%      | 5.8%             | 91.6%   | 2.6%  | 0.0%      | 39.1%      | 42.0%   | 18.8% | 0.0%      | 25.9%      | 36.0%   | 38.1% | 0.0%      |
| BY APPROACH  | IN               |         |       | OUT       | IN               |         |       | OUT       | IN         |         |       | OUT       | IN         |         |       | OUT       |
| AM:          | 570              |         |       | 568       | 609              |         |       | 589       | 76         |         |       | 95        | 101        |         |       | 104       |
| PM:          | 581              |         |       | 651       | 657              |         |       | 621       | 69         |         |       | 92        | 139        |         |       | 82        |
| 4-HOUR TOTAL | 74               | 1789    | 43    | 3         | 164              | 1974    | 85    | 0         | 76         | 113     | 58    | 0         | 95         | 117     | 146   | 0         |
| Percentage   | 3.9%             | 93.7%   | 2.3%  | 0.2%      | 7.4%             | 88.8%   | 3.8%  | 0.0%      | 30.8%      | 45.7%   | 23.5% | 0.0%      | 26.5%      | 32.7%   | 40.8% | 0.0%      |

2021 Existing Peak Hr TMC (Calculated & Rounded)

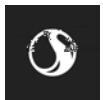
|             | Veterans Parkway |         |       |           | Veterans Parkway |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |
|-------------|------------------|---------|-------|-----------|------------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
| BY MOVEMENT | NB LT            | NB THRU | NB RT | NB U-TURN | SB LT            | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| AM:         | 25               | 530     | 15    | 0         | 55               | 525     | 30    | 0         | 25         | 35      | 20    | 0         | 25         | 40      | 35    | 0         |
| PM:         | 25               | 540     | 15    | 0         | 40               | 600     | 15    | 0         | 25         | 30      | 15    | 0         | 35         | 50      | 55    | 0         |
| BY APPROACH | IN               |         |       | OUT       | IN               |         |       | OUT       | IN         |         |       | OUT       | IN         |         |       | OUT       |
| AM:         | 570              | 1140    |       | 570       | 610              | 1200    |       | 590       | 80         | 175     |       | 95        | 100        | 205     |       | 105       |
| PM:         | 580              | 1230    |       | 650       | 655              | 1275    |       | 620       | 70         | 160     |       | 90        | 140        | 225     |       | 85        |

2044 No Build/Build DHV

|             | Veterans Parkway |         |       |           | Veterans Parkway |         |       |           | 8th Street |         |       |           | 8th Street |         |       |           |
|-------------|------------------|---------|-------|-----------|------------------|---------|-------|-----------|------------|---------|-------|-----------|------------|---------|-------|-----------|
| BY MOVEMENT | NB LT            | NB THRU | NB RT | NB U-TURN | SB LT            | SB THRU | SB RT | SB U-TURN | EB LT      | EB THRU | EB RT | EB U-TURN | WB LT      | WB THRU | WB RT | WB U-TURN |
| AM:         | 30               | 665     | 20    | 0         | 70               | 660     | 40    | 0         | 30         | 45      | 25    | 0         | 30         | 50      | 45    | 0         |
| PM:         | 30               | 680     | 20    | 0         | 50               | 755     | 20    | 0         | 30         | 40      | 20    | 0         | 45         | 65      | 70    | 0         |
| BY APPROACH | IN               |         |       | OUT       | IN               |         |       | OUT       | IN         |         |       | OUT       | IN         |         |       | OUT       |
| AM:         | 715              |         |       | 715       | 770              |         |       | 740       | 100        |         |       | 120       | 125        |         |       | 135       |
| PM:         | 730              |         |       | 820       | 825              |         |       | 780       | 90         |         |       | 115       | 180        |         |       | 110       |



## Appendix F SYNCHRO REPORTS



HCM 6th TWSC

1: Front Avenue & 8th Street 2021, AM Peak

07/21/2021

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 5.4  |      |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBU  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      |
| Traffic Vol, veh/h       | 5    | 5    | 5    | 10   | 5    | 20   | 0    | 35   | 5    | 5    | 25   | 50   | 5    |
| Future Vol, veh/h        | 5    | 5    | 5    | 10   | 5    | 20   | 0    | 35   | 5    | 5    | 25   | 50   | 5    |
| Conflicting Peds, #/hr   | 0    | 0    | 1    | 1    | 0    | 0    | 1    | 0    | 1    | 0    | 1    | 0    | 1    |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | 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         | 25   | 25   | 25   | 56   | 25   | 65   | 25   | 72   | 38   | 25   | 71   | 55   | 25   |
| Heavy Vehicles, %        | 0    | 100  | 100  | 0    | 100  | 8    | 0    | 0    | 0    | 0    | 0    | 0    | 100  |
| Mvmt Flow                | 20   | 20   | 20   | 18   | 20   | 31   | 0    | 49   | 13   | 20   | 35   | 91   | 20   |

| Major/Minor          | Minor2 |     | Minor1 |     | Major1 |      |      | Major2 |   |      |      |   |   |
|----------------------|--------|-----|--------|-----|--------|------|------|--------|---|------|------|---|---|
| Conflicting Flow All | 247    | 275 | 58     | 224 | 279    | 32   | 112  | 0      | 0 | 62   | 63   | 0 | 0 |
| Stage 1              | 212    | 212 | -      | 57  | 57     | -    | -    | -      | - | -    | -    | - | - |
| Stage 2              | 35     | 63  | -      | 167 | 222    | -    | -    | -      | - | -    | -    | - | - |
| Critical Hdwy        | 7.5    | 8.5 | 8.9    | 7.5 | 8.5    | 7.06 | 4.1  | -      | - | 6.4  | 4.1  | - | - |
| Critical Hdwy Stg 1  | 6.5    | 7.5 | -      | 6.5 | 7.5    | -    | -    | -      | - | -    | -    | - | - |
| Critical Hdwy Stg 2  | 6.5    | 7.5 | -      | 6.5 | 7.5    | -    | -    | -      | - | -    | -    | - | - |
| Follow-up Hdwy       | 3.5    | 5   | 4.3    | 3.5 | 5      | 3.38 | 2.2  | -      | - | 2.5  | 2.2  | - | - |
| Pot Cap-1 Maneuver   | 692    | 453 | 751    | 718 | 449    | 1015 | 1490 | -      | - | 1318 | 1553 | - | - |
| Stage 1              | 776    | 534 | -      | 954 | 665    | -    | -    | -      | - | -    | -    | - | - |
| Stage 2              | 982    | 659 | -      | 824 | 527    | -    | -    | -      | - | -    | -    | - | - |
| Platoon blocked, %   |        |     |        |     |        |      |      | -      | - |      |      | - | - |
| Mov Cap-1 Maneuver   | 626    | 434 | 750    | 652 | 430    | 1014 | 1489 | -      | - | 1447 | 1447 | - | - |
| Mov Cap-2 Maneuver   | 626    | 434 | -      | 652 | 430    | -    | -    | -      | - | -    | -    | - | - |
| Stage 1              | 775    | 512 | -      | 953 | 664    | -    | -    | -      | - | -    | -    | - | - |
| Stage 2              | 924    | 658 | -      | 738 | 505    | -    | -    | -      | - | -    | -    | - | - |

| Approach             | EB |  | WB   |  | NB |  | SB  |  |
|----------------------|----|--|------|--|----|--|-----|--|
| HCM Control Delay, s | 12 |  | 11.1 |  | 0  |  | 2.6 |  |
| HCM LOS              | B  |  | B    |  |    |  |     |  |

| Minor Lane/Major Mvmt | NBL  | NBT | NBR | EBLn1 | WBLn1 | SBL   | SBT | SBR |
|-----------------------|------|-----|-----|-------|-------|-------|-----|-----|
| Capacity (veh/h)      | 1489 | -   | -   | 573   | 658   | 1447  | -   | -   |
| HCM Lane V/C Ratio    | -    | -   | -   | 0.105 | 0.104 | 0.024 | -   | -   |
| HCM Control Delay (s) | 0    | -   | -   | 12    | 11.1  | 7.6   | 0.2 | -   |
| HCM Lane LOS          | A    | -   | -   | B     | B     | A     | A   | -   |
| HCM 95th %tile Q(veh) | 0    | -   | -   | 0.3   | 0.3   | 0.1   | -   | -   |

HCM 6th TWSC  
2: Broadway & 8th Street 2021, AM Peak

07/21/2021

| Intersection             |      |      |      |       |       |       |      |       |      |      |      |      |
|--------------------------|------|------|------|-------|-------|-------|------|-------|------|------|------|------|
| Int Delay, s/veh         | 4.7  |      |      |       |       |       |      |       |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL   | WBT   | WBR   | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↔    |      |       | ↔     |       |      |       |      |      | ↔    |      |
| Traffic Vol, veh/h       | 0    | 35   | 5    | 5     | 55    | 0     | 0    | 0     | 0    | 5    | 10   | 10   |
| Future Vol, veh/h        | 0    | 35   | 5    | 5     | 55    | 0     | 0    | 0     | 0    | 5    | 10   | 10   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 2     | 0     | 0     | 4    | 0     | 0    | 0    | 0    | 4    |
| Sign Control             | Stop | Stop | Stop | Yield | Yield | Yield | Free | Free  | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -     | -     | None  | -    | -     | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -     | -     | -     | -    | -     | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -     | 16983 | -     | -    | 16983 | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -     | 0     | -     | -    | 0     | -    | -    | 0    | -    |
| Peak Hour Factor         | 50   | 71   | 25   | 75    | 70    | 42    | 25   | 38    | 25   | 25   | 88   | 35   |
| Heavy Vehicles, %        | 0    | 5    | 0    | 0     | 5     | 0     | 0    | 17    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 0    | 49   | 20   | 7     | 79    | 0     | 0    | 0     | 0    | 20   | 11   | 29   |

| Major/Minor          | Minor2 |       |      | Major2 |  |     |
|----------------------|--------|-------|------|--------|--|-----|
| Conflicting Flow All | -      | 70    | 30   |        |  | 0   |
| Stage 1              | -      | 70    | -    |        |  | -   |
| Stage 2              | -      | 0     | -    |        |  | -   |
| Critical Hdwy        | -      | 6.55  | 6.2  |        |  | 4.1 |
| Critical Hdwy Stg 1  | -      | 5.55  | -    |        |  | -   |
| Critical Hdwy Stg 2  | -      | -     | -    |        |  | -   |
| Follow-up Hdwy       | -      | 4.045 | 3.3  |        |  | 2.2 |
| Pot Cap-1 Maneuver   | 0      | 815   | 1050 |        |  | -   |
| Stage 1              | 0      | 831   | -    |        |  | -   |
| Stage 2              | 0      | -     | -    |        |  | -   |
| Platoon blocked, %   |        |       |      |        |  | -   |
| Mov Cap-1 Maneuver   | -      | 0     | 1046 |        |  | -   |
| Mov Cap-2 Maneuver   | -      | 0     | -    |        |  | -   |
| Stage 1              | -      | 0     | -    |        |  | -   |
| Stage 2              | -      | 0     | -    |        |  | -   |

| Approach             | EB  | SB |
|----------------------|-----|----|
| HCM Control Delay, s | 8.7 |    |
| HCM LOS              | A   |    |

| Minor Lane/Major Mvmt | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-----|
| Capacity (veh/h)      | 1046  | -   | -   | -   |
| HCM Lane V/C Ratio    | 0.066 | -   | -   | -   |
| HCM Control Delay (s) | 8.7   | -   | -   | -   |
| HCM Lane LOS          | A     | -   | -   | -   |
| HCM 95th %tile Q(veh) | 0.2   | -   | -   | -   |

HCM 6th TWSC  
 3: Broadway & 8th Street 2021, AM Peak

07/21/2021

| Intersection             |       |       |       |      |      |      |      |      |      |      |       |      |
|--------------------------|-------|-------|-------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh         | 6.7   |       |       |      |      |      |      |      |      |      |       |      |
| Movement                 | EBL   | EBT   | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
| Lane Configurations      |       | ↔     |       |      | ↔    |      |      | ↔    |      |      |       |      |
| Traffic Vol, veh/h       | 5     | 30    | 0     | 0    | 60   | 5    | 0    | 10   | 5    | 0    | 0     | 0    |
| Future Vol, veh/h        | 5     | 30    | 0     | 0    | 60   | 5    | 0    | 10   | 5    | 0    | 0     | 0    |
| Conflicting Peds, #/hr   | 0     | 0     | 2     | 2    | 0    | 0    | 0    | 0    | 5    | 5    | 0     | 0    |
| Sign Control             | Yield | Yield | Yield | Stop | Stop | Stop | Free | Free | Free | Free | Free  | Free |
| RT Channelized           | -     | -     | None  | -    | -    | None | -    | -    | None | -    | -     | None |
| Storage Length           | -     | -     | -     | -    | -    | -    | -    | -    | -    | -    | -     | -    |
| Veh in Median Storage, # | -     | 2     | -     | -    | 0    | -    | -    | 0    | -    | -    | 16965 | -    |
| Grade, %                 | -     | 0     | -     | -    | 0    | -    | -    | 0    | -    | -    | 0     | -    |
| Peak Hour Factor         | 25    | 75    | 25    | 88   | 84   | 56   | 25   | 60   | 75   | 75   | 63    | 25   |
| Heavy Vehicles, %        | 0     | 5     | 0     | 0    | 5    | 0    | 0    | 17   | 0    | 0    | 0     | 0    |
| Mvmt Flow                | 20    | 40    | 0     | 0    | 71   | 9    | 0    | 17   | 7    | 0    | 0     | 0    |

| Major/Minor          | Minor1 |       | Major1 |     |   |
|----------------------|--------|-------|--------|-----|---|
| Conflicting Flow All | -      | 26    | 26     | 0   | 0 |
| Stage 1              | -      | 26    | -      | -   | - |
| Stage 2              | -      | 0     | -      | -   | - |
| Critical Hdwy        | -      | 6.55  | 6.2    | 4.1 | - |
| Critical Hdwy Stg 1  | -      | 5.55  | -      | -   | - |
| Critical Hdwy Stg 2  | -      | -     | -      | -   | - |
| Follow-up Hdwy       | -      | 4.045 | 3.3    | 2.2 | - |
| Pot Cap-1 Maneuver   | 0      | 861   | 1056   | -   | - |
| Stage 1              | 0      | 868   | -      | -   | - |
| Stage 2              | 0      | -     | -      | -   | - |
| Platoon blocked, %   | -      | -     | -      | -   | - |
| Mov Cap-1 Maneuver   | -      | 0     | 1051   | -   | - |
| Mov Cap-2 Maneuver   | -      | 0     | -      | -   | - |
| Stage 1              | -      | 0     | -      | -   | - |
| Stage 2              | -      | 0     | -      | -   | - |

| Approach             | WB  | NB |
|----------------------|-----|----|
| HCM Control Delay, s | 8.7 | 0  |
| HCM LOS              | A   |    |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | WBLn1 |
|-----------------------|-----|-----|-----|-------|
| Capacity (veh/h)      | -   | -   | -   | 1051  |
| HCM Lane V/C Ratio    | -   | -   | -   | 0.076 |
| HCM Control Delay (s) | 0   | -   | -   | 8.7   |
| HCM Lane LOS          | A   | -   | -   | A     |
| HCM 95th %tile Q(veh) | -   | -   | -   | 0.2   |

HCM 6th TWSC  
4: First Avenue & 8th Street 2021, AM Peak

07/21/2021

| 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       | 0    | 30   | 5    | 10   | 65   | 10   | 0    | 15   | 15   | 5    | 5    | 0    |
| Future Vol, veh/h        | 0    | 30   | 5    | 10   | 65   | 10   | 0    | 15   | 15   | 5    | 5    | 0    |
| Conflicting Peds, #/hr   | 0    | 0    | 3    | 3    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 1    |
| Sign Control             | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 92   | 75   | 25   | 88   | 84   | 56   | 92   | 60   | 75   | 75   | 63   | 92   |
| Heavy Vehicles, %        | 0    | 5    | 0    | 0    | 4    | 11   | 0    | 0    | 0    | 33   | 0    | 0    |
| Mvmt Flow                | 0    | 40   | 20   | 11   | 77   | 18   | 0    | 25   | 20   | 7    | 8    | 0    |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |     |      | Minor2 |     |     |
|----------------------|--------|---|---|--------|---|---|--------|-----|------|--------|-----|-----|
| Conflicting Flow All | 95     | 0 | 0 | 63     | 0 | 0 | 166    | 170 | 53   | 181    | 171 | 87  |
| Stage 1              | -      | - | - | -      | - | - | 53     | 53  | -    | 108    | 108 | -   |
| Stage 2              | -      | - | - | -      | - | - | 113    | 117 | -    | 73     | 63  | -   |
| Critical Hdwy        | 4.1    | - | - | 4.1    | - | - | 7.1    | 6.5 | 6.2  | 7.43   | 6.5 | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.1    | 5.5 | -    | 6.43   | 5.5 | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.1    | 5.5 | -    | 6.43   | 5.5 | -   |
| Follow-up Hdwy       | 2.2    | - | - | 2.2    | - | - | 3.5    | 4   | 3.3  | 3.797  | 4   | 3.3 |
| Pot Cap-1 Maneuver   | 1512   | - | - | 1553   | - | - | 803    | 727 | 1020 | 717    | 726 | 977 |
| Stage 1              | -      | - | - | -      | - | - | 965    | 855 | -    | 827    | 810 | -   |
| Stage 2              | -      | - | - | -      | - | - | 897    | 803 | -    | 865    | 846 | -   |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -   | -    | -      | -   | -   |
| Mov Cap-1 Maneuver   | 1512   | - | - | 1549   | - | - | 789    | 719 | 1017 | 680    | 718 | 976 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 789    | 719 | -    | 680    | 718 | -   |
| Stage 1              | -      | - | - | -      | - | - | 962    | 852 | -    | 827    | 804 | -   |
| Stage 2              | -      | - | - | -      | - | - | 880    | 797 | -    | 823    | 843 | -   |

| Approach             | EB |  |  | WB  |  |  | NB  |  |  | SB   |  |  |
|----------------------|----|--|--|-----|--|--|-----|--|--|------|--|--|
| HCM Control Delay, s | 0  |  |  | 0.8 |  |  | 9.6 |  |  | 10.3 |  |  |
| HCM LOS              |    |  |  |     |  |  | A   |  |  | B    |  |  |

| Minor Lane/Major Mvmt | NBLn1 | EBL  | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 827   | 1512 | -   | -   | 1549  | -   | -   | 700   |
| HCM Lane V/C Ratio    | 0.054 | -    | -   | -   | 0.007 | -   | -   | 0.021 |
| HCM Control Delay (s) | 9.6   | 0    | -   | -   | 7.3   | 0   | -   | 10.3  |
| HCM Lane LOS          | A     | A    | -   | -   | A     | A   | -   | B     |
| HCM 95th %tile Q(veh) | 0.2   | 0    | -   | -   | 0     | -   | -   | 0.1   |

HCM 6th TWSC

5: Second Avenue & 8th Street 2021, AM Peak

07/21/2021

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 4.4  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 5    | 45   | 0    | 5    | 70   | 15   | 5    | 20   | 10   | 5    | 30   | 10   |
| Future Vol, veh/h        | 5    | 45   | 0    | 5    | 70   | 15   | 5    | 20   | 10   | 5    | 30   | 10   |
| Conflicting Peds, #/hr   | 0    | 0    | 2    | 2    | 0    | 0    | 3    | 0    | 0    | 0    | 0    | 3    |
| Sign Control             | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 75   | 63   | 92   | 63   | 86   | 46   | 38   | 71   | 58   | 50   | 75   | 44   |
| Heavy Vehicles, %        | 0    | 6    | 0    | 0    | 5    | 8    | 0    | 6    | 0    | 25   | 5    | 0    |
| Mvmt Flow                | 7    | 71   | 0    | 8    | 81   | 33   | 13   | 28   | 17   | 10   | 40   | 23   |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |       |     | Minor2 |       |     |
|----------------------|--------|---|---|--------|---|---|--------|-------|-----|--------|-------|-----|
| Conflicting Flow All | 114    | 0 | 0 | 73     | 0 | 0 | 235    | 217   | 73  | 222    | 201   | 101 |
| Stage 1              | -      | - | - | -      | - | - | 87     | 87    | -   | 114    | 114   | -   |
| Stage 2              | -      | - | - | -      | - | - | 148    | 130   | -   | 108    | 87    | -   |
| Critical Hdwy        | 4.1    | - | - | 4.1    | - | - | 7.1    | 6.56  | 6.2 | 7.35   | 6.55  | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.1    | 5.56  | -   | 6.35   | 5.55  | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.1    | 5.56  | -   | 6.35   | 5.55  | -   |
| Follow-up Hdwy       | 2.2    | - | - | 2.2    | - | - | 3.5    | 4.054 | 3.3 | 3.725  | 4.045 | 3.3 |
| Pot Cap-1 Maneuver   | 1488   | - | - | 1540   | - | - | 724    | 674   | 995 | 687    | 690   | 960 |
| Stage 1              | -      | - | - | -      | - | - | 926    | 815   | -   | 838    | 795   | -   |
| Stage 2              | -      | - | - | -      | - | - | 859    | 781   | -   | 844    | 817   | -   |
| Platoon blocked, %   |        | - | - |        | - | - |        |       |     |        |       |     |
| Mov Cap-1 Maneuver   | 1488   | - | - | 1537   | - | - | 666    | 665   | 993 | 648    | 681   | 957 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 666    | 665   | -   | 648    | 681   | -   |
| Stage 1              | -      | - | - | -      | - | - | 920    | 809   | -   | 834    | 790   | -   |
| Stage 2              | -      | - | - | -      | - | - | 789    | 776   | -   | 796    | 811   | -   |

| Approach             | EB  |  |  | WB  |  |  | NB   |  |  | SB   |  |  |
|----------------------|-----|--|--|-----|--|--|------|--|--|------|--|--|
| HCM Control Delay, s | 0.6 |  |  | 0.5 |  |  | 10.3 |  |  | 10.4 |  |  |
| HCM LOS              |     |  |  |     |  |  | B    |  |  | B    |  |  |

| Minor Lane/Major Mvmt | NBLn1 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 737   | 1488  | -   | -   | 1537  | -   | -   | 743   |
| HCM Lane V/C Ratio    | 0.079 | 0.004 | -   | -   | 0.005 | -   | -   | 0.098 |
| HCM Control Delay (s) | 10.3  | 7.4   | 0   | -   | 7.4   | 0   | -   | 10.4  |
| HCM Lane LOS          | B     | A     | A   | -   | A     | A   | -   | B     |
| HCM 95th %tile Q(veh) | 0.3   | 0     | -   | -   | 0     | -   | -   | 0.3   |

HCM 6th TWSC  
6: Third Avenue & 8th Street 2021, AM Peak

07/21/2021

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 5.4  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 5    | 45   | 5    | 5    | 80   | 10   | 5    | 50   | 30   | 5    | 10   | 5    |
| Future Vol, veh/h        | 5    | 45   | 5    | 5    | 80   | 10   | 5    | 50   | 30   | 5    | 10   | 5    |
| Conflicting Peds, #/hr   | 1    | 0    | 3    | 3    | 0    | 1    | 0    | 0    | 1    | 1    | 0    | 0    |
| Sign Control             | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 50   | 86   | 25   | 50   | 95   | 50   | 38   | 64   | 82   | 75   | 50   | 25   |
| Heavy Vehicles, %        | 0    | 9    | 0    | 0    | 5    | 14   | 0    | 0    | 4    | 25   | 0    | 25   |
| Mvmt Flow                | 10   | 52   | 20   | 10   | 84   | 20   | 13   | 78   | 37   | 7    | 20   | 20   |

| Major/Minor          | Major1 |   | Major2 |      | Minor1 |   | Minor2 |     |       |       |     |       |
|----------------------|--------|---|--------|------|--------|---|--------|-----|-------|-------|-----|-------|
| Conflicting Flow All | 105    | 0 | 0      | 75   | 0      | 0 | 219    | 210 | 66    | 256   | 210 | 95    |
| Stage 1              | -      | - | -      | -    | -      | - | 85     | 85  | -     | 115   | 115 | -     |
| Stage 2              | -      | - | -      | -    | -      | - | 134    | 125 | -     | 141   | 95  | -     |
| Critical Hdwy        | 4.1    | - | -      | 4.1  | -      | - | 7.1    | 6.5 | 6.24  | 7.35  | 6.5 | 6.45  |
| Critical Hdwy Stg 1  | -      | - | -      | -    | -      | - | 6.1    | 5.5 | -     | 6.35  | 5.5 | -     |
| Critical Hdwy Stg 2  | -      | - | -      | -    | -      | - | 6.1    | 5.5 | -     | 6.35  | 5.5 | -     |
| Follow-up Hdwy       | 2.2    | - | -      | 2.2  | -      | - | 3.5    | 4   | 3.336 | 3.725 | 4   | 3.525 |
| Pot Cap-1 Maneuver   | 1499   | - | -      | 1537 | -      | - | 741    | 691 | 992   | 652   | 691 | 902   |
| Stage 1              | -      | - | -      | -    | -      | - | 928    | 828 | -     | 837   | 804 | -     |
| Stage 2              | -      | - | -      | -    | -      | - | 874    | 796 | -     | 810   | 820 | -     |
| Platoon blocked, %   | -      | - | -      | -    | -      | - | -      | -   | -     | -     | -   | -     |
| Mov Cap-1 Maneuver   | 1498   | - | -      | 1533 | -      | - | 699    | 679 | 988   | 565   | 679 | 901   |
| Mov Cap-2 Maneuver   | -      | - | -      | -    | -      | - | 699    | 679 | -     | 565   | 679 | -     |
| Stage 1              | -      | - | -      | -    | -      | - | 919    | 820 | -     | 830   | 798 | -     |
| Stage 2              | -      | - | -      | -    | -      | - | 827    | 790 | -     | 700   | 812 | -     |

| Approach             | EB  | WB  | NB   | SB   |
|----------------------|-----|-----|------|------|
| HCM Control Delay, s | 0.9 | 0.6 | 10.8 | 10.2 |
| HCM LOS              |     |     | B    | B    |

| Minor Lane/Major Mvmt | NBLn1 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 748   | 1498  | -   | -   | 1533  | -   | -   | 735   |
| HCM Lane V/C Ratio    | 0.171 | 0.007 | -   | -   | 0.007 | -   | -   | 0.063 |
| HCM Control Delay (s) | 10.8  | 7.4   | 0   | -   | 7.4   | 0   | -   | 10.2  |
| HCM Lane LOS          | B     | A     | A   | -   | A     | A   | -   | B     |
| HCM 95th %tile Q(veh) | 0.6   | 0     | -   | -   | 0     | -   | -   | 0.2   |

HCM 6th Signalized Intersection Capacity Analysis  
 7: Veterans Parkway & 8th Street 2021, AM Peak

07/21/2021



| Movement                        | EBL  | EBT       | EBR  | WBL  | WBT        | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------------|------|-----------|------|------|------------|------|------|------|------|------|------|------|
| Lane Configurations             | ↶    | ↷         |      | ↶    | ↷          |      | ↶    | ↷    |      | ↶    | ↷    |      |
| Traffic Volume (veh/h)          | 25   | 35        | 20   | 25   | 40         | 35   | 25   | 530  | 15   | 55   | 525  | 30   |
| Future Volume (veh/h)           | 25   | 35        | 20   | 25   | 40         | 35   | 25   | 530  | 15   | 55   | 525  | 30   |
| Number                          | 7    | 4         | 14   | 3    | 8          | 18   | 5    | 2    | 12   | 1    | 6    | 16   |
| Initial Q, veh                  | 0    | 0         | 0    | 0    | 0          | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj (A_pbT)            | 1.00 |           | 0.98 | 1.00 |            | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.98 |
| Parking Bus Adj                 | 1.00 | 1.00      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach           |      | No        |      |      | No         |      |      | No   |      |      | No   |      |
| Lanes Open During Work Zone     |      |           |      |      |            |      |      |      |      |      |      |      |
| Adj Sat Flow, veh/h/ln          | 1737 | 1796      | 1796 | 1648 | 1767       | 1767 | 1900 | 1826 | 1826 | 1352 | 1811 | 1811 |
| Adj Flow Rate, veh/h            | 39   | 47        | 48   | 33   | 58         | 45   | 42   | 582  | 25   | 76   | 571  | 42   |
| Peak Hour Factor                | 0.64 | 0.75      | 0.42 | 0.75 | 0.69       | 0.78 | 0.59 | 0.91 | 0.60 | 0.72 | 0.92 | 0.72 |
| Percent Heavy Veh, %            | 11   | 7         | 7    | 17   | 9          | 9    | 0    | 5    | 5    | 37   | 6    | 6    |
| Opposing Right Turn Influence   | Yes  |           |      | Yes  |            |      | Yes  |      |      | Yes  |      |      |
| Cap, veh/h                      | 126  | 93        | 94   | 129  | 106        | 82   | 635  | 2334 | 100  | 476  | 2257 | 166  |
| HCM Platoon Ratio               | 1.00 | 1.00      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Prop Arrive On Green            | 0.11 | 0.11      | 0.11 | 0.11 | 0.11       | 0.11 | 0.03 | 0.69 | 0.69 | 0.04 | 0.70 | 0.70 |
| Unsig. Movement Delay           |      |           |      |      |            |      |      |      |      |      |      |      |
| Ln Grp Delay, s/veh             | 56.8 | 0.0       | 52.1 | 55.6 | 0.0        | 52.7 | 5.1  | 7.5  | 7.5  | 5.2  | 7.2  | 7.2  |
| Ln Grp LOS                      | E    | A         | D    | E    | A          | D    | A    | A    | A    | A    | A    | A    |
| Approach Vol, veh/h             |      | 134       |      |      | 136        |      |      | 649  |      |      | 689  |      |
| Approach Delay, s/veh           |      | 53.4      |      |      | 53.4       |      |      | 7.4  |      |      | 7.0  |      |
| Approach LOS                    |      | D         |      |      | D          |      |      | A    |      |      | A    |      |
| Timer:                          |      | 1         | 2    | 3    | 4          | 5    | 6    | 7    | 8    |      |      |      |
| Assigned Phs                    |      | 1         | 2    |      | 4          | 5    | 6    |      | 8    |      |      |      |
| Case No                         |      | 1.1       | 4.0  |      | 6.0        | 1.1  | 4.0  |      | 6.0  |      |      |      |
| Phs Duration (G+Y+Rc), s        |      | 11.1      | 88.6 |      | 20.3       | 10.3 | 89.5 |      | 20.3 |      |      |      |
| Change Period (Y+Rc), s         |      | 6.5       | 6.0  |      | 6.5        | 6.5  | 6.0  |      | 6.5  |      |      |      |
| Max Green (Gmax), s             |      | 9.5       | 67.0 |      | 24.5       | 9.5  | 67.0 |      | 24.5 |      |      |      |
| Max Allow Headway (MAH), s      |      | 3.9       | 6.1  |      | 5.1        | 3.8  | 6.2  |      | 5.2  |      |      |      |
| Max Q Clear (g_c+I1), s         |      | 4.1       | 9.8  |      | 13.0       | 2.8  | 9.8  |      | 11.9 |      |      |      |
| Green Ext Time (g_e), s         |      | 0.1       | 6.1  |      | 0.4        | 0.0  | 6.2  |      | 0.5  |      |      |      |
| Prob of Phs Call (p_c)          |      | 0.92      | 1.00 |      | 1.00       | 0.75 | 1.00 |      | 1.00 |      |      |      |
| Prob of Max Out (p_x)           |      | 0.17      | 0.00 |      | 0.02       | 0.01 | 0.00 |      | 0.01 |      |      |      |
| <b>Left-Turn Movement Data</b>  |      |           |      |      |            |      |      |      |      |      |      |      |
| Assigned Mvmt                   |      | 1         |      |      | 7          | 5    |      |      | 3    |      |      |      |
| Mvmt Sat Flow, veh/h            |      | 1287      |      |      | 1197       | 1810 |      |      | 1144 |      |      |      |
| <b>Through Movement Data</b>    |      |           |      |      |            |      |      |      |      |      |      |      |
| Assigned Mvmt                   |      |           | 2    |      | 4          |      | 6    |      | 8    |      |      |      |
| Mvmt Sat Flow, veh/h            |      |           | 3389 |      | 807        |      | 3244 |      | 921  |      |      |      |
| <b>Right-Turn Movement Data</b> |      |           |      |      |            |      |      |      |      |      |      |      |
| Assigned Mvmt                   |      |           | 12   |      | 14         |      | 16   |      | 18   |      |      |      |
| Mvmt Sat Flow, veh/h            |      |           | 145  |      | 824        |      | 238  |      | 715  |      |      |      |
| <b>Left Lane Group Data</b>     |      |           |      |      |            |      |      |      |      |      |      |      |
| Assigned Mvmt                   |      | 1         | 0    | 0    | 7          | 5    | 0    | 0    | 3    |      |      |      |
| Lane Assignment                 |      | L (Pr/Pm) |      |      | LL (Pr/Pm) |      |      |      | L    |      |      |      |



HCM 6th Signalized Intersection Capacity Analysis  
 7: Veterans Parkway & 8th Street 2021, AM Peak

07/21/2021

|                                     |      |      |      |      |      |      |      |      |
|-------------------------------------|------|------|------|------|------|------|------|------|
| Lanes in Grp                        | 1    | 0    | 0    | 1    | 1    | 0    | 0    | 1    |
| Grp Vol (v), veh/h                  | 76   | 0    | 0    | 39   | 42   | 0    | 0    | 33   |
| Grp Sat Flow (s), veh/h/ln          | 1287 | 0    | 0    | 1197 | 1810 | 0    | 0    | 1144 |
| Q Serve Time (g_s), s               | 2.1  | 0.0  | 0.0  | 3.8  | 0.8  | 0.0  | 0.0  | 3.4  |
| Cycle Q Clear Time (g_c), s         | 2.1  | 0.0  | 0.0  | 11.0 | 0.8  | 0.0  | 0.0  | 9.9  |
| Perm LT Sat Flow (s_l), veh/h/ln    | 588  | 0    | 0    | 1197 | 821  | 0    | 0    | 1144 |
| Shared LT Sat Flow (s_sh), veh/h/ln | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Perm LT Eff Green (g_p), s          | 82.6 | 0.0  | 0.0  | 13.8 | 82.6 | 0.0  | 0.0  | 13.8 |
| Perm LT Serve Time (g_u), s         | 74.9 | 0.0  | 0.0  | 6.6  | 75.7 | 0.0  | 0.0  | 7.2  |
| Perm LT Q Serve Time (g_ps), s      | 1.2  | 0.0  | 0.0  | 3.8  | 0.4  | 0.0  | 0.0  | 3.4  |
| Time to First Blk (g_f), s          | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Serve Time pre Blk (g_fs), s        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Prop LT Inside Lane (P_L)           | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| Lane Grp Cap (c), veh/h             | 476  | 0    | 0    | 126  | 635  | 0    | 0    | 129  |
| V/C Ratio (X)                       | 0.16 | 0.00 | 0.00 | 0.31 | 0.07 | 0.00 | 0.00 | 0.26 |
| Avail Cap (c_a), veh/h              | 529  | 0    | 0    | 233  | 721  | 0    | 0    | 231  |
| Upstream Filter (I)                 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| Uniform Delay (d1), s/veh           | 5.0  | 0.0  | 0.0  | 55.4 | 5.0  | 0.0  | 0.0  | 54.6 |
| Incr Delay (d2), s/veh              | 0.2  | 0.0  | 0.0  | 1.4  | 0.0  | 0.0  | 0.0  | 1.0  |
| Initial Q Delay (d3), s/veh         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Control Delay (d), s/veh            | 5.2  | 0.0  | 0.0  | 56.8 | 5.1  | 0.0  | 0.0  | 55.6 |
| 1st-Term Q (Q1), veh/ln             | 0.5  | 0.0  | 0.0  | 1.2  | 0.3  | 0.0  | 0.0  | 1.0  |
| 2nd-Term Q (Q2), veh/ln             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| 3rd-Term Q (Q3), veh/ln             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile Back of Q Factor (f_B%)        | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| %ile Back of Q (50%), veh/ln        | 0.5  | 0.0  | 0.0  | 1.2  | 0.3  | 0.0  | 0.0  | 1.0  |
| %ile Storage Ratio (RQ%)            | 0.14 | 0.00 | 0.00 | 0.41 | 0.09 | 0.00 | 0.00 | 0.44 |
| Initial Q (Qb), veh                 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Final (Residual) Q (Qe), veh        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Delay (ds), s/veh               | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Q (Qs), veh                     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Cap (cs), veh/h                 | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Q Clear Time (tc), h        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| <b>Middle Lane Group Data</b>       |      |      |      |      |      |      |      |      |
| Assigned Mvmt                       | 0    | 2    | 0    | 4    | 0    | 6    | 0    | 8    |
| Lane Assignment                     | T    |      |      | T    |      |      |      |      |
| Lanes in Grp                        | 0    | 1    | 0    | 0    | 0    | 1    | 0    | 0    |
| Grp Vol (v), veh/h                  | 0    | 298  | 0    | 0    | 0    | 302  | 0    | 0    |
| Grp Sat Flow (s), veh/h/ln          | 0    | 1735 | 0    | 0    | 0    | 1721 | 0    | 0    |
| Q Serve Time (g_s), s               | 0.0  | 7.7  | 0.0  | 0.0  | 0.0  | 7.8  | 0.0  | 0.0  |
| Cycle Q Clear Time (g_c), s         | 0.0  | 7.7  | 0.0  | 0.0  | 0.0  | 7.8  | 0.0  | 0.0  |
| Lane Grp Cap (c), veh/h             | 0    | 1195 | 0    | 0    | 0    | 1197 | 0    | 0    |
| V/C Ratio (X)                       | 0.00 | 0.25 | 0.00 | 0.00 | 0.00 | 0.25 | 0.00 | 0.00 |
| Avail Cap (c_a), veh/h              | 0    | 1195 | 0    | 0    | 0    | 1197 | 0    | 0    |
| Upstream Filter (I)                 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d1), s/veh           | 0.0  | 7.0  | 0.0  | 0.0  | 0.0  | 6.7  | 0.0  | 0.0  |
| Incr Delay (d2), s/veh              | 0.0  | 0.5  | 0.0  | 0.0  | 0.0  | 0.5  | 0.0  | 0.0  |
| Initial Q Delay (d3), s/veh         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Control Delay (d), s/veh            | 0.0  | 7.5  | 0.0  | 0.0  | 0.0  | 7.2  | 0.0  | 0.0  |
| 1st-Term Q (Q1), veh/ln             | 0.0  | 2.6  | 0.0  | 0.0  | 0.0  | 2.6  | 0.0  | 0.0  |
| 2nd-Term Q (Q2), veh/ln             | 0.0  | 0.2  | 0.0  | 0.0  | 0.0  | 0.2  | 0.0  | 0.0  |

# HCM 6th Signalized Intersection Capacity Analysis

## 7: Veterans Parkway & 8th Street 2021, AM Peak

07/21/2021

|                              |      |      |      |      |      |      |      |      |
|------------------------------|------|------|------|------|------|------|------|------|
| 3rd-Term Q (Q3), veh/ln      | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile Back of Q Factor (f_B%) | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| %ile Back of Q (50%), veh/ln | 0.0  | 2.8  | 0.0  | 0.0  | 0.0  | 2.8  | 0.0  | 0.0  |
| %ile Storage Ratio (RQ%)     | 0.00 | 0.13 | 0.00 | 0.00 | 0.00 | 0.13 | 0.00 | 0.00 |
| Initial Q (Qb), veh          | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Final (Residual) Q (Qe), veh | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Delay (ds), s/veh        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Q (Qs), veh              | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Cap (cs), veh/h          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Q Clear Time (tc), h | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |

### Right Lane Group Data

|                                  |      |      |      |      |      |      |      |      |
|----------------------------------|------|------|------|------|------|------|------|------|
| Assigned Mvmt                    | 0    | 12   | 0    | 14   | 0    | 16   | 0    | 18   |
| Lane Assignment                  |      | T+R  |      | T+R  |      | T+R  |      | T+R  |
| Lanes in Grp                     | 0    | 1    | 0    | 1    | 0    | 1    | 0    | 1    |
| Grp Vol (v), veh/h               | 0    | 309  | 0    | 95   | 0    | 311  | 0    | 103  |
| Grp Sat Flow (s), veh/h/ln       | 0    | 1799 | 0    | 1632 | 0    | 1762 | 0    | 1636 |
| Q Serve Time (g_s), s            | 0.0  | 7.8  | 0.0  | 6.6  | 0.0  | 7.8  | 0.0  | 7.1  |
| Cycle Q Clear Time (g_c), s      | 0.0  | 7.8  | 0.0  | 6.6  | 0.0  | 7.8  | 0.0  | 7.1  |
| Prot RT Sat Flow (s_R), veh/h/ln | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Prot RT Eff Green (g_R), s       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Prop RT Outside Lane (P_R)       | 0.00 | 0.08 | 0.00 | 0.51 | 0.00 | 0.14 | 0.00 | 0.44 |
| Lane Grp Cap (c), veh/h          | 0    | 1239 | 0    | 187  | 0    | 1226 | 0    | 187  |
| V/C Ratio (X)                    | 0.00 | 0.25 | 0.00 | 0.51 | 0.00 | 0.25 | 0.00 | 0.55 |
| Avail Cap (c_a), veh/h           | 0    | 1239 | 0    | 333  | 0    | 1226 | 0    | 334  |
| Upstream Filter (I)              | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d1), s/veh        | 0.0  | 7.0  | 0.0  | 49.9 | 0.0  | 6.7  | 0.0  | 50.2 |
| Incr Delay (d2), s/veh           | 0.0  | 0.5  | 0.0  | 2.1  | 0.0  | 0.5  | 0.0  | 2.5  |
| Initial Q Delay (d3), s/veh      | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Control Delay (d), s/veh         | 0.0  | 7.5  | 0.0  | 52.1 | 0.0  | 7.2  | 0.0  | 52.7 |
| 1st-Term Q (Q1), veh/ln          | 0.0  | 2.7  | 0.0  | 2.7  | 0.0  | 2.7  | 0.0  | 2.9  |
| 2nd-Term Q (Q2), veh/ln          | 0.0  | 0.2  | 0.0  | 0.1  | 0.0  | 0.2  | 0.0  | 0.1  |
| 3rd-Term Q (Q3), veh/ln          | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile Back of Q Factor (f_B%)     | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| %ile Back of Q (50%), veh/ln     | 0.0  | 2.9  | 0.0  | 2.8  | 0.0  | 2.8  | 0.0  | 3.1  |
| %ile Storage Ratio (RQ%)         | 0.00 | 0.14 | 0.00 | 0.21 | 0.00 | 0.13 | 0.00 | 0.23 |
| Initial Q (Qb), veh              | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Final (Residual) Q (Qe), veh     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Delay (ds), s/veh            | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Q (Qs), veh                  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Cap (cs), veh/h              | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Q Clear Time (tc), h     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |

### Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 14.9 |
| HCM 6th LOS        | B    |

### Notes

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

HCM 6th TWSC

1: Front Avenue & 8th Street 2021, PM Peak

07/21/2021

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 5.4  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 0    | 5    | 0    | 5    | 0    | 40   | 0    | 25   | 5    | 25   | 20   | 0    |
| Future Vol, veh/h        | 0    | 5    | 0    | 5    | 0    | 40   | 0    | 25   | 5    | 25   | 20   | 0    |
| Conflicting Peds, #/hr   | 1    | 0    | 3    | 3    | 0    | 1    | 6    | 0    | 1    | 1    | 0    | 6    |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 92   | 33   | 92   | 50   | 92   | 71   | 92   | 68   | 75   | 68   | 75   | 92   |
| Heavy Vehicles, %        | 0    | 0    | 0    | 0    | 0    | 3    | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 0    | 15   | 0    | 10   | 0    | 56   | 0    | 37   | 7    | 37   | 27   | 0    |

| Major/Minor          | Minor2 |     | Minor1 |     | Major1 |      |      | Major2 |   |      |   |   |
|----------------------|--------|-----|--------|-----|--------|------|------|--------|---|------|---|---|
| Conflicting Flow All | 127    | 152 | 23     | 140 | 149    | 24   | 33   | 0      | 0 | 45   | 0 | 0 |
| Stage 1              | 107    | 107 | -      | 42  | 42     | -    | -    | -      | - | -    | - | - |
| Stage 2              | 20     | 45  | -      | 98  | 107    | -    | -    | -      | - | -    | - | - |
| Critical Hdwy        | 7.5    | 6.5 | 6.9    | 7.5 | 6.5    | 6.96 | 4.1  | -      | - | 4.1  | - | - |
| Critical Hdwy Stg 1  | 6.5    | 5.5 | -      | 6.5 | 5.5    | -    | -    | -      | - | -    | - | - |
| Critical Hdwy Stg 2  | 6.5    | 5.5 | -      | 6.5 | 5.5    | -    | -    | -      | - | -    | - | - |
| Follow-up Hdwy       | 3.5    | 4   | 3.3    | 3.5 | 4      | 3.33 | 2.2  | -      | - | 2.2  | - | - |
| Pot Cap-1 Maneuver   | 839    | 743 | 1055   | 822 | 746    | 1044 | 1592 | -      | - | 1576 | - | - |
| Stage 1              | 893    | 811 | -      | 973 | 864    | -    | -    | -      | - | -    | - | - |
| Stage 2              | 1002   | 861 | -      | 903 | 811    | -    | -    | -      | - | -    | - | - |
| Platoon blocked, %   |        |     |        |     |        |      |      | -      | - | -    | - | - |
| Mov Cap-1 Maneuver   | 774    | 720 | 1046   | 791 | 723    | 1042 | 1583 | -      | - | 1574 | - | - |
| Mov Cap-2 Maneuver   | 774    | 720 | -      | 791 | 723    | -    | -    | -      | - | -    | - | - |
| Stage 1              | 888    | 787 | -      | 972 | 863    | -    | -    | -      | - | -    | - | - |
| Stage 2              | 947    | 860 | -      | 862 | 787    | -    | -    | -      | - | -    | - | - |

| Approach             | EB   |  | WB  |  | NB |  | SB  |  |
|----------------------|------|--|-----|--|----|--|-----|--|
| HCM Control Delay, s | 10.1 |  | 8.9 |  | 0  |  | 4.3 |  |
| HCM LOS              | B    |  | A   |  |    |  |     |  |

| Minor Lane/Major Mvmt | NBL  | NBT | NBR | EBLn1WBLn1 | SBL   | SBT   | SBR |
|-----------------------|------|-----|-----|------------|-------|-------|-----|
| Capacity (veh/h)      | 1583 | -   | -   | 720        | 994   | 1574  | -   |
| HCM Lane V/C Ratio    | -    | -   | -   | 0.021      | 0.067 | 0.023 | -   |
| HCM Control Delay (s) | 0    | -   | -   | 10.1       | 8.9   | 7.3   | 0   |
| HCM Lane LOS          | A    | -   | -   | B          | A     | A     | A   |
| HCM 95th %tile Q(veh) | 0    | -   | -   | 0.1        | 0.2   | 0.1   | -   |

HCM 6th TWSC  
2: Broadway & 8th Street 2021, PM Peak

07/21/2021

| Intersection             |      |      |      |       |       |       |      |       |      |      |      |      |
|--------------------------|------|------|------|-------|-------|-------|------|-------|------|------|------|------|
| Int Delay, s/veh         | 5.5  |      |      |       |       |       |      |       |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL   | WBT   | WBR   | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↔    |      |       | ↔     |       |      |       |      |      | ↔    |      |
| Traffic Vol, veh/h       | 0    | 45   | 5    | 5     | 65    | 0     | 0    | 0     | 0    | 5    | 10   | 5    |
| Future Vol, veh/h        | 0    | 45   | 5    | 5     | 65    | 0     | 0    | 0     | 0    | 5    | 10   | 5    |
| Conflicting Peds, #/hr   | 0    | 0    | 1    | 1     | 0     | 0     | 4    | 0     | 10   | 0    | 0    | 4    |
| Sign Control             | Stop | Stop | Stop | Yield | Yield | Yield | Free | Free  | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -     | -     | None  | -    | -     | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -     | -     | -     | -    | -     | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -     | 16983 | -     | -    | 16983 | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -     | 0     | -     | -    | 0     | -    | -    | 0    | -    |
| Peak Hour Factor         | 25   | 73   | 25   | 50    | 80    | 38    | 25   | 58    | 63   | 25   | 50   | 63   |
| Heavy Vehicles, %        | 0    | 0    | 0    | 0     | 1     | 0     | 0    | 0     | 20   | 0    | 0    | 0    |
| Mvmt Flow                | 0    | 62   | 20   | 10    | 81    | 0     | 0    | 0     | 0    | 20   | 20   | 8    |

| Major/Minor          | Minor2 |     |      | Major2 |  |     |
|----------------------|--------|-----|------|--------|--|-----|
| Conflicting Flow All | -      | 68  | 29   |        |  | 0   |
| Stage 1              | -      | 68  | -    |        |  | -   |
| Stage 2              | -      | 0   | -    |        |  | -   |
| Critical Hdwy        | -      | 6.5 | 6.2  |        |  | 4.1 |
| Critical Hdwy Stg 1  | -      | 5.5 | -    |        |  | -   |
| Critical Hdwy Stg 2  | -      | -   | -    |        |  | -   |
| Follow-up Hdwy       | -      | 4   | 3.3  |        |  | 2.2 |
| Pot Cap-1 Maneuver   | 0      | 826 | 1052 |        |  | -   |
| Stage 1              | 0      | 842 | -    |        |  | -   |
| Stage 2              | 0      | -   | -    |        |  | -   |
| Platoon blocked, %   |        |     |      |        |  | -   |
| Mov Cap-1 Maneuver   | -      | 0   | 1048 |        |  | -   |
| Mov Cap-2 Maneuver   | -      | 0   | -    |        |  | -   |
| Stage 1              | -      | 0   | -    |        |  | -   |
| Stage 2              | -      | 0   | -    |        |  | -   |

| Approach             | EB  | SB |
|----------------------|-----|----|
| HCM Control Delay, s | 8.7 |    |
| HCM LOS              | A   |    |

| Minor Lane/Major Mvmt | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-----|
| Capacity (veh/h)      | 1048  | -   | -   | -   |
| HCM Lane V/C Ratio    | 0.078 | -   | -   | -   |
| HCM Control Delay (s) | 8.7   | -   | -   | -   |
| HCM Lane LOS          | A     | -   | -   | -   |
| HCM 95th %tile Q(veh) | 0.3   | -   | -   | -   |

HCM 6th TWSC  
 3: Broadway & 8th Street 2021, PM Peak

07/21/2021

| Intersection             |       |       |       |      |      |      |      |      |      |      |       |      |
|--------------------------|-------|-------|-------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh         | 6.5   |       |       |      |      |      |      |      |      |      |       |      |
| Movement                 | EBL   | EBT   | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
| Lane Configurations      |       | ↔     |       |      | ↔    |      |      | ↔    |      |      |       |      |
| Traffic Vol, veh/h       | 5     | 40    | 0     | 0    | 70   | 5    | 5    | 5    | 5    | 0    | 0     | 0    |
| Future Vol, veh/h        | 5     | 40    | 0     | 0    | 70   | 5    | 5    | 5    | 5    | 0    | 0     | 0    |
| Conflicting Peds, #/hr   | 0     | 0     | 1     | 1    | 0    | 0    | 0    | 0    | 10   | 0    | 0     | 0    |
| Sign Control             | Yield | Yield | Yield | Stop | Stop | Stop | Free | Free | Free | Free | Free  | Free |
| RT Channelized           | -     | -     | None  | -    | -    | None | -    | -    | None | -    | -     | None |
| Storage Length           | -     | -     | -     | -    | -    | -    | -    | -    | -    | -    | -     | -    |
| Veh in Median Storage, # | -     | 2     | -     | -    | 0    | -    | -    | 0    | -    | -    | 16965 | -    |
| Grade, %                 | -     | 0     | -     | -    | 0    | -    | -    | 0    | -    | -    | 0     | -    |
| Peak Hour Factor         | 25    | 73    | 25    | 50   | 80   | 38   | 25   | 58   | 63   | 25   | 50    | 63   |
| Heavy Vehicles, %        | 0     | 0     | 0     | 0    | 1    | 0    | 0    | 0    | 20   | 0    | 0     | 0    |
| Mvmt Flow                | 20    | 55    | 0     | 0    | 88   | 13   | 20   | 9    | 8    | 0    | 0     | 0    |

| Major/Minor          | Minor1 |       | Major1 |     |   |
|----------------------|--------|-------|--------|-----|---|
| Conflicting Flow All | -      | 63    | 23     | 0   | 0 |
| Stage 1              | -      | 63    | -      | -   | - |
| Stage 2              | -      | 0     | -      | -   | - |
| Critical Hdwy        | -      | 6.51  | 6.2    | 4.1 | - |
| Critical Hdwy Stg 1  | -      | 5.51  | -      | -   | - |
| Critical Hdwy Stg 2  | -      | -     | -      | -   | - |
| Follow-up Hdwy       | -      | 4.009 | 3.3    | 2.2 | - |
| Pot Cap-1 Maneuver   | 0      | 830   | 1060   | -   | - |
| Stage 1              | 0      | 844   | -      | -   | - |
| Stage 2              | 0      | -     | -      | -   | - |
| Platoon blocked, %   |        |       |        | -   | - |
| Mov Cap-1 Maneuver   | -      | 0     | 1050   | -   | - |
| Mov Cap-2 Maneuver   | -      | 0     | -      | -   | - |
| Stage 1              | -      | 0     | -      | -   | - |
| Stage 2              | -      | 0     | -      | -   | - |

| Approach             | WB  | NB |
|----------------------|-----|----|
| HCM Control Delay, s | 8.8 |    |
| HCM LOS              | A   |    |

| Minor Lane/Major Mvmt | NBL | NBT | NBRWBLn1 |
|-----------------------|-----|-----|----------|
| Capacity (veh/h)      | -   | -   | 1050     |
| HCM Lane V/C Ratio    | -   | -   | 0.096    |
| HCM Control Delay (s) | -   | -   | 8.8      |
| HCM Lane LOS          | -   | -   | A        |
| HCM 95th %tile Q(veh) | -   | -   | 0.3      |

HCM 6th TWSC  
4: First Avenue & 8th Street 2021, PM Peak

07/21/2021

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 3.7  |      |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBU  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 5    | 40   | 5    | 5    | 10   | 65   | 5    | 5    | 10   | 5    | 5    | 20   | 5    |
| Future Vol, veh/h        | 5    | 40   | 5    | 5    | 10   | 65   | 5    | 5    | 10   | 5    | 5    | 20   | 5    |
| Conflicting Peds, #/hr   | 0    | 0    | 2    | 4    | 2    | 0    | 0    | 4    | 0    | 3    | 3    | 0    | 4    |
| Sign Control             | Free | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 25   | 62   | 50   | 25   | 100  | 76   | 63   | 75   | 92   | 88   | 88   | 38   | 38   |
| Heavy Vehicles, %        | 0    | 2    | 0    | 0    | 0    | 2    | 0    | 0    | 0    | 14   | 0    | 0    | 0    |
| Mvmt Flow                | 20   | 65   | 10   | 20   | 10   | 86   | 8    | 7    | 11   | 6    | 6    | 53   | 13   |

| Major/Minor          | Major1 |   |   | Major2 |      |   | Minor1 |     |     | Minor2 |     |     |     |
|----------------------|--------|---|---|--------|------|---|--------|-----|-----|--------|-----|-----|-----|
| Conflicting Flow All | 94     | 0 | 0 | -      | 77   | 0 | 0      | 259 | 266 | 75     | 232 | 267 | 94  |
| Stage 1              | -      | - | - | -      | -    | - | -      | 112 | 112 | -      | 110 | 150 | -   |
| Stage 2              | -      | - | - | -      | -    | - | -      | 147 | 154 | -      | 122 | 117 | -   |
| Critical Hdwy        | 4.1    | - | - | -      | 4.1  | - | -      | 7.1 | 6.5 | 6.34   | 7.1 | 6.5 | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | -    | - | -      | 6.1 | 5.5 | -      | 6.1 | 5.5 | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | -    | - | -      | 6.1 | 5.5 | -      | 6.1 | 5.5 | -   |
| Follow-up Hdwy       | 2.2    | - | - | -      | 2.2  | - | -      | 3.5 | 4   | 3.426  | 3.5 | 4   | 3.3 |
| Pot Cap-1 Maneuver   | 1513   | - | - | -      | 1535 | - | -      | 698 | 643 | 954    | 727 | 642 | 968 |
| Stage 1              | -      | - | - | -      | -    | - | -      | 898 | 807 | -      | 900 | 777 | -   |
| Stage 2              | -      | - | - | -      | -    | - | -      | 860 | 774 | -      | 887 | 803 | -   |
| Platoon blocked, %   | -      | - | - | -      | -    | - | -      | -   | -   | -      | -   | -   | -   |
| Mov Cap-1 Maneuver   | 1513   | - | - | ~      | ~    | - | -      | 634 | 633 | 949    | 704 | 632 | 964 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | -    | - | -      | 634 | 633 | -      | 704 | 632 | -   |
| Stage 1              | -      | - | - | -      | -    | - | -      | 884 | 794 | -      | 887 | 777 | -   |
| Stage 2              | -      | - | - | -      | -    | - | -      | 788 | 774 | -      | 855 | 790 | -   |

| Approach             | EB  | WB | NB   | SB   |
|----------------------|-----|----|------|------|
| HCM Control Delay, s | 1.6 |    | 10.4 | 10.9 |
| HCM LOS              |     |    | B    | B    |

| Minor Lane/Major Mvmt | NBLn1 | EBL   | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-----|-----|-----|-------|
| Capacity (veh/h)      | 689   | 1513  | -   | -   | ~   | -   | -   | 681   |
| HCM Lane V/C Ratio    | 0.034 | 0.013 | -   | -   | ~   | -   | -   | 0.105 |
| HCM Control Delay (s) | 10.4  | 7.4   | 0   | -   | -   | -   | -   | 10.9  |
| HCM Lane LOS          | B     | A     | A   | -   | -   | -   | -   | B     |
| HCM 95th %tile Q(veh) | 0.1   | 0     | -   | -   | ~   | -   | -   | 0.3   |

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

# HCM 6th TWSC

## 5: Second Avenue & 8th Street 2021, PM Peak

07/21/2021

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 5.6  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 5    | 50   | 5    | 15   | 70   | 5    | 5    | 25   | 10   | 10   | 45   | 15   |
| Future Vol, veh/h        | 5    | 50   | 5    | 15   | 70   | 5    | 5    | 25   | 10   | 10   | 45   | 15   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 58   | 64   | 100  | 58   | 86   | 58   | 25   | 75   | 83   | 50   | 79   | 54   |
| Heavy Vehicles, %        | 0    | 4    | 0    | 0    | 0    | 29   | 0    | 0    | 0    | 8    | 2    | 8    |
| Mvmt Flow                | 9    | 78   | 5    | 26   | 81   | 9    | 20   | 33   | 12   | 20   | 57   | 28   |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |     |     | Minor2 |       |       |
|----------------------|--------|---|---|--------|---|---|--------|-----|-----|--------|-------|-------|
| Conflicting Flow All | 90     | 0 | 0 | 83     | 0 | 0 | 279    | 241 | 81  | 259    | 239   | 86    |
| Stage 1              | -      | - | - | -      | - | - | 99     | 99  | -   | 138    | 138   | -     |
| Stage 2              | -      | - | - | -      | - | - | 180    | 142 | -   | 121    | 101   | -     |
| Critical Hdwy        | 4.1    | - | - | 4.1    | - | - | 7.1    | 6.5 | 6.2 | 7.18   | 6.52  | 6.28  |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.1    | 5.5 | -   | 6.18   | 5.52  | -     |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.1    | 5.5 | -   | 6.18   | 5.52  | -     |
| Follow-up Hdwy       | 2.2    | - | - | 2.2    | - | - | 3.5    | 4   | 3.3 | 3.572  | 4.018 | 3.372 |
| Pot Cap-1 Maneuver   | 1518   | - | - | 1527   | - | - | 677    | 664 | 985 | 682    | 662   | 956   |
| Stage 1              | -      | - | - | -      | - | - | 912    | 817 | -   | 851    | 782   | -     |
| Stage 2              | -      | - | - | -      | - | - | 826    | 783 | -   | 869    | 811   | -     |
| Platoon blocked, %   |        | - | - |        | - | - |        |     |     |        |       |       |
| Mov Cap-1 Maneuver   | 1518   | - | - | 1527   | - | - | 602    | 648 | 985 | 636    | 646   | 956   |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 602    | 648 | -   | 636    | 646   | -     |
| Stage 1              | -      | - | - | -      | - | - | 907    | 812 | -   | 846    | 768   | -     |
| Stage 2              | -      | - | - | -      | - | - | 729    | 769 | -   | 818    | 806   | -     |

| Approach             | EB  |  |  | WB  |  |  | NB   |  |  | SB |  |  |
|----------------------|-----|--|--|-----|--|--|------|--|--|----|--|--|
| HCM Control Delay, s | 0.7 |  |  | 1.7 |  |  | 10.9 |  |  | 11 |  |  |
| HCM LOS              |     |  |  |     |  |  | B    |  |  | B  |  |  |

| Minor Lane/Major Mvmt | NBLn1 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 675   | 1518  | -   | -   | 1527  | -   | -   | 704   |
| HCM Lane V/C Ratio    | 0.097 | 0.006 | -   | -   | 0.017 | -   | -   | 0.149 |
| HCM Control Delay (s) | 10.9  | 7.4   | 0   | -   | 7.4   | 0   | -   | 11    |
| HCM Lane LOS          | B     | A     | A   | -   | A     | A   | -   | B     |
| HCM 95th %tile Q(veh) | 0.3   | 0     | -   | -   | 0.1   | -   | -   | 0.5   |

HCM 6th TWSC  
6: Third Avenue & 8th Street 2021, PM Peak

07/21/2021

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 3.6  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 10   | 60   | 5    | 10   | 80   | 5    | 5    | 20   | 10   | 5    | 15   | 5    |
| Future Vol, veh/h        | 10   | 60   | 5    | 10   | 80   | 5    | 5    | 20   | 10   | 5    | 15   | 5    |
| Conflicting Peds, #/hr   | 0    | 0    | 4    | 4    | 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           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 67   | 64   | 50   | 63   | 82   | 38   | 25   | 75   | 67   | 100  | 80   | 75   |
| Heavy Vehicles, %        | 11   | 3    | 0    | 0    | 2    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 15   | 94   | 10   | 16   | 98   | 13   | 20   | 27   | 15   | 5    | 19   | 7    |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |     |     | Minor2 |     |     |
|----------------------|--------|---|---|--------|---|---|--------|-----|-----|--------|-----|-----|
| Conflicting Flow All | 111    | 0 | 0 | 108    | 0 | 0 | 283    | 276 | 103 | 287    | 275 | 105 |
| Stage 1              | -      | - | - | -      | - | - | 133    | 133 | -   | 137    | 137 | -   |
| Stage 2              | -      | - | - | -      | - | - | 150    | 143 | -   | 150    | 138 | -   |
| Critical Hdwy        | 4.21   | - | - | 4.1    | - | - | 7.1    | 6.5 | 6.2 | 7.1    | 6.5 | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.1    | 5.5 | -   | 6.1    | 5.5 | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.1    | 5.5 | -   | 6.1    | 5.5 | -   |
| Follow-up Hdwy       | 2.299  | - | - | 2.2    | - | - | 3.5    | 4   | 3.3 | 3.5    | 4   | 3.3 |
| Pot Cap-1 Maneuver   | 1425   | - | - | 1495   | - | - | 673    | 635 | 957 | 669    | 636 | 955 |
| Stage 1              | -      | - | - | -      | - | - | 875    | 790 | -   | 871    | 787 | -   |
| Stage 2              | -      | - | - | -      | - | - | 857    | 782 | -   | 857    | 786 | -   |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -   | -   | -      | -   | -   |
| Mov Cap-1 Maneuver   | 1425   | - | - | 1489   | - | - | 639    | 618 | 953 | 626    | 619 | 955 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 639    | 618 | -   | 626    | 619 | -   |
| Stage 1              | -      | - | - | -      | - | - | 862    | 778 | -   | 861    | 778 | -   |
| Stage 2              | -      | - | - | -      | - | - | 821    | 773 | -   | 806    | 774 | -   |

| Approach             | EB  |  |  | WB  |  |  | NB   |  |  | SB   |  |  |
|----------------------|-----|--|--|-----|--|--|------|--|--|------|--|--|
| HCM Control Delay, s | 0.9 |  |  | 0.9 |  |  | 10.8 |  |  | 10.6 |  |  |
| HCM LOS              |     |  |  |     |  |  | B    |  |  | B    |  |  |

| Minor Lane/Major Mvmt | NBLn1 | EBL  | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 684   | 1425 | -   | -   | 1489  | -   | -   | 672   |
| HCM Lane V/C Ratio    | 0.09  | 0.01 | -   | -   | 0.011 | -   | -   | 0.045 |
| HCM Control Delay (s) | 10.8  | 7.6  | 0   | -   | 7.4   | 0   | -   | 10.6  |
| HCM Lane LOS          | B     | A    | A   | -   | A     | A   | -   | B     |
| HCM 95th %tile Q(veh) | 0.3   | 0    | -   | -   | 0     | -   | -   | 0.1   |



HCM 6th Signalized Intersection Capacity Analysis  
 7: Veterans Parkway & 8th Street 2021, PM Peak

07/21/2021



| Movement                      | EBL  | EBT       | EBR   | WBL  | WBT        | WBR  | NBL   | NBT  | NBR  | SBL  | SBT  | SBR  |
|-------------------------------|------|-----------|-------|------|------------|------|-------|------|------|------|------|------|
| Lane Configurations           | ↶    | ↷         |       | ↶    | ↷          |      | ↶     | ↷    |      | ↶    | ↷    |      |
| Traffic Volume (veh/h)        | 25   | 30        | 15    | 35   | 50         | 55   | 25    | 540  | 15   | 40   | 600  | 15   |
| Future Volume (veh/h)         | 25   | 30        | 15    | 35   | 50         | 55   | 25    | 540  | 15   | 40   | 600  | 15   |
| Number                        | 7    | 4         | 14    | 3    | 8          | 18   | 5     | 2    | 12   | 1    | 6    | 16   |
| Initial Q, veh                | 0    | 0         | 0     | 0    | 0          | 0    | 0     | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj (A_pbT)          | 1.00 |           | 1.00  | 1.00 |            | 1.00 | 1.00  |      | 1.00 | 1.00 |      | 1.00 |
| Parking Bus Adj               | 1.00 | 1.00      | 1.00  | 1.00 | 1.00       | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach         |      | No        |       |      | No         |      |       | No   |      |      | No   |      |
| Lanes Open During Work Zone   |      |           |       |      |            |      |       |      |      |      |      |      |
| Adj Sat Flow, veh/h/ln        | 1900 | 1856      | 1856  | 1900 | 1870       | 1870 | 1841  | 1885 | 1885 | 1707 | 1885 | 1885 |
| Adj Flow Rate, veh/h          | 41   | 50        | 37    | 43   | 68         | 66   | 36    | 593  | 20   | 42   | 750  | 18   |
| Peak Hour Factor              | 0.61 | 0.60      | 0.41  | 0.82 | 0.74       | 0.83 | 0.69  | 0.91 | 0.75 | 0.95 | 0.80 | 0.85 |
| Percent Heavy Veh, %          | 0    | 3         | 3     | 0    | 2          | 2    | 4     | 1    | 1    | 13   | 1    | 1    |
| Opposing Right Turn Influence | Yes  |           |       | Yes  |            |      | Yes   |      |      | Yes  |      |      |
| Cap, veh/h                    | 120  | 126       | 93    | 159  | 111        | 108  | 534   | 2502 | 84   | 577  | 2536 | 61   |
| HCM Platoon Ratio             | 1.00 | 1.00      | 1.00  | 1.00 | 1.00       | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Prop Arrive On Green          | 0.13 | 0.13      | 0.13  | 0.13 | 0.13       | 0.13 | 0.03  | 0.71 | 0.71 | 0.03 | 0.71 | 0.71 |
| Unsig. Movement Delay         |      |           |       |      |            |      |       |      |      |      |      |      |
| Ln Grp Delay, s/veh           | 66.4 | 0.0       | 57.2  | 62.0 | 0.0        | 60.5 | 5.5   | 7.6  | 7.6  | 5.3  | 8.1  | 8.0  |
| Ln Grp LOS                    | E    | A         | E     | E    | A          | E    | A     | A    | A    | A    | A    | A    |
| Approach Vol, veh/h           |      | 128       |       |      | 177        |      |       | 649  |      |      | 810  |      |
| Approach Delay, s/veh         |      | 60.2      |       |      | 60.9       |      |       | 7.5  |      |      | 7.9  |      |
| Approach LOS                  |      | E         |       |      | E          |      |       | A    |      |      | A    |      |
| Timer:                        |      | 1         | 2     | 3    | 4          | 5    | 6     | 7    | 8    |      |      |      |
| Assigned Phs                  |      | 1         | 2     |      | 4          | 5    | 6     |      | 8    |      |      |      |
| Case No                       |      | 1.1       | 4.0   |      | 6.0        | 1.1  | 4.0   |      | 6.0  |      |      |      |
| Phs Duration (G+Y+Rc), s      |      | 10.5      | 105.1 |      | 24.4       | 10.3 | 105.3 |      | 24.4 |      |      |      |
| Change Period (Y+Rc), s       |      | 6.5       | 6.0   |      | 6.5        | 6.5  | 6.0   |      | 6.5  |      |      |      |
| Max Green (Gmax), s           |      | 15.5      | 73.0  |      | 32.5       | 12.5 | 76.0  |      | 32.5 |      |      |      |
| Max Allow Headway (MAH), s    |      | 3.8       | 6.1   |      | 5.0        | 3.8  | 6.1   |      | 5.1  |      |      |      |
| Max Q Clear (g_c+I1), s       |      | 3.0       | 10.3  |      | 16.8       | 2.8  | 12.8  |      | 12.8 |      |      |      |
| Green Ext Time (g_e), s       |      | 0.0       | 6.2   |      | 0.5        | 0.0  | 8.4   |      | 0.8  |      |      |      |
| Prob of Phs Call (p_c)        |      | 0.80      | 1.00  |      | 1.00       | 0.75 | 1.00  |      | 1.00 |      |      |      |
| Prob of Max Out (p_x)         |      | 0.00      | 0.00  |      | 0.00       | 0.00 | 0.00  |      | 0.00 |      |      |      |
| Left-Turn Movement Data       |      |           |       |      |            |      |       |      |      |      |      |      |
| Assigned Mvmt                 |      | 1         |       |      | 7          | 5    |       |      | 3    |      |      |      |
| Mvmt Sat Flow, veh/h          |      | 1626      |       |      | 1272       | 1753 |       |      | 1326 |      |      |      |
| Through Movement Data         |      |           |       |      |            |      |       |      |      |      |      |      |
| Assigned Mvmt                 |      |           | 2     |      | 4          |      | 6     |      | 8    |      |      |      |
| Mvmt Sat Flow, veh/h          |      |           | 3535  |      | 988        |      | 3575  |      | 870  |      |      |      |
| Right-Turn Movement Data      |      |           |       |      |            |      |       |      |      |      |      |      |
| Assigned Mvmt                 |      |           | 12    |      | 14         |      | 16    |      | 18   |      |      |      |
| Mvmt Sat Flow, veh/h          |      |           | 119   |      | 731        |      | 86    |      | 844  |      |      |      |
| Left Lane Group Data          |      |           |       |      |            |      |       |      |      |      |      |      |
| Assigned Mvmt                 |      | 1         | 0     | 0    | 7          | 5    | 0     | 0    | 3    |      |      |      |
| Lane Assignment               |      | L (Pr/Pm) |       |      | LL (Pr/Pm) |      |       |      | L    |      |      |      |

# HCM 6th Signalized Intersection Capacity Analysis

## 7: Veterans Parkway & 8th Street 2021, PM Peak

07/21/2021

|                                     |      |      |      |      |      |      |      |      |
|-------------------------------------|------|------|------|------|------|------|------|------|
| Lanes in Grp                        | 1    | 0    | 0    | 1    | 1    | 0    | 0    | 1    |
| Grp Vol (v), veh/h                  | 42   | 0    | 0    | 41   | 36   | 0    | 0    | 43   |
| Grp Sat Flow (s), veh/h/ln          | 1626 | 0    | 0    | 1272 | 1753 | 0    | 0    | 1326 |
| Q Serve Time (g_s), s               | 1.0  | 0.0  | 0.0  | 4.4  | 0.8  | 0.0  | 0.0  | 4.3  |
| Cycle Q Clear Time (g_c), s         | 1.0  | 0.0  | 0.0  | 14.8 | 0.8  | 0.0  | 0.0  | 10.8 |
| Perm LT Sat Flow (s_l), veh/h/ln    | 738  | 0    | 0    | 1272 | 689  | 0    | 0    | 1326 |
| Shared LT Sat Flow (s_sh), veh/h/ln | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Perm LT Eff Green (g_p), s          | 99.1 | 0.0  | 0.0  | 17.9 | 99.1 | 0.0  | 0.0  | 17.9 |
| Perm LT Serve Time (g_u), s         | 90.8 | 0.0  | 0.0  | 7.5  | 88.5 | 0.0  | 0.0  | 11.4 |
| Perm LT Q Serve Time (g_ps), s      | 0.5  | 0.0  | 0.0  | 4.4  | 0.6  | 0.0  | 0.0  | 4.3  |
| Time to First Blk (g_f), s          | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Serve Time pre Blk (g_fs), s        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Prop LT Inside Lane (P_L)           | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| Lane Grp Cap (c), veh/h             | 577  | 0    | 0    | 120  | 534  | 0    | 0    | 159  |
| V/C Ratio (X)                       | 0.07 | 0.00 | 0.00 | 0.34 | 0.07 | 0.00 | 0.00 | 0.27 |
| Avail Cap (c_a), veh/h              | 710  | 0    | 0    | 253  | 644  | 0    | 0    | 298  |
| Upstream Filter (I)                 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| Uniform Delay (d1), s/veh           | 5.2  | 0.0  | 0.0  | 64.8 | 5.5  | 0.0  | 0.0  | 61.1 |
| Incr Delay (d2), s/veh              | 0.1  | 0.0  | 0.0  | 1.7  | 0.1  | 0.0  | 0.0  | 0.9  |
| Initial Q Delay (d3), s/veh         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Control Delay (d), s/veh            | 5.3  | 0.0  | 0.0  | 66.4 | 5.5  | 0.0  | 0.0  | 62.0 |
| 1st-Term Q (Q1), veh/ln             | 0.3  | 0.0  | 0.0  | 1.4  | 0.3  | 0.0  | 0.0  | 1.5  |
| 2nd-Term Q (Q2), veh/ln             | 0.0  | 0.0  | 0.0  | 0.1  | 0.0  | 0.0  | 0.0  | 0.0  |
| 3rd-Term Q (Q3), veh/ln             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile Back of Q Factor (f_B%)        | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| %ile Back of Q (50%), veh/ln        | 0.3  | 0.0  | 0.0  | 1.5  | 0.3  | 0.0  | 0.0  | 1.5  |
| %ile Storage Ratio (RQ%)            | 0.08 | 0.00 | 0.00 | 0.47 | 0.09 | 0.00 | 0.00 | 0.58 |
| Initial Q (Qb), veh                 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Final (Residual) Q (Qe), veh        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Delay (ds), s/veh               | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Q (Qs), veh                     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Cap (cs), veh/h                 | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Q Clear Time (tc), h        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| <b>Middle Lane Group Data</b>       |      |      |      |      |      |      |      |      |
| Assigned Mvmt                       | 0    | 2    | 0    | 4    | 0    | 6    | 0    | 8    |
| Lane Assignment                     |      | T    |      |      |      | T    |      |      |
| Lanes in Grp                        | 0    | 1    | 0    | 0    | 0    | 1    | 0    | 0    |
| Grp Vol (v), veh/h                  | 0    | 300  | 0    | 0    | 0    | 376  | 0    | 0    |
| Grp Sat Flow (s), veh/h/ln          | 0    | 1791 | 0    | 0    | 0    | 1791 | 0    | 0    |
| Q Serve Time (g_s), s               | 0.0  | 8.2  | 0.0  | 0.0  | 0.0  | 10.8 | 0.0  | 0.0  |
| Cycle Q Clear Time (g_c), s         | 0.0  | 8.2  | 0.0  | 0.0  | 0.0  | 10.8 | 0.0  | 0.0  |
| Lane Grp Cap (c), veh/h             | 0    | 1267 | 0    | 0    | 0    | 1271 | 0    | 0    |
| V/C Ratio (X)                       | 0.00 | 0.24 | 0.00 | 0.00 | 0.00 | 0.30 | 0.00 | 0.00 |
| Avail Cap (c_a), veh/h              | 0    | 1267 | 0    | 0    | 0    | 1271 | 0    | 0    |
| Upstream Filter (I)                 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d1), s/veh           | 0.0  | 7.2  | 0.0  | 0.0  | 0.0  | 7.5  | 0.0  | 0.0  |
| Incr Delay (d2), s/veh              | 0.0  | 0.4  | 0.0  | 0.0  | 0.0  | 0.6  | 0.0  | 0.0  |
| Initial Q Delay (d3), s/veh         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Control Delay (d), s/veh            | 0.0  | 7.6  | 0.0  | 0.0  | 0.0  | 8.1  | 0.0  | 0.0  |
| 1st-Term Q (Q1), veh/ln             | 0.0  | 3.0  | 0.0  | 0.0  | 0.0  | 3.9  | 0.0  | 0.0  |
| 2nd-Term Q (Q2), veh/ln             | 0.0  | 0.2  | 0.0  | 0.0  | 0.0  | 0.2  | 0.0  | 0.0  |

# HCM 6th Signalized Intersection Capacity Analysis

## 7: Veterans Parkway & 8th Street 2021, PM Peak

07/21/2021

|                              |      |      |      |      |      |      |      |      |
|------------------------------|------|------|------|------|------|------|------|------|
| 3rd-Term Q (Q3), veh/ln      | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile Back of Q Factor (f_B%) | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| %ile Back of Q (50%), veh/ln | 0.0  | 3.1  | 0.0  | 0.0  | 0.0  | 4.1  | 0.0  | 0.0  |
| %ile Storage Ratio (RQ%)     | 0.00 | 0.14 | 0.00 | 0.00 | 0.00 | 0.18 | 0.00 | 0.00 |
| Initial Q (Qb), veh          | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Final (Residual) Q (Qe), veh | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Delay (ds), s/veh        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Q (Qs), veh              | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Cap (cs), veh/h          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Q Clear Time (tc), h | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |

### Right Lane Group Data

|                                  |      |      |      |      |      |      |      |      |
|----------------------------------|------|------|------|------|------|------|------|------|
| Assigned Mvmt                    | 0    | 12   | 0    | 14   | 0    | 16   | 0    | 18   |
| Lane Assignment                  |      | T+R  |      | T+R  |      | T+R  |      | T+R  |
| Lanes in Grp                     | 0    | 1    | 0    | 1    | 0    | 1    | 0    | 1    |
| Grp Vol (v), veh/h               | 0    | 313  | 0    | 87   | 0    | 392  | 0    | 134  |
| Grp Sat Flow (s), veh/h/ln       | 0    | 1863 | 0    | 1720 | 0    | 1870 | 0    | 1714 |
| Q Serve Time (g_s), s            | 0.0  | 8.3  | 0.0  | 6.5  | 0.0  | 10.8 | 0.0  | 10.4 |
| Cycle Q Clear Time (g_c), s      | 0.0  | 8.3  | 0.0  | 6.5  | 0.0  | 10.8 | 0.0  | 10.4 |
| Prot RT Sat Flow (s_R), veh/h/ln | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Prot RT Eff Green (g_R), s       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Prop RT Outside Lane (P_R)       | 0.00 | 0.06 | 0.00 | 0.43 | 0.00 | 0.05 | 0.00 | 0.49 |
| Lane Grp Cap (c), veh/h          | 0    | 1319 | 0    | 220  | 0    | 1327 | 0    | 219  |
| V/C Ratio (X)                    | 0.00 | 0.24 | 0.00 | 0.40 | 0.00 | 0.30 | 0.00 | 0.61 |
| Avail Cap (c_a), veh/h           | 0    | 1319 | 0    | 399  | 0    | 1327 | 0    | 398  |
| Upstream Filter (I)              | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d1), s/veh        | 0.0  | 7.2  | 0.0  | 56.1 | 0.0  | 7.5  | 0.0  | 57.8 |
| Incr Delay (d2), s/veh           | 0.0  | 0.4  | 0.0  | 1.2  | 0.0  | 0.6  | 0.0  | 2.8  |
| Initial Q Delay (d3), s/veh      | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Control Delay (d), s/veh         | 0.0  | 7.6  | 0.0  | 57.2 | 0.0  | 8.0  | 0.0  | 60.5 |
| 1st-Term Q (Q1), veh/ln          | 0.0  | 3.1  | 0.0  | 2.8  | 0.0  | 4.1  | 0.0  | 4.5  |
| 2nd-Term Q (Q2), veh/ln          | 0.0  | 0.2  | 0.0  | 0.1  | 0.0  | 0.2  | 0.0  | 0.2  |
| 3rd-Term Q (Q3), veh/ln          | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile Back of Q Factor (f_B%)     | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| %ile Back of Q (50%), veh/ln     | 0.0  | 3.3  | 0.0  | 2.9  | 0.0  | 4.3  | 0.0  | 4.7  |
| %ile Storage Ratio (RQ%)         | 0.00 | 0.15 | 0.00 | 0.21 | 0.00 | 0.19 | 0.00 | 0.34 |
| Initial Q (Qb), veh              | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Final (Residual) Q (Qe), veh     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Delay (ds), s/veh            | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Q (Qs), veh                  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Cap (cs), veh/h              | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Q Clear Time (tc), h     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |

### Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 16.9 |
| HCM 6th LOS        | B    |

HCM 6th TWSC  
1: Front Avenue & 8th Street 2044, AM Peak

07/21/2021

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 5.3  |      |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBU  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      |
| Traffic Vol, veh/h       | 5    | 5    | 5    | 15   | 5    | 25   | 0    | 45   | 5    | 5    | 30   | 65   | 5    |
| Future Vol, veh/h        | 5    | 5    | 5    | 15   | 5    | 25   | 0    | 45   | 5    | 5    | 30   | 65   | 5    |
| Conflicting Peds, #/hr   | 0    | 0    | 1    | 1    | 0    | 0    | 1    | 0    | 1    | 0    | 1    | 0    | 1    |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | 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         | 25   | 25   | 25   | 56   | 25   | 65   | 25   | 72   | 38   | 25   | 71   | 55   | 25   |
| Heavy Vehicles, %        | 0    | 100  | 100  | 0    | 100  | 8    | 0    | 0    | 0    | 0    | 0    | 0    | 100  |
| Mvmt Flow                | 20   | 20   | 20   | 27   | 20   | 38   | 0    | 63   | 13   | 20   | 42   | 118  | 20   |

| Major/Minor          | Minor2 |     | Minor1 |     | Major1 |      |      | Major2 |   |      |      |   |   |
|----------------------|--------|-----|--------|-----|--------|------|------|--------|---|------|------|---|---|
| Conflicting Flow All | 295    | 330 | 71     | 265 | 334    | 39   | 139  | 0      | 0 | 76   | 77   | 0 | 0 |
| Stage 1              | 253    | 253 | -      | 71  | 71     | -    | -    | -      | - | -    | -    | - | - |
| Stage 2              | 42     | 77  | -      | 194 | 263    | -    | -    | -      | - | -    | -    | - | - |
| Critical Hdwy        | 7.5    | 8.5 | 8.9    | 7.5 | 8.5    | 7.06 | 4.1  | -      | - | 6.4  | 4.1  | - | - |
| Critical Hdwy Stg 1  | 6.5    | 7.5 | -      | 6.5 | 7.5    | -    | -    | -      | - | -    | -    | - | - |
| Critical Hdwy Stg 2  | 6.5    | 7.5 | -      | 6.5 | 7.5    | -    | -    | -      | - | -    | -    | - | - |
| Follow-up Hdwy       | 3.5    | 5   | 4.3    | 3.5 | 5      | 3.38 | 2.2  | -      | - | 2.5  | 2.2  | - | - |
| Pot Cap-1 Maneuver   | 640    | 412 | 733    | 672 | 409    | 1005 | 1457 | -      | - | 1292 | 1535 | - | - |
| Stage 1              | 735    | 504 | -      | 936 | 652    | -    | -    | -      | - | -    | -    | - | - |
| Stage 2              | 973    | 647 | -      | 795 | 497    | -    | -    | -      | - | -    | -    | - | - |
| Platoon blocked, %   |        |     |        |     |        |      |      | -      | - |      |      | - | - |
| Mov Cap-1 Maneuver   | 570    | 392 | 732    | 605 | 389    | 1004 | 1456 | -      | - | 1434 | 1434 | - | - |
| Mov Cap-2 Maneuver   | 570    | 392 | -      | 605 | 389    | -    | -    | -      | - | -    | -    | - | - |
| Stage 1              | 734    | 480 | -      | 935 | 651    | -    | -    | -      | - | -    | -    | - | - |
| Stage 2              | 907    | 646 | -      | 706 | 473    | -    | -    | -      | - | -    | -    | - | - |

| Approach             | EB   |  | WB   |  | NB |  | SB  |  |
|----------------------|------|--|------|--|----|--|-----|--|
| HCM Control Delay, s | 12.7 |  | 11.5 |  | 0  |  | 2.5 |  |
| HCM LOS              | B    |  | B    |  |    |  |     |  |

| Minor Lane/Major Mvmt | NBL  | NBT | NBR | EBLn1WBLn1 | SBL   | SBT   | SBR |
|-----------------------|------|-----|-----|------------|-------|-------|-----|
| Capacity (veh/h)      | 1456 | -   | -   | 529        | 636   | 1434  | -   |
| HCM Lane V/C Ratio    | -    | -   | -   | 0.113      | 0.134 | 0.029 | -   |
| HCM Control Delay (s) | 0    | -   | -   | 12.7       | 11.5  | 7.6   | 0.2 |
| HCM Lane LOS          | A    | -   | -   | B          | B     | A     | A   |
| HCM 95th %tile Q(veh) | 0    | -   | -   | 0.4        | 0.5   | 0.1   | -   |

HCM 6th TWSC  
2: Broadway & 8th Street 2044, AM Peak

07/21/2021

| Intersection             |      |      |      |       |       |       |      |       |      |      |      |      |
|--------------------------|------|------|------|-------|-------|-------|------|-------|------|------|------|------|
| Int Delay, s/veh         | 4.3  |      |      |       |       |       |      |       |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL   | WBT   | WBR   | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↔    |      |       | ↔     |       |      |       |      |      | ↔    |      |
| Traffic Vol, veh/h       | 0    | 40   | 5    | 5     | 70    | 0     | 0    | 0     | 0    | 5    | 15   | 15   |
| Future Vol, veh/h        | 0    | 40   | 5    | 5     | 70    | 0     | 0    | 0     | 0    | 5    | 15   | 15   |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 2     | 0     | 0     | 4    | 0     | 0    | 0    | 0    | 4    |
| Sign Control             | Stop | Stop | Stop | Yield | Yield | Yield | Free | Free  | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -     | -     | None  | -    | -     | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -     | -     | -     | -    | -     | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -     | 16983 | -     | -    | 16983 | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -     | 0     | -     | -    | 0     | -    | -    | 0    | -    |
| Peak Hour Factor         | 50   | 71   | 25   | 75    | 70    | 42    | 25   | 38    | 25   | 25   | 88   | 35   |
| Heavy Vehicles, %        | 0    | 5    | 0    | 0     | 5     | 0     | 0    | 17    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 0    | 56   | 20   | 7     | 100   | 0     | 0    | 0     | 0    | 20   | 17   | 43   |

| Major/Minor          | Minor2 |       |      | Major2 |  |     |
|----------------------|--------|-------|------|--------|--|-----|
| Conflicting Flow All | -      | 83    | 43   |        |  | 0   |
| Stage 1              | -      | 83    | -    |        |  | -   |
| Stage 2              | -      | 0     | -    |        |  | -   |
| Critical Hdwy        | -      | 6.55  | 6.2  |        |  | 4.1 |
| Critical Hdwy Stg 1  | -      | 5.55  | -    |        |  | -   |
| Critical Hdwy Stg 2  | -      | -     | -    |        |  | -   |
| Follow-up Hdwy       | -      | 4.045 | 3.3  |        |  | 2.2 |
| Pot Cap-1 Maneuver   | 0      | 801   | 1033 |        |  | -   |
| Stage 1              | 0      | 820   | -    |        |  | -   |
| Stage 2              | 0      | -     | -    |        |  | -   |
| Platoon blocked, %   |        |       |      |        |  | -   |
| Mov Cap-1 Maneuver   | -      | 0     | 1029 |        |  | -   |
| Mov Cap-2 Maneuver   | -      | 0     | -    |        |  | -   |
| Stage 1              | -      | 0     | -    |        |  | -   |
| Stage 2              | -      | 0     | -    |        |  | -   |

| Approach             | EB  | SB |
|----------------------|-----|----|
| HCM Control Delay, s | 8.8 |    |
| HCM LOS              | A   |    |

| Minor Lane/Major Mvmt | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-----|
| Capacity (veh/h)      | 1029  | -   | -   | -   |
| HCM Lane V/C Ratio    | 0.074 | -   | -   | -   |
| HCM Control Delay (s) | 8.8   | -   | -   | -   |
| HCM Lane LOS          | A     | -   | -   | -   |
| HCM 95th %tile Q(veh) | 0.2   | -   | -   | -   |

HCM 6th TWSC  
 3: Broadway & 8th Street 2044, AM Peak

07/21/2021

| Intersection             |       |       |       |      |      |      |      |      |      |      |       |      |
|--------------------------|-------|-------|-------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh         | 6.6   |       |       |      |      |      |      |      |      |      |       |      |
| Movement                 | EBL   | EBT   | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
| Lane Configurations      |       | ↔     |       |      | ↔    |      |      | ↔    |      |      |       |      |
| Traffic Vol, veh/h       | 5     | 40    | 0     | 0    | 70   | 5    | 0    | 15   | 5    | 0    | 0     | 0    |
| Future Vol, veh/h        | 5     | 40    | 0     | 0    | 70   | 5    | 0    | 15   | 5    | 0    | 0     | 0    |
| Conflicting Peds, #/hr   | 0     | 0     | 2     | 2    | 0    | 0    | 0    | 0    | 5    | 5    | 0     | 0    |
| Sign Control             | Yield | Yield | Yield | Stop | Stop | Stop | Free | Free | Free | Free | Free  | Free |
| RT Channelized           | -     | -     | None  | -    | -    | None | -    | -    | None | -    | -     | None |
| Storage Length           | -     | -     | -     | -    | -    | -    | -    | -    | -    | -    | -     | -    |
| Veh in Median Storage, # | -     | 2     | -     | -    | 0    | -    | -    | 0    | -    | -    | 16965 | -    |
| Grade, %                 | -     | 0     | -     | -    | 0    | -    | -    | 0    | -    | -    | 0     | -    |
| Peak Hour Factor         | 25    | 75    | 25    | 88   | 84   | 56   | 25   | 60   | 75   | 75   | 63    | 25   |
| Heavy Vehicles, %        | 0     | 5     | 0     | 0    | 5    | 0    | 0    | 17   | 0    | 0    | 0     | 0    |
| Mvmt Flow                | 20    | 53    | 0     | 0    | 83   | 9    | 0    | 25   | 7    | 0    | 0     | 0    |

| Major/Minor          | Minor1 |       | Major1 |     |   |   |
|----------------------|--------|-------|--------|-----|---|---|
| Conflicting Flow All | -      | 34    | 34     | 0   | 0 | 0 |
| Stage 1              | -      | 34    | -      | -   | - | - |
| Stage 2              | -      | 0     | -      | -   | - | - |
| Critical Hdwy        | -      | 6.55  | 6.2    | 4.1 | - | - |
| Critical Hdwy Stg 1  | -      | 5.55  | -      | -   | - | - |
| Critical Hdwy Stg 2  | -      | -     | -      | -   | - | - |
| Follow-up Hdwy       | -      | 4.045 | 3.3    | 2.2 | - | - |
| Pot Cap-1 Maneuver   | 0      | 853   | 1045   | -   | - | - |
| Stage 1              | 0      | 861   | -      | -   | - | - |
| Stage 2              | 0      | -     | -      | -   | - | - |
| Platoon blocked, %   |        |       |        |     | - | - |
| Mov Cap-1 Maneuver   | -      | 0     | 1040   | -   | - | - |
| Mov Cap-2 Maneuver   | -      | 0     | -      | -   | - | - |
| Stage 1              | -      | 0     | -      | -   | - | - |
| Stage 2              | -      | 0     | -      | -   | - | - |

| Approach             | WB  | NB |
|----------------------|-----|----|
| HCM Control Delay, s | 8.8 | 0  |
| HCM LOS              | A   |    |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | WBLn1 |
|-----------------------|-----|-----|-----|-------|
| Capacity (veh/h)      | -   | -   | -   | 1040  |
| HCM Lane V/C Ratio    | -   | -   | -   | 0.089 |
| HCM Control Delay (s) | 0   | -   | -   | 8.8   |
| HCM Lane LOS          | A   | -   | -   | A     |
| HCM 95th %tile Q(veh) | -   | -   | -   | 0.3   |

# HCM 6th TWSC

## 4: First Avenue & 8th Street 2044, AM Peak

07/21/2021

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 3.1  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 0    | 40   | 5    | 15   | 80   | 15   | 0    | 20   | 20   | 5    | 5    | 0    |
| Future Vol, veh/h        | 0    | 40   | 5    | 15   | 80   | 15   | 0    | 20   | 20   | 5    | 5    | 0    |
| Conflicting Peds, #/hr   | 0    | 0    | 3    | 3    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 1    |
| Sign Control             | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 92   | 75   | 25   | 88   | 84   | 56   | 92   | 60   | 75   | 75   | 63   | 92   |
| Heavy Vehicles, %        | 0    | 5    | 0    | 0    | 4    | 11   | 0    | 0    | 0    | 33   | 0    | 0    |
| Mvmt Flow                | 0    | 53   | 20   | 17   | 95   | 27   | 0    | 33   | 27   | 7    | 8    | 0    |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |     |      | Minor2 |     |     |
|----------------------|--------|---|---|--------|---|---|--------|-----|------|--------|-----|-----|
| Conflicting Flow All | 122    | 0 | 0 | 76     | 0 | 0 | 214    | 222 | 66   | 236    | 219 | 110 |
| Stage 1              | -      | - | - | -      | - | - | 66     | 66  | -    | 143    | 143 | -   |
| Stage 2              | -      | - | - | -      | - | - | 148    | 156 | -    | 93     | 76  | -   |
| Critical Hdwy        | 4.1    | - | - | 4.1    | - | - | 7.1    | 6.5 | 6.2  | 7.43   | 6.5 | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.1    | 5.5 | -    | 6.43   | 5.5 | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.1    | 5.5 | -    | 6.43   | 5.5 | -   |
| Follow-up Hdwy       | 2.2    | - | - | 2.2    | - | - | 3.5    | 4   | 3.3  | 3.797  | 4   | 3.3 |
| Pot Cap-1 Maneuver   | 1478   | - | - | 1536   | - | - | 747    | 680 | 1003 | 658    | 683 | 949 |
| Stage 1              | -      | - | - | -      | - | - | 950    | 844 | -    | 791    | 782 | -   |
| Stage 2              | -      | - | - | -      | - | - | 859    | 772 | -    | 843    | 836 | -   |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -   | -    | -      | -   | -   |
| Mov Cap-1 Maneuver   | 1478   | - | - | 1532   | - | - | 731    | 670 | 1000 | 611    | 673 | 948 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 731    | 670 | -    | 611    | 673 | -   |
| Stage 1              | -      | - | - | -      | - | - | 947    | 841 | -    | 791    | 773 | -   |
| Stage 2              | -      | - | - | -      | - | - | 839    | 763 | -    | 788    | 833 | -   |

| Approach             | EB |  |  | WB  |  |  | NB |  |  | SB   |  |  |
|----------------------|----|--|--|-----|--|--|----|--|--|------|--|--|
| HCM Control Delay, s | 0  |  |  | 0.9 |  |  | 10 |  |  | 10.7 |  |  |
| HCM LOS              |    |  |  |     |  |  | B  |  |  | B    |  |  |

| Minor Lane/Major Mvmt | NBLn1 | EBL  | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 785   | 1478 | -   | -   | 1532  | -   | -   | 643   |
| HCM Lane V/C Ratio    | 0.076 | -    | -   | -   | 0.011 | -   | -   | 0.023 |
| HCM Control Delay (s) | 10    | 0    | -   | -   | 7.4   | 0   | -   | 10.7  |
| HCM Lane LOS          | B     | A    | -   | -   | A     | A   | -   | B     |
| HCM 95th %tile Q(veh) | 0.2   | 0    | -   | -   | 0     | -   | -   | 0.1   |

HCM 6th TWSC

5: Second Avenue & 8th Street 2044, AM Peak

07/21/2021

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 4.7  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 5    | 55   | 0    | 5    | 90   | 20   | 5    | 25   | 15   | 5    | 40   | 15   |
| Future Vol, veh/h        | 5    | 55   | 0    | 5    | 90   | 20   | 5    | 25   | 15   | 5    | 40   | 15   |
| Conflicting Peds, #/hr   | 0    | 0    | 2    | 2    | 0    | 0    | 3    | 0    | 0    | 0    | 0    | 3    |
| Sign Control             | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 75   | 63   | 92   | 63   | 86   | 46   | 38   | 71   | 58   | 50   | 75   | 44   |
| Heavy Vehicles, %        | 0    | 6    | 0    | 0    | 5    | 8    | 0    | 6    | 0    | 25   | 5    | 0    |
| Mvmt Flow                | 7    | 87   | 0    | 8    | 105  | 43   | 13   | 35   | 26   | 10   | 53   | 34   |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |       |     | Minor2 |       |     |
|----------------------|--------|---|---|--------|---|---|--------|-------|-----|--------|-------|-----|
| Conflicting Flow All | 148    | 0 | 0 | 89     | 0 | 0 | 292    | 267   | 89  | 275    | 246   | 130 |
| Stage 1              | -      | - | - | -      | - | - | 103    | 103   | -   | 143    | 143   | -   |
| Stage 2              | -      | - | - | -      | - | - | 189    | 164   | -   | 132    | 103   | -   |
| Critical Hdwy        | 4.1    | - | - | 4.1    | - | - | 7.1    | 6.56  | 6.2 | 7.35   | 6.55  | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.1    | 5.56  | -   | 6.35   | 5.55  | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.1    | 5.56  | -   | 6.35   | 5.55  | -   |
| Follow-up Hdwy       | 2.2    | - | - | 2.2    | - | - | 3.5    | 4.054 | 3.3 | 3.725  | 4.045 | 3.3 |
| Pot Cap-1 Maneuver   | 1446   | - | - | 1519   | - | - | 664    | 632   | 975 | 633    | 651   | 925 |
| Stage 1              | -      | - | - | -      | - | - | 908    | 802   | -   | 808    | 773   | -   |
| Stage 2              | -      | - | - | -      | - | - | 817    | 755   | -   | 819    | 804   | -   |
| Platoon blocked, %   |        | - | - |        | - | - |        |       |     |        |       |     |
| Mov Cap-1 Maneuver   | 1446   | - | - | 1516   | - | - | 591    | 624   | 973 | 585    | 643   | 922 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 591    | 624   | -   | 585    | 643   | -   |
| Stage 1              | -      | - | - | -      | - | - | 902    | 796   | -   | 804    | 768   | -   |
| Stage 2              | -      | - | - | -      | - | - | 726    | 750   | -   | 758    | 798   | -   |

| Approach             | EB  |  |  | WB  |  |  | NB   |  |  | SB   |  |  |
|----------------------|-----|--|--|-----|--|--|------|--|--|------|--|--|
| HCM Control Delay, s | 0.5 |  |  | 0.4 |  |  | 10.7 |  |  | 10.9 |  |  |
| HCM LOS              |     |  |  |     |  |  | B    |  |  | B    |  |  |

| Minor Lane/Major Mvmt | NBLn1 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 705   | 1446  | -   | -   | 1516  | -   | -   | 711   |
| HCM Lane V/C Ratio    | 0.105 | 0.005 | -   | -   | 0.005 | -   | -   | 0.137 |
| HCM Control Delay (s) | 10.7  | 7.5   | 0   | -   | 7.4   | 0   | -   | 10.9  |
| HCM Lane LOS          | B     | A     | A   | -   | A     | A   | -   | B     |
| HCM 95th %tile Q(veh) | 0.4   | 0     | -   | -   | 0     | -   | -   | 0.5   |



HCM 6th TWSC  
6: Third Avenue & 8th Street 2044, AM Peak

07/21/2021

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 5.7  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 5    | 55   | 5    | 5    | 100  | 15   | 5    | 65   | 40   | 5    | 15   | 5    |
| Future Vol, veh/h        | 5    | 55   | 5    | 5    | 100  | 15   | 5    | 65   | 40   | 5    | 15   | 5    |
| Conflicting Peds, #/hr   | 1    | 0    | 3    | 3    | 0    | 1    | 0    | 0    | 1    | 1    | 0    | 0    |
| Sign Control             | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 50   | 86   | 25   | 50   | 95   | 50   | 38   | 64   | 82   | 75   | 50   | 25   |
| Heavy Vehicles, %        | 0    | 9    | 0    | 0    | 5    | 14   | 0    | 0    | 4    | 25   | 0    | 25   |
| Mvmt Flow                | 10   | 64   | 20   | 10   | 105  | 30   | 13   | 102  | 49   | 7    | 30   | 20   |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |     |       | Minor2 |     |       |
|----------------------|--------|---|---|--------|---|---|--------|-----|-------|--------|-----|-------|
| Conflicting Flow All | 136    | 0 | 0 | 87     | 0 | 0 | 262    | 253 | 78    | 312    | 248 | 121   |
| Stage 1              | -      | - | - | -      | - | - | 97     | 97  | -     | 141    | 141 | -     |
| Stage 2              | -      | - | - | -      | - | - | 165    | 156 | -     | 171    | 107 | -     |
| Critical Hdwy        | 4.1    | - | - | 4.1    | - | - | 7.1    | 6.5 | 6.24  | 7.35   | 6.5 | 6.45  |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.1    | 5.5 | -     | 6.35   | 5.5 | -     |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.1    | 5.5 | -     | 6.35   | 5.5 | -     |
| Follow-up Hdwy       | 2.2    | - | - | 2.2    | - | - | 3.5    | 4   | 3.336 | 3.725  | 4   | 3.525 |
| Pot Cap-1 Maneuver   | 1461   | - | - | 1522   | - | - | 695    | 654 | 977   | 598    | 658 | 872   |
| Stage 1              | -      | - | - | -      | - | - | 914    | 819 | -     | 810    | 784 | -     |
| Stage 2              | -      | - | - | -      | - | - | 842    | 772 | -     | 780    | 811 | -     |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -   | -     | -      | -   | -     |
| Mov Cap-1 Maneuver   | 1460   | - | - | 1518   | - | - | 646    | 642 | 973   | 493    | 646 | 871   |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 646    | 642 | -     | 493    | 646 | -     |
| Stage 1              | -      | - | - | -      | - | - | 905    | 811 | -     | 804    | 778 | -     |
| Stage 2              | -      | - | - | -      | - | - | 785    | 766 | -     | 643    | 803 | -     |

| Approach             | EB  |  |  | WB  |  |  | NB   |  |  | SB   |  |  |
|----------------------|-----|--|--|-----|--|--|------|--|--|------|--|--|
| HCM Control Delay, s | 0.8 |  |  | 0.5 |  |  | 11.5 |  |  | 10.7 |  |  |
| HCM LOS              |     |  |  |     |  |  | B    |  |  | B    |  |  |

| Minor Lane/Major Mvmt | NBLn1 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 715   | 1460  | -   | -   | 1518  | -   | -   | 683   |
| HCM Lane V/C Ratio    | 0.229 | 0.007 | -   | -   | 0.007 | -   | -   | 0.083 |
| HCM Control Delay (s) | 11.5  | 7.5   | 0   | -   | 7.4   | 0   | -   | 10.7  |
| HCM Lane LOS          | B     | A     | A   | -   | A     | A   | -   | B     |
| HCM 95th %tile Q(veh) | 0.9   | 0     | -   | -   | 0     | -   | -   | 0.3   |

HCM 6th Signalized Intersection Capacity Analysis  
7: Veterans Parkway & 8th Street 2044, AM Peak

07/21/2021



| Movement                      | EBL  | EBT       | EBR  | WBL  | WBT        | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|-------------------------------|------|-----------|------|------|------------|------|------|------|------|------|------|------|
| Lane Configurations           | ↖    | ↗         |      | ↖    | ↗          |      | ↖    | ↕    |      | ↖    | ↗    |      |
| Traffic Volume (veh/h)        | 30   | 45        | 25   | 30   | 50         | 45   | 30   | 665  | 20   | 70   | 660  | 40   |
| Future Volume (veh/h)         | 30   | 45        | 25   | 30   | 50         | 45   | 30   | 665  | 20   | 70   | 660  | 40   |
| Number                        | 7    | 4         | 14   | 3    | 8          | 18   | 5    | 2    | 12   | 1    | 6    | 16   |
| Initial Q, veh                | 0    | 0         | 0    | 0    | 0          | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj (A_pbT)          | 1.00 |           | 0.98 | 1.00 |            | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.98 |
| Parking Bus Adj               | 1.00 | 1.00      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach         |      | No        |      |      | No         |      |      | No   |      |      | No   |      |
| Lanes Open During Work Zone   |      |           |      |      |            |      |      |      |      |      |      |      |
| Adj Sat Flow, veh/h/ln        | 1737 | 1796      | 1796 | 1648 | 1767       | 1767 | 1900 | 1826 | 1826 | 1352 | 1811 | 1811 |
| Adj Flow Rate, veh/h          | 47   | 60        | 60   | 40   | 72         | 58   | 51   | 731  | 33   | 97   | 717  | 56   |
| Peak Hour Factor              | 0.64 | 0.75      | 0.42 | 0.75 | 0.69       | 0.78 | 0.59 | 0.91 | 0.60 | 0.72 | 0.92 | 0.72 |
| Percent Heavy Veh, %          | 11   | 7         | 7    | 17   | 9          | 9    | 0    | 5    | 5    | 37   | 6    | 6    |
| Opposing Right Turn Influence | Yes  |           |      | Yes  |            |      | Yes  |      |      | Yes  |      |      |
| Cap, veh/h                    | 133  | 112       | 112  | 137  | 124        | 100  | 530  | 2247 | 101  | 402  | 2165 | 169  |
| HCM Platoon Ratio             | 1.00 | 1.00      | 1.00 | 1.00 | 1.00       | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Prop Arrive On Green          | 0.14 | 0.14      | 0.14 | 0.14 | 0.14       | 0.14 | 0.03 | 0.66 | 0.66 | 0.04 | 0.67 | 0.67 |
| Unsig. Movement Delay         |      |           |      |      |            |      |      |      |      |      |      |      |
| Ln Grp Delay, s/veh           | 56.6 | 0.0       | 50.2 | 55.2 | 0.0        | 50.9 | 6.2  | 9.4  | 9.3  | 6.6  | 9.1  | 9.1  |
| Ln Grp LOS                    | E    | A         | D    | E    | A          | D    | A    | A    | A    | A    | A    | A    |
| Approach Vol, veh/h           |      | 167       |      |      | 170        |      |      | 815  |      |      | 870  |      |
| Approach Delay, s/veh         |      | 52.0      |      |      | 51.9       |      |      | 9.1  |      |      | 8.8  |      |
| Approach LOS                  |      | D         |      |      | D          |      |      | A    |      |      | A    |      |
| Timer:                        |      | 1         | 2    | 3    | 4          | 5    | 6    | 7    | 8    |      |      |      |
| Assigned Phs                  |      | 1         | 2    |      | 4          | 5    | 6    |      | 8    |      |      |      |
| Case No                       |      | 1.1       | 4.0  |      | 6.0        | 1.1  | 4.0  |      | 6.0  |      |      |      |
| Phs Duration (G+Y+Rc), s      |      | 11.3      | 85.8 |      | 22.9       | 10.6 | 86.5 |      | 22.9 |      |      |      |
| Change Period (Y+Rc), s       |      | 6.5       | 6.0  |      | 6.5        | 6.5  | 6.0  |      | 6.5  |      |      |      |
| Max Green (Gmax), s           |      | 9.5       | 67.0 |      | 24.5       | 9.5  | 67.0 |      | 24.5 |      |      |      |
| Max Allow Headway (MAH), s    |      | 3.9       | 6.1  |      | 5.1        | 3.8  | 6.2  |      | 5.2  |      |      |      |
| Max Q Clear (g_c+I1), s       |      | 4.9       | 13.1 |      | 15.7       | 3.0  | 13.3 |      | 14.4 |      |      |      |
| Green Ext Time (g_e), s       |      | 0.1       | 8.3  |      | 0.5        | 0.0  | 8.5  |      | 0.6  |      |      |      |
| Prob of Phs Call (p_c)        |      | 0.96      | 1.00 |      | 1.00       | 0.82 | 1.00 |      | 1.00 |      |      |      |
| Prob of Max Out (p_x)         |      | 0.47      | 0.00 |      | 0.12       | 0.03 | 0.01 |      | 0.06 |      |      |      |
| Left-Turn Movement Data       |      |           |      |      |            |      |      |      |      |      |      |      |
| Assigned Mvmt                 |      | 1         |      |      | 7          | 5    |      |      | 3    |      |      |      |
| Mvmt Sat Flow, veh/h          |      | 1287      |      |      | 1169       | 1810 |      |      | 1119 |      |      |      |
| Through Movement Data         |      |           |      |      |            |      |      |      |      |      |      |      |
| Assigned Mvmt                 |      |           | 2    |      | 4          |      | 6    |      | 8    |      |      |      |
| Mvmt Sat Flow, veh/h          |      |           | 3380 |      | 817        |      | 3228 |      | 905  |      |      |      |
| Right-Turn Movement Data      |      |           |      |      |            |      |      |      |      |      |      |      |
| Assigned Mvmt                 |      |           | 12   |      | 14         |      | 16   |      | 18   |      |      |      |
| Mvmt Sat Flow, veh/h          |      |           | 153  |      | 817        |      | 252  |      | 729  |      |      |      |
| Left Lane Group Data          |      |           |      |      |            |      |      |      |      |      |      |      |
| Assigned Mvmt                 |      | 1         | 0    | 0    | 7          | 5    | 0    | 0    | 3    |      |      |      |
| Lane Assignment               |      | L (Pr/Pm) |      |      | LL (Pr/Pm) |      |      |      | L    |      |      |      |

# HCM 6th Signalized Intersection Capacity Analysis

## 7: Veterans Parkway & 8th Street 2044, AM Peak

07/21/2021

|                                     |      |      |      |      |      |      |      |      |
|-------------------------------------|------|------|------|------|------|------|------|------|
| Lanes in Grp                        | 1    | 0    | 0    | 1    | 1    | 0    | 0    | 1    |
| Grp Vol (v), veh/h                  | 97   | 0    | 0    | 47   | 51   | 0    | 0    | 40   |
| Grp Sat Flow (s), veh/h/ln          | 1287 | 0    | 0    | 1169 | 1810 | 0    | 0    | 1119 |
| Q Serve Time (g_s), s               | 2.9  | 0.0  | 0.0  | 4.7  | 1.0  | 0.0  | 0.0  | 4.1  |
| Cycle Q Clear Time (g_c), s         | 2.9  | 0.0  | 0.0  | 13.7 | 1.0  | 0.0  | 0.0  | 12.4 |
| Perm LT Sat Flow (s_l), veh/h/ln    | 508  | 0    | 0    | 1169 | 708  | 0    | 0    | 1119 |
| Shared LT Sat Flow (s_sh), veh/h/ln | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Perm LT Eff Green (g_p), s          | 79.8 | 0.0  | 0.0  | 16.4 | 79.8 | 0.0  | 0.0  | 16.4 |
| Perm LT Serve Time (g_u), s         | 68.7 | 0.0  | 0.0  | 7.5  | 69.2 | 0.0  | 0.0  | 8.2  |
| Perm LT Q Serve Time (g_ps), s      | 2.6  | 0.0  | 0.0  | 4.7  | 0.8  | 0.0  | 0.0  | 4.1  |
| Time to First Blk (g_f), s          | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Serve Time pre Blk (g_fs), s        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Prop LT Inside Lane (P_L)           | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| Lane Grp Cap (c), veh/h             | 402  | 0    | 0    | 133  | 530  | 0    | 0    | 137  |
| V/C Ratio (X)                       | 0.24 | 0.00 | 0.00 | 0.35 | 0.10 | 0.00 | 0.00 | 0.29 |
| Avail Cap (c_a), veh/h              | 453  | 0    | 0    | 211  | 611  | 0    | 0    | 212  |
| Upstream Filter (I)                 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| Uniform Delay (d1), s/veh           | 6.3  | 0.0  | 0.0  | 55.0 | 6.1  | 0.0  | 0.0  | 54.0 |
| Incr Delay (d2), s/veh              | 0.3  | 0.0  | 0.0  | 1.6  | 0.1  | 0.0  | 0.0  | 1.2  |
| Initial Q Delay (d3), s/veh         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Control Delay (d), s/veh            | 6.6  | 0.0  | 0.0  | 56.6 | 6.2  | 0.0  | 0.0  | 55.2 |
| 1st-Term Q (Q1), veh/ln             | 0.7  | 0.0  | 0.0  | 1.4  | 0.4  | 0.0  | 0.0  | 1.2  |
| 2nd-Term Q (Q2), veh/ln             | 0.0  | 0.0  | 0.0  | 0.1  | 0.0  | 0.0  | 0.0  | 0.0  |
| 3rd-Term Q (Q3), veh/ln             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile Back of Q Factor (f_B%)        | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| %ile Back of Q (50%), veh/ln        | 0.7  | 0.0  | 0.0  | 1.4  | 0.4  | 0.0  | 0.0  | 1.2  |
| %ile Storage Ratio (RQ%)            | 0.21 | 0.00 | 0.00 | 0.49 | 0.12 | 0.00 | 0.00 | 0.53 |
| Initial Q (Qb), veh                 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Final (Residual) Q (Qe), veh        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Delay (ds), s/veh               | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Q (Qs), veh                     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Cap (cs), veh/h                 | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Q Clear Time (tc), h        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |

### Middle Lane Group Data

|                             |      |      |      |      |      |      |      |      |
|-----------------------------|------|------|------|------|------|------|------|------|
| Assigned Mvmt               | 0    | 2    | 0    | 4    | 0    | 6    | 0    | 8    |
| Lane Assignment             |      | T    |      |      |      | T    |      |      |
| Lanes in Grp                | 0    | 1    | 0    | 0    | 0    | 1    | 0    | 0    |
| Grp Vol (v), veh/h          | 0    | 375  | 0    | 0    | 0    | 382  | 0    | 0    |
| Grp Sat Flow (s), veh/h/ln  | 0    | 1735 | 0    | 0    | 0    | 1721 | 0    | 0    |
| Q Serve Time (g_s), s       | 0.0  | 11.1 | 0.0  | 0.0  | 0.0  | 11.3 | 0.0  | 0.0  |
| Cycle Q Clear Time (g_c), s | 0.0  | 11.1 | 0.0  | 0.0  | 0.0  | 11.3 | 0.0  | 0.0  |
| Lane Grp Cap (c), veh/h     | 0    | 1153 | 0    | 0    | 0    | 1154 | 0    | 0    |
| V/C Ratio (X)               | 0.00 | 0.33 | 0.00 | 0.00 | 0.00 | 0.33 | 0.00 | 0.00 |
| Avail Cap (c_a), veh/h      | 0    | 1153 | 0    | 0    | 0    | 1154 | 0    | 0    |
| Upstream Filter (I)         | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d1), s/veh   | 0.0  | 8.6  | 0.0  | 0.0  | 0.0  | 8.4  | 0.0  | 0.0  |
| Incr Delay (d2), s/veh      | 0.0  | 0.8  | 0.0  | 0.0  | 0.0  | 0.8  | 0.0  | 0.0  |
| Initial Q Delay (d3), s/veh | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Control Delay (d), s/veh    | 0.0  | 9.4  | 0.0  | 0.0  | 0.0  | 9.1  | 0.0  | 0.0  |
| 1st-Term Q (Q1), veh/ln     | 0.0  | 3.9  | 0.0  | 0.0  | 0.0  | 3.9  | 0.0  | 0.0  |
| 2nd-Term Q (Q2), veh/ln     | 0.0  | 0.2  | 0.0  | 0.0  | 0.0  | 0.2  | 0.0  | 0.0  |

# HCM 6th Signalized Intersection Capacity Analysis

## 7: Veterans Parkway & 8th Street 2044, AM Peak

07/21/2021

|                              |      |      |      |      |      |      |      |      |
|------------------------------|------|------|------|------|------|------|------|------|
| 3rd-Term Q (Q3), veh/ln      | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile Back of Q Factor (f_B%) | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| %ile Back of Q (50%), veh/ln | 0.0  | 4.1  | 0.0  | 0.0  | 0.0  | 4.1  | 0.0  | 0.0  |
| %ile Storage Ratio (RQ%)     | 0.00 | 0.19 | 0.00 | 0.00 | 0.00 | 0.19 | 0.00 | 0.00 |
| Initial Q (Qb), veh          | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Final (Residual) Q (Qe), veh | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Delay (ds), s/veh        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Q (Qs), veh              | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Cap (cs), veh/h          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Q Clear Time (tc), h | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |

### Right Lane Group Data

|                                  |      |      |      |      |      |      |      |      |
|----------------------------------|------|------|------|------|------|------|------|------|
| Assigned Mvmt                    | 0    | 12   | 0    | 14   | 0    | 16   | 0    | 18   |
| Lane Assignment                  |      | T+R  |      | T+R  |      | T+R  |      | T+R  |
| Lanes in Grp                     | 0    | 1    | 0    | 1    | 0    | 1    | 0    | 1    |
| Grp Vol (v), veh/h               | 0    | 389  | 0    | 120  | 0    | 391  | 0    | 130  |
| Grp Sat Flow (s), veh/h/ln       | 0    | 1798 | 0    | 1634 | 0    | 1759 | 0    | 1634 |
| Q Serve Time (g_s), s            | 0.0  | 11.1 | 0.0  | 8.2  | 0.0  | 11.3 | 0.0  | 9.0  |
| Cycle Q Clear Time (g_c), s      | 0.0  | 11.1 | 0.0  | 8.2  | 0.0  | 11.3 | 0.0  | 9.0  |
| Prot RT Sat Flow (s_R), veh/h/ln | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Prot RT Eff Green (g_R), s       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Prop RT Outside Lane (P_R)       | 0.00 | 0.08 | 0.00 | 0.50 | 0.00 | 0.14 | 0.00 | 0.45 |
| Lane Grp Cap (c), veh/h          | 0    | 1195 | 0    | 224  | 0    | 1180 | 0    | 224  |
| V/C Ratio (X)                    | 0.00 | 0.33 | 0.00 | 0.54 | 0.00 | 0.33 | 0.00 | 0.58 |
| Avail Cap (c_a), veh/h           | 0    | 1195 | 0    | 334  | 0    | 1180 | 0    | 334  |
| Upstream Filter (I)              | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d1), s/veh        | 0.0  | 8.6  | 0.0  | 48.2 | 0.0  | 8.4  | 0.0  | 48.6 |
| Incr Delay (d2), s/veh           | 0.0  | 0.7  | 0.0  | 2.0  | 0.0  | 0.8  | 0.0  | 2.4  |
| Initial Q Delay (d3), s/veh      | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Control Delay (d), s/veh         | 0.0  | 9.3  | 0.0  | 50.2 | 0.0  | 9.1  | 0.0  | 50.9 |
| 1st-Term Q (Q1), veh/ln          | 0.0  | 4.0  | 0.0  | 3.3  | 0.0  | 4.0  | 0.0  | 3.7  |
| 2nd-Term Q (Q2), veh/ln          | 0.0  | 0.2  | 0.0  | 0.1  | 0.0  | 0.2  | 0.0  | 0.1  |
| 3rd-Term Q (Q3), veh/ln          | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile Back of Q Factor (f_B%)     | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| %ile Back of Q (50%), veh/ln     | 0.0  | 4.2  | 0.0  | 3.5  | 0.0  | 4.2  | 0.0  | 3.8  |
| %ile Storage Ratio (RQ%)         | 0.00 | 0.20 | 0.00 | 0.26 | 0.00 | 0.20 | 0.00 | 0.29 |
| Initial Q (Qb), veh              | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Final (Residual) Q (Qe), veh     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Delay (ds), s/veh            | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Q (Qs), veh                  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Cap (cs), veh/h              | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Q Clear Time (tc), h     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |

### Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 16.2 |
| HCM 6th LOS        | B    |

### Notes

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

HCM 6th TWSC

1: Front Avenue & 8th Street 2044, PM Peak

07/21/2021

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 5.4  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 0    | 5    | 0    | 5    | 0    | 50   | 0    | 30   | 5    | 30   | 25   | 0    |
| Future Vol, veh/h        | 0    | 5    | 0    | 5    | 0    | 50   | 0    | 30   | 5    | 30   | 25   | 0    |
| Conflicting Peds, #/hr   | 1    | 0    | 3    | 3    | 0    | 1    | 6    | 0    | 1    | 1    | 0    | 6    |
| Sign Control             | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 92   | 33   | 92   | 50   | 92   | 71   | 92   | 68   | 75   | 68   | 75   | 92   |
| Heavy Vehicles, %        | 0    | 0    | 0    | 0    | 0    | 3    | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 0    | 15   | 0    | 10   | 0    | 70   | 0    | 44   | 7    | 44   | 33   | 0    |

| Major/Minor          | Minor2 |     | Minor1 |     | Major1 |      |      | Major2 |   |      |   |   |
|----------------------|--------|-----|--------|-----|--------|------|------|--------|---|------|---|---|
| Conflicting Flow All | 150    | 179 | 26     | 164 | 176    | 28   | 39   | 0      | 0 | 52   | 0 | 0 |
| Stage 1              | 127    | 127 | -      | 49  | 49     | -    | -    | -      | - | -    | - | - |
| Stage 2              | 23     | 52  | -      | 115 | 127    | -    | -    | -      | - | -    | - | - |
| Critical Hdwy        | 7.5    | 6.5 | 6.9    | 7.5 | 6.5    | 6.96 | 4.1  | -      | - | 4.1  | - | - |
| Critical Hdwy Stg 1  | 6.5    | 5.5 | -      | 6.5 | 5.5    | -    | -    | -      | - | -    | - | - |
| Critical Hdwy Stg 2  | 6.5    | 5.5 | -      | 6.5 | 5.5    | -    | -    | -      | - | -    | - | - |
| Follow-up Hdwy       | 3.5    | 4   | 3.3    | 3.5 | 4      | 3.33 | 2.2  | -      | - | 2.2  | - | - |
| Pot Cap-1 Maneuver   | 809    | 718 | 1050   | 791 | 721    | 1037 | 1584 | -      | - | 1567 | - | - |
| Stage 1              | 869    | 795 | -      | 964 | 858    | -    | -    | -      | - | -    | - | - |
| Stage 2              | 998    | 856 | -      | 883 | 795    | -    | -    | -      | - | -    | - | - |
| Platoon blocked, %   |        |     |        |     |        |      |      | -      | - | -    | - | - |
| Mov Cap-1 Maneuver   | 732    | 692 | 1041   | 758 | 695    | 1035 | 1575 | -      | - | 1566 | - | - |
| Mov Cap-2 Maneuver   | 732    | 692 | -      | 758 | 695    | -    | -    | -      | - | -    | - | - |
| Stage 1              | 864    | 767 | -      | 963 | 857    | -    | -    | -      | - | -    | - | - |
| Stage 2              | 929    | 855 | -      | 838 | 767    | -    | -    | -      | - | -    | - | - |

| Approach             | EB   | WB | NB | SB  |
|----------------------|------|----|----|-----|
| HCM Control Delay, s | 10.3 | 9  | 0  | 4.2 |
| HCM LOS              | B    | A  |    |     |

| Minor Lane/Major Mvmt | NBL  | NBT | NBR | EBLn1WBLn1 | SBL   | SBT   | SBR |
|-----------------------|------|-----|-----|------------|-------|-------|-----|
| Capacity (veh/h)      | 1575 | -   | -   | 692        | 990   | 1566  | -   |
| HCM Lane V/C Ratio    | -    | -   | -   | 0.022      | 0.081 | 0.028 | -   |
| HCM Control Delay (s) | 0    | -   | -   | 10.3       | 9     | 7.4   | 0   |
| HCM Lane LOS          | A    | -   | -   | B          | A     | A     | A   |
| HCM 95th %tile Q(veh) | 0    | -   | -   | 0.1        | 0.3   | 0.1   | -   |

HCM 6th TWSC  
2: Broadway & 8th Street 2044, PM Peak

07/21/2021

| Intersection             |      |      |      |       |       |       |      |       |      |      |      |      |
|--------------------------|------|------|------|-------|-------|-------|------|-------|------|------|------|------|
| Int Delay, s/veh         | 5.3  |      |      |       |       |       |      |       |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL   | WBT   | WBR   | NBL  | NBT   | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↔    |      |       | ↔     |       |      |       |      |      | ↔    |      |
| Traffic Vol, veh/h       | 0    | 50   | 5    | 5     | 80    | 0     | 0    | 0     | 0    | 5    | 15   | 5    |
| Future Vol, veh/h        | 0    | 50   | 5    | 5     | 80    | 0     | 0    | 0     | 0    | 5    | 15   | 5    |
| Conflicting Peds, #/hr   | 0    | 0    | 1    | 1     | 0     | 0     | 4    | 0     | 10   | 0    | 0    | 4    |
| Sign Control             | Stop | Stop | Stop | Yield | Yield | Yield | Free | Free  | Free | Free | Free | Free |
| RT Channelized           | -    | -    | None | -     | -     | None  | -    | -     | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -     | -     | -     | -    | -     | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -     | 16983 | -     | -    | 16983 | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -     | 0     | -     | -    | 0     | -    | -    | 0    | -    |
| Peak Hour Factor         | 25   | 73   | 25   | 50    | 80    | 38    | 25   | 58    | 63   | 25   | 50   | 63   |
| Heavy Vehicles, %        | 0    | 0    | 0    | 0     | 1     | 0     | 0    | 0     | 20   | 0    | 0    | 0    |
| Mvmt Flow                | 0    | 68   | 20   | 10    | 100   | 0     | 0    | 0     | 0    | 20   | 30   | 8    |

| Major/Minor          | Minor2 |     |      | Major2 |  |     |
|----------------------|--------|-----|------|--------|--|-----|
| Conflicting Flow All | -      | 78  | 39   |        |  | 0   |
| Stage 1              | -      | 78  | -    |        |  | -   |
| Stage 2              | -      | 0   | -    |        |  | -   |
| Critical Hdwy        | -      | 6.5 | 6.2  |        |  | 4.1 |
| Critical Hdwy Stg 1  | -      | 5.5 | -    |        |  | -   |
| Critical Hdwy Stg 2  | -      | -   | -    |        |  | -   |
| Follow-up Hdwy       | -      | 4   | 3.3  |        |  | 2.2 |
| Pot Cap-1 Maneuver   | 0      | 816 | 1038 |        |  | -   |
| Stage 1              | 0      | 834 | -    |        |  | -   |
| Stage 2              | 0      | -   | -    |        |  | -   |
| Platoon blocked, %   |        |     |      |        |  | -   |
| Mov Cap-1 Maneuver   | -      | 0   | 1034 |        |  | -   |
| Mov Cap-2 Maneuver   | -      | 0   | -    |        |  | -   |
| Stage 1              | -      | 0   | -    |        |  | -   |
| Stage 2              | -      | 0   | -    |        |  | -   |

| Approach             | EB  | SB |
|----------------------|-----|----|
| HCM Control Delay, s | 8.8 |    |
| HCM LOS              | A   |    |

| Minor Lane/Major Mvmt | EBLn1 | SBL | SBT | SBR |
|-----------------------|-------|-----|-----|-----|
| Capacity (veh/h)      | 1034  | -   | -   | -   |
| HCM Lane V/C Ratio    | 0.086 | -   | -   | -   |
| HCM Control Delay (s) | 8.8   | -   | -   | -   |
| HCM Lane LOS          | A     | -   | -   | -   |
| HCM 95th %tile Q(veh) | 0.3   | -   | -   | -   |

HCM 6th TWSC  
 3: Broadway & 8th Street 2044, PM Peak

07/21/2021

| Intersection             |       |       |       |      |      |      |      |      |      |      |       |      |
|--------------------------|-------|-------|-------|------|------|------|------|------|------|------|-------|------|
| Int Delay, s/veh         | 6.7   |       |       |      |      |      |      |      |      |      |       |      |
| Movement                 | EBL   | EBT   | EBR   | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT   | SBR  |
| Lane Configurations      |       | ↔     |       |      | ↔    |      |      | ↔    |      |      |       |      |
| Traffic Vol, veh/h       | 5     | 50    | 0     | 0    | 80   | 5    | 5    | 5    | 5    | 0    | 0     | 0    |
| Future Vol, veh/h        | 5     | 50    | 0     | 0    | 80   | 5    | 5    | 5    | 5    | 0    | 0     | 0    |
| Conflicting Peds, #/hr   | 0     | 0     | 1     | 1    | 0    | 0    | 0    | 0    | 10   | 0    | 0     | 0    |
| Sign Control             | Yield | Yield | Yield | Stop | Stop | Stop | Free | Free | Free | Free | Free  | Free |
| RT Channelized           | -     | -     | None  | -    | -    | None | -    | -    | None | -    | -     | None |
| Storage Length           | -     | -     | -     | -    | -    | -    | -    | -    | -    | -    | -     | -    |
| Veh in Median Storage, # | -     | 2     | -     | -    | 0    | -    | -    | 0    | -    | -    | 16965 | -    |
| Grade, %                 | -     | 0     | -     | -    | 0    | -    | -    | 0    | -    | -    | 0     | -    |
| Peak Hour Factor         | 25    | 73    | 25    | 50   | 80   | 38   | 25   | 58   | 63   | 25   | 50    | 63   |
| Heavy Vehicles, %        | 0     | 0     | 0     | 0    | 1    | 0    | 0    | 0    | 20   | 0    | 0     | 0    |
| Mvmt Flow                | 20    | 68    | 0     | 0    | 100  | 13   | 20   | 9    | 8    | 0    | 0     | 0    |

| Major/Minor          | Minor1 |       | Major1 |     |   |
|----------------------|--------|-------|--------|-----|---|
| Conflicting Flow All | -      | 63    | 23     | 0   | 0 |
| Stage 1              | -      | 63    | -      | -   | - |
| Stage 2              | -      | 0     | -      | -   | - |
| Critical Hdwy        | -      | 6.51  | 6.2    | 4.1 | - |
| Critical Hdwy Stg 1  | -      | 5.51  | -      | -   | - |
| Critical Hdwy Stg 2  | -      | -     | -      | -   | - |
| Follow-up Hdwy       | -      | 4.009 | 3.3    | 2.2 | - |
| Pot Cap-1 Maneuver   | 0      | 830   | 1060   | -   | - |
| Stage 1              | 0      | 844   | -      | -   | - |
| Stage 2              | 0      | -     | -      | -   | - |
| Platoon blocked, %   | -      | -     | -      | -   | - |
| Mov Cap-1 Maneuver   | -      | 0     | 1050   | -   | - |
| Mov Cap-2 Maneuver   | -      | 0     | -      | -   | - |
| Stage 1              | -      | 0     | -      | -   | - |
| Stage 2              | -      | 0     | -      | -   | - |

| Approach             | WB  | NB |
|----------------------|-----|----|
| HCM Control Delay, s | 8.8 |    |
| HCM LOS              | A   |    |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | WBLn1 |
|-----------------------|-----|-----|-----|-------|
| Capacity (veh/h)      | -   | -   | -   | 1050  |
| HCM Lane V/C Ratio    | -   | -   | -   | 0.108 |
| HCM Control Delay (s) | -   | -   | -   | 8.8   |
| HCM Lane LOS          | -   | -   | -   | A     |
| HCM 95th %tile Q(veh) | -   | -   | -   | 0.4   |

HCM 6th TWSC  
4: First Avenue & 8th Street 2044, PM Peak

07/21/2021

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 3.8  |      |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBU  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 5    | 50   | 5    | 5    | 15   | 80   | 5    | 5    | 15   | 5    | 5    | 25   | 5    |
| Future Vol, veh/h        | 5    | 50   | 5    | 5    | 15   | 80   | 5    | 5    | 15   | 5    | 5    | 25   | 5    |
| Conflicting Peds, #/hr   | 0    | 0    | 2    | 4    | 2    | 0    | 0    | 4    | 0    | 3    | 3    | 0    | 4    |
| Sign Control             | Free | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 25   | 62   | 50   | 25   | 100  | 76   | 63   | 75   | 92   | 88   | 88   | 38   | 38   |
| Heavy Vehicles, %        | 0    | 2    | 0    | 0    | 0    | 2    | 0    | 0    | 0    | 14   | 0    | 0    | 0    |
| Mvmt Flow                | 20   | 81   | 10   | 20   | 15   | 105  | 8    | 7    | 16   | 6    | 6    | 66   | 13   |

| Major/Minor          | Major1 |   |   | Major2 |      |   | Minor1 |     |     | Minor2 |     |     |     |
|----------------------|--------|---|---|--------|------|---|--------|-----|-----|--------|-----|-----|-----|
| Conflicting Flow All | 113    | 0 | 0 | -      | 93   | 0 | 0      | 311 | 311 | 91     | 279 | 312 | 113 |
| Stage 1              | -      | - | - | -      | -    | - | -      | 128 | 128 | -      | 139 | 179 | -   |
| Stage 2              | -      | - | - | -      | -    | - | -      | 183 | 183 | -      | 140 | 133 | -   |
| Critical Hdwy        | 4.1    | - | - | -      | 4.1  | - | -      | 7.1 | 6.5 | 6.34   | 7.1 | 6.5 | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | -    | - | -      | 6.1 | 5.5 | -      | 6.1 | 5.5 | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | -    | - | -      | 6.1 | 5.5 | -      | 6.1 | 5.5 | -   |
| Follow-up Hdwy       | 2.2    | - | - | -      | 2.2  | - | -      | 3.5 | 4   | 3.426  | 3.5 | 4   | 3.3 |
| Pot Cap-1 Maneuver   | 1489   | - | - | -      | 1514 | - | -      | 645 | 607 | 935    | 677 | 606 | 945 |
| Stage 1              | -      | - | - | -      | -    | - | -      | 881 | 794 | -      | 869 | 755 | -   |
| Stage 2              | -      | - | - | -      | -    | - | -      | 823 | 752 | -      | 868 | 790 | -   |
| Platoon blocked, %   |        | - | - |        |      | - | -      |     |     |        |     |     |     |
| Mov Cap-1 Maneuver   | 1489   | - | - | ~      | ~    | - | -      | 573 | 597 | 931    | 650 | 596 | 941 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | -    | - | -      | 573 | 597 | -      | 650 | 596 | -   |
| Stage 1              | -      | - | - | -      | -    | - | -      | 867 | 781 | -      | 857 | 755 | -   |
| Stage 2              | -      | - | - | -      | -    | - | -      | 738 | 752 | -      | 830 | 777 | -   |

| Approach             | EB  | WB | NB   | SB   |
|----------------------|-----|----|------|------|
| HCM Control Delay, s | 1.3 |    | 10.9 | 11.5 |
| HCM LOS              |     |    | B    | B    |

| Minor Lane/Major Mvmt | NBLn1 | EBL   | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-----|-----|-----|-------|
| Capacity (veh/h)      | 636   | 1489  | -   | -   | ~   | -   | -   | 636   |
| HCM Lane V/C Ratio    | 0.045 | 0.013 | -   | -   | ~   | -   | -   | 0.133 |
| HCM Control Delay (s) | 10.9  | 7.5   | 0   | -   | -   | -   | -   | 11.5  |
| HCM Lane LOS          | B     | A     | A   | -   | -   | -   | -   | B     |
| HCM 95th %tile Q(veh) | 0.1   | 0     | -   | -   | ~   | -   | -   | 0.5   |

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



HCM 6th TWSC

5: Second Avenue & 8th Street 2044, PM Peak

07/21/2021

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 6    |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 5    | 65   | 5    | 20   | 90   | 5    | 5    | 30   | 15   | 15   | 55   | 20   |
| Future Vol, veh/h        | 5    | 65   | 5    | 20   | 90   | 5    | 5    | 30   | 15   | 15   | 55   | 20   |
| 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           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 58   | 64   | 100  | 58   | 86   | 58   | 25   | 75   | 83   | 50   | 79   | 54   |
| Heavy Vehicles, %        | 0    | 4    | 0    | 0    | 0    | 29   | 0    | 0    | 0    | 8    | 2    | 8    |
| Mvmt Flow                | 9    | 102  | 5    | 34   | 105  | 9    | 20   | 40   | 18   | 30   | 70   | 37   |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |     |     | Minor2 |       |       |
|----------------------|--------|---|---|--------|---|---|--------|-----|-----|--------|-------|-------|
| Conflicting Flow All | 114    | 0 | 0 | 107    | 0 | 0 | 354    | 305 | 105 | 330    | 303   | 110   |
| Stage 1              | -      | - | - | -      | - | - | 123    | 123 | -   | 178    | 178   | -     |
| Stage 2              | -      | - | - | -      | - | - | 231    | 182 | -   | 152    | 125   | -     |
| Critical Hdwy        | 4.1    | - | - | 4.1    | - | - | 7.1    | 6.5 | 6.2 | 7.18   | 6.52  | 6.28  |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.1    | 5.5 | -   | 6.18   | 5.52  | -     |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.1    | 5.5 | -   | 6.18   | 5.52  | -     |
| Follow-up Hdwy       | 2.2    | - | - | 2.2    | - | - | 3.5    | 4   | 3.3 | 3.572  | 4.018 | 3.372 |
| Pot Cap-1 Maneuver   | 1488   | - | - | 1497   | - | - | 605    | 612 | 955 | 612    | 610   | 927   |
| Stage 1              | -      | - | - | -      | - | - | 886    | 798 | -   | 810    | 752   | -     |
| Stage 2              | -      | - | - | -      | - | - | 776    | 753 | -   | 836    | 792   | -     |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -   | -   | -      | -     | -     |
| Mov Cap-1 Maneuver   | 1488   | - | - | 1497   | - | - | 517    | 594 | 955 | 557    | 592   | 927   |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 517    | 594 | -   | 557    | 592   | -     |
| Stage 1              | -      | - | - | -      | - | - | 881    | 793 | -   | 805    | 734   | -     |
| Stage 2              | -      | - | - | -      | - | - | 658    | 735 | -   | 774    | 787   | -     |

| Approach             | EB  | WB  | NB   | SB   |
|----------------------|-----|-----|------|------|
| HCM Control Delay, s | 0.6 | 1.7 | 11.6 | 12.1 |
| HCM LOS              |     |     | B    | B    |

| Minor Lane/Major Mvmt | NBLn1 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 625   | 1488  | -   | -   | 1497  | -   | -   | 646   |
| HCM Lane V/C Ratio    | 0.125 | 0.006 | -   | -   | 0.023 | -   | -   | 0.212 |
| HCM Control Delay (s) | 11.6  | 7.4   | 0   | -   | 7.5   | 0   | -   | 12.1  |
| HCM Lane LOS          | B     | A     | A   | -   | A     | A   | -   | B     |
| HCM 95th %tile Q(veh) | 0.4   | 0     | -   | -   | 0.1   | -   | -   | 0.8   |

HCM 6th TWSC  
6: Third Avenue & 8th Street 2044, PM Peak

07/21/2021

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 3.9  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 15   | 75   | 5    | 15   | 100  | 5    | 5    | 25   | 15   | 5    | 20   | 5    |
| Future Vol, veh/h        | 15   | 75   | 5    | 15   | 100  | 5    | 5    | 25   | 15   | 5    | 20   | 5    |
| Conflicting Peds, #/hr   | 0    | 0    | 4    | 4    | 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           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 67   | 64   | 50   | 63   | 82   | 38   | 25   | 75   | 67   | 100  | 80   | 75   |
| Heavy Vehicles, %        | 11   | 3    | 0    | 0    | 2    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 22   | 117  | 10   | 24   | 122  | 13   | 20   | 33   | 22   | 5    | 25   | 7    |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |     |     | Minor2 |     |     |
|----------------------|--------|---|---|--------|---|---|--------|-----|-----|--------|-----|-----|
| Conflicting Flow All | 135    | 0 | 0 | 131    | 0 | 0 | 363    | 353 | 126 | 371    | 352 | 129 |
| Stage 1              | -      | - | - | -      | - | - | 170    | 170 | -   | 177    | 177 | -   |
| Stage 2              | -      | - | - | -      | - | - | 193    | 183 | -   | 194    | 175 | -   |
| Critical Hdwy        | 4.21   | - | - | 4.1    | - | - | 7.1    | 6.5 | 6.2 | 7.1    | 6.5 | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.1    | 5.5 | -   | 6.1    | 5.5 | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.1    | 5.5 | -   | 6.1    | 5.5 | -   |
| Follow-up Hdwy       | 2.299  | - | - | 2.2    | - | - | 3.5    | 4   | 3.3 | 3.5    | 4   | 3.3 |
| Pot Cap-1 Maneuver   | 1396   | - | - | 1467   | - | - | 597    | 575 | 930 | 589    | 576 | 926 |
| Stage 1              | -      | - | - | -      | - | - | 837    | 762 | -   | 829    | 756 | -   |
| Stage 2              | -      | - | - | -      | - | - | 813    | 752 | -   | 812    | 758 | -   |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -   | -   | -      | -   | -   |
| Mov Cap-1 Maneuver   | 1396   | - | - | 1461   | - | - | 555    | 553 | 926 | 534    | 554 | 926 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 555    | 553 | -   | 534    | 554 | -   |
| Stage 1              | -      | - | - | -      | - | - | 819    | 746 | -   | 815    | 742 | -   |
| Stage 2              | -      | - | - | -      | - | - | 766    | 738 | -   | 744    | 742 | -   |

| Approach             | EB  |  |  | WB  |  |  | NB   |  |  | SB   |  |  |
|----------------------|-----|--|--|-----|--|--|------|--|--|------|--|--|
| HCM Control Delay, s | 1.1 |  |  | 1.1 |  |  | 11.5 |  |  | 11.5 |  |  |
| HCM LOS              |     |  |  |     |  |  | B    |  |  | B    |  |  |

| Minor Lane/Major Mvmt | NBLn1 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 628   | 1396  | -   | -   | 1461  | -   | -   | 594   |
| HCM Lane V/C Ratio    | 0.121 | 0.016 | -   | -   | 0.016 | -   | -   | 0.062 |
| HCM Control Delay (s) | 11.5  | 7.6   | 0   | -   | 7.5   | 0   | -   | 11.5  |
| HCM Lane LOS          | B     | A     | A   | -   | A     | A   | -   | B     |
| HCM 95th %tile Q(veh) | 0.4   | 0     | -   | -   | 0.1   | -   | -   | 0.2   |

HCM 6th Signalized Intersection Capacity Analysis  
 7: Veterans Parkway & 8th Street 2044, PM Peak

07/21/2021



| Movement                        | EBL  | EBT       | EBR   | WBL  | WBT        | WBR  | NBL   | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------------------|------|-----------|-------|------|------------|------|-------|------|------|------|------|------|
| Lane Configurations             | ↶    | ↷         |       | ↶    | ↷          |      | ↶     | ↷    |      | ↶    | ↷    |      |
| Traffic Volume (veh/h)          | 30   | 40        | 20    | 45   | 65         | 70   | 30    | 680  | 20   | 50   | 755  | 20   |
| Future Volume (veh/h)           | 30   | 40        | 20    | 45   | 65         | 70   | 30    | 680  | 20   | 50   | 755  | 20   |
| Number                          | 7    | 4         | 14    | 3    | 8          | 18   | 5     | 2    | 12   | 1    | 6    | 16   |
| Initial Q, veh                  | 0    | 0         | 0     | 0    | 0          | 0    | 0     | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj (A_pbT)            | 1.00 |           | 1.00  | 1.00 |            | 1.00 | 1.00  |      | 1.00 | 1.00 |      | 1.00 |
| Parking Bus Adj                 | 1.00 | 1.00      | 1.00  | 1.00 | 1.00       | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach           |      | No        |       |      | No         |      |       | No   |      |      | No   |      |
| Lanes Open During Work Zone     |      |           |       |      |            |      |       |      |      |      |      |      |
| Adj Sat Flow, veh/h/ln          | 1900 | 1856      | 1856  | 1900 | 1870       | 1870 | 1841  | 1885 | 1885 | 1707 | 1885 | 1885 |
| Adj Flow Rate, veh/h            | 49   | 67        | 49    | 55   | 88         | 84   | 43    | 747  | 27   | 53   | 944  | 24   |
| Peak Hour Factor                | 0.61 | 0.60      | 0.41  | 0.82 | 0.74       | 0.83 | 0.69  | 0.91 | 0.75 | 0.95 | 0.80 | 0.85 |
| Percent Heavy Veh, %            | 0    | 3         | 3     | 0    | 2          | 2    | 4     | 1    | 1    | 13   | 1    | 1    |
| Opposing Right Turn Influence   | Yes  |           |       | Yes  |            |      | Yes   |      |      | Yes  |      |      |
| Cap, veh/h                      | 125  | 153       | 112   | 172  | 135        | 129  | 426   | 2394 | 86   | 479  | 2431 | 62   |
| HCM Platoon Ratio               | 1.00 | 1.00      | 1.00  | 1.00 | 1.00       | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Prop Arrive On Green            | 0.15 | 0.15      | 0.15  | 0.15 | 0.15       | 0.15 | 0.03  | 0.68 | 0.68 | 0.03 | 0.68 | 0.68 |
| Unsig. Movement Delay           |      |           |       |      |            |      |       |      |      |      |      |      |
| Ln Grp Delay, s/veh             | 66.4 | 0.0       | 54.8  | 61.2 | 0.0        | 58.4 | 7.2   | 9.8  | 9.8  | 6.7  | 10.6 | 10.6 |
| Ln Grp LOS                      | E    | A         | D     | E    | A          | E    | A     | A    | A    | A    | B    | B    |
| Approach Vol, veh/h             |      | 165       |       |      | 227        |      |       | 817  |      |      | 1021 |      |
| Approach Delay, s/veh           |      | 58.3      |       |      | 59.0       |      |       | 9.7  |      |      | 10.4 |      |
| Approach LOS                    |      | E         |       |      | E          |      |       | A    |      |      | B    |      |
| Timer:                          |      | 1         | 2     | 3    | 4          | 5    | 6     | 7    | 8    |      |      |      |
| Assigned Phs                    |      | 1         | 2     |      | 4          | 5    | 6     |      | 8    |      |      |      |
| Case No                         |      | 1.1       | 4.0   |      | 6.0        | 1.1  | 4.0   |      | 6.0  |      |      |      |
| Phs Duration (G+Y+Rc), s        |      | 10.9      | 101.1 |      | 28.1       | 10.6 | 101.4 |      | 28.1 |      |      |      |
| Change Period (Y+Rc), s         |      | 6.5       | 6.0   |      | 6.5        | 6.5  | 6.0   |      | 6.5  |      |      |      |
| Max Green (Gmax), s             |      | 15.5      | 73.0  |      | 32.5       | 12.5 | 76.0  |      | 32.5 |      |      |      |
| Max Allow Headway (MAH), s      |      | 3.8       | 6.1   |      | 5.0        | 3.8  | 6.1   |      | 5.1  |      |      |      |
| Max Q Clear (g_c+I1), s         |      | 3.4       | 14.1  |      | 20.7       | 3.0  | 18.1  |      | 16.2 |      |      |      |
| Green Ext Time (g_e), s         |      | 0.1       | 8.4   |      | 0.6        | 0.0  | 11.7  |      | 1.0  |      |      |      |
| Prob of Phs Call (p_c)          |      | 0.87      | 1.00  |      | 1.00       | 0.81 | 1.00  |      | 1.00 |      |      |      |
| Prob of Max Out (p_x)           |      | 0.00      | 0.00  |      | 0.02       | 0.00 | 0.02  |      | 0.00 |      |      |      |
| <b>Left-Turn Movement Data</b>  |      |           |       |      |            |      |       |      |      |      |      |      |
| Assigned Mvmt                   |      | 1         |       |      | 7          | 5    |       |      | 3    |      |      |      |
| Mvmt Sat Flow, veh/h            |      | 1626      |       |      | 1230       | 1753 |       |      | 1293 |      |      |      |
| <b>Through Movement Data</b>    |      |           |       |      |            |      |       |      |      |      |      |      |
| Assigned Mvmt                   |      |           | 2     |      | 4          |      | 6     |      | 8    |      |      |      |
| Mvmt Sat Flow, veh/h            |      |           | 3525  |      | 994        |      | 3569  |      | 878  |      |      |      |
| <b>Right-Turn Movement Data</b> |      |           |       |      |            |      |       |      |      |      |      |      |
| Assigned Mvmt                   |      |           | 12    |      | 14         |      | 16    |      | 18   |      |      |      |
| Mvmt Sat Flow, veh/h            |      |           | 127   |      | 727        |      | 91    |      | 838  |      |      |      |
| <b>Left Lane Group Data</b>     |      |           |       |      |            |      |       |      |      |      |      |      |
| Assigned Mvmt                   |      | 1         | 0     | 0    | 7          | 5    | 0     | 0    | 3    |      |      |      |
| Lane Assignment                 |      | L (Pr/Pm) |       |      | LL (Pr/Pm) |      |       |      | L    |      |      |      |

# HCM 6th Signalized Intersection Capacity Analysis

## 7: Veterans Parkway & 8th Street 2044, PM Peak

07/21/2021

|                                     |      |      |      |      |      |      |      |      |
|-------------------------------------|------|------|------|------|------|------|------|------|
| Lanes in Grp                        | 1    | 0    | 0    | 1    | 1    | 0    | 0    | 1    |
| Grp Vol (v), veh/h                  | 53   | 0    | 0    | 49   | 43   | 0    | 0    | 55   |
| Grp Sat Flow (s), veh/h/ln          | 1626 | 0    | 0    | 1230 | 1753 | 0    | 0    | 1293 |
| Q Serve Time (g_s), s               | 1.4  | 0.0  | 0.0  | 5.5  | 1.0  | 0.0  | 0.0  | 5.6  |
| Cycle Q Clear Time (g_c), s         | 1.4  | 0.0  | 0.0  | 18.7 | 1.0  | 0.0  | 0.0  | 14.2 |
| Perm LT Sat Flow (s_l), veh/h/ln    | 636  | 0    | 0    | 1230 | 571  | 0    | 0    | 1293 |
| Shared LT Sat Flow (s_sh), veh/h/ln | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Perm LT Eff Green (g_p), s          | 95.1 | 0.0  | 0.0  | 21.6 | 95.1 | 0.0  | 0.0  | 21.6 |
| Perm LT Serve Time (g_u), s         | 83.0 | 0.0  | 0.0  | 8.4  | 79.3 | 0.0  | 0.0  | 13.0 |
| Perm LT Q Serve Time (g_ps), s      | 1.1  | 0.0  | 0.0  | 5.5  | 1.3  | 0.0  | 0.0  | 5.6  |
| Time to First Blk (g_f), s          | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Serve Time pre Blk (g_fs), s        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Prop LT Inside Lane (P_L)           | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| Lane Grp Cap (c), veh/h             | 479  | 0    | 0    | 125  | 426  | 0    | 0    | 172  |
| V/C Ratio (X)                       | 0.11 | 0.00 | 0.00 | 0.39 | 0.10 | 0.00 | 0.00 | 0.32 |
| Avail Cap (c_a), veh/h              | 608  | 0    | 0    | 221  | 532  | 0    | 0    | 273  |
| Upstream Filter (I)                 | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| Uniform Delay (d1), s/veh           | 6.6  | 0.0  | 0.0  | 64.4 | 7.1  | 0.0  | 0.0  | 60.1 |
| Incr Delay (d2), s/veh              | 0.1  | 0.0  | 0.0  | 2.0  | 0.1  | 0.0  | 0.0  | 1.1  |
| Initial Q Delay (d3), s/veh         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Control Delay (d), s/veh            | 6.7  | 0.0  | 0.0  | 66.4 | 7.2  | 0.0  | 0.0  | 61.2 |
| 1st-Term Q (Q1), veh/ln             | 0.4  | 0.0  | 0.0  | 1.7  | 0.4  | 0.0  | 0.0  | 1.9  |
| 2nd-Term Q (Q2), veh/ln             | 0.0  | 0.0  | 0.0  | 0.1  | 0.0  | 0.0  | 0.0  | 0.1  |
| 3rd-Term Q (Q3), veh/ln             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile Back of Q Factor (f_B%)        | 1.00 | 0.00 | 0.00 | 1.00 | 1.00 | 0.00 | 0.00 | 1.00 |
| %ile Back of Q (50%), veh/ln        | 0.5  | 0.0  | 0.0  | 1.8  | 0.4  | 0.0  | 0.0  | 1.9  |
| %ile Storage Ratio (RQ%)            | 0.11 | 0.00 | 0.00 | 0.56 | 0.13 | 0.00 | 0.00 | 0.73 |
| Initial Q (Qb), veh                 | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Final (Residual) Q (Qe), veh        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Delay (ds), s/veh               | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Q (Qs), veh                     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Cap (cs), veh/h                 | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Q Clear Time (tc), h        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| <b>Middle Lane Group Data</b>       |      |      |      |      |      |      |      |      |
| Assigned Mvmt                       | 0    | 2    | 0    | 4    | 0    | 6    | 0    | 8    |
| Lane Assignment                     | T    |      |      | T    |      |      |      |      |
| Lanes in Grp                        | 0    | 1    | 0    | 0    | 0    | 1    | 0    | 0    |
| Grp Vol (v), veh/h                  | 0    | 379  | 0    | 0    | 0    | 474  | 0    | 0    |
| Grp Sat Flow (s), veh/h/ln          | 0    | 1791 | 0    | 0    | 0    | 1791 | 0    | 0    |
| Q Serve Time (g_s), s               | 0.0  | 12.1 | 0.0  | 0.0  | 0.0  | 16.1 | 0.0  | 0.0  |
| Cycle Q Clear Time (g_c), s         | 0.0  | 12.1 | 0.0  | 0.0  | 0.0  | 16.1 | 0.0  | 0.0  |
| Lane Grp Cap (c), veh/h             | 0    | 1216 | 0    | 0    | 0    | 1220 | 0    | 0    |
| V/C Ratio (X)                       | 0.00 | 0.31 | 0.00 | 0.00 | 0.00 | 0.39 | 0.00 | 0.00 |
| Avail Cap (c_a), veh/h              | 0    | 1216 | 0    | 0    | 0    | 1220 | 0    | 0    |
| Upstream Filter (I)                 | 0.00 | 1.00 | 0.00 | 0.00 | 0.00 | 1.00 | 0.00 | 0.00 |
| Uniform Delay (d1), s/veh           | 0.0  | 9.2  | 0.0  | 0.0  | 0.0  | 9.7  | 0.0  | 0.0  |
| Incr Delay (d2), s/veh              | 0.0  | 0.7  | 0.0  | 0.0  | 0.0  | 0.9  | 0.0  | 0.0  |
| Initial Q Delay (d3), s/veh         | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Control Delay (d), s/veh            | 0.0  | 9.8  | 0.0  | 0.0  | 0.0  | 10.6 | 0.0  | 0.0  |
| 1st-Term Q (Q1), veh/ln             | 0.0  | 4.5  | 0.0  | 0.0  | 0.0  | 6.0  | 0.0  | 0.0  |
| 2nd-Term Q (Q2), veh/ln             | 0.0  | 0.2  | 0.0  | 0.0  | 0.0  | 0.3  | 0.0  | 0.0  |

# HCM 6th Signalized Intersection Capacity Analysis

## 7: Veterans Parkway & 8th Street 2044, PM Peak

07/21/2021

|                              |      |      |      |      |      |      |      |      |
|------------------------------|------|------|------|------|------|------|------|------|
| 3rd-Term Q (Q3), veh/ln      | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile Back of Q Factor (f_B%) | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| %ile Back of Q (50%), veh/ln | 0.0  | 4.7  | 0.0  | 0.0  | 0.0  | 6.3  | 0.0  | 0.0  |
| %ile Storage Ratio (RQ%)     | 0.00 | 0.22 | 0.00 | 0.00 | 0.00 | 0.28 | 0.00 | 0.00 |
| Initial Q (Qb), veh          | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Final (Residual) Q (Qe), veh | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Delay (ds), s/veh        | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Q (Qs), veh              | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Cap (cs), veh/h          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Q Clear Time (tc), h | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |

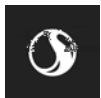
### Right Lane Group Data

|                                  |      |      |      |      |      |      |      |      |
|----------------------------------|------|------|------|------|------|------|------|------|
| Assigned Mvmt                    | 0    | 12   | 0    | 14   | 0    | 16   | 0    | 18   |
| Lane Assignment                  |      | T+R  |      | T+R  |      | T+R  |      | T+R  |
| Lanes in Grp                     | 0    | 1    | 0    | 1    | 0    | 1    | 0    | 1    |
| Grp Vol (v), veh/h               | 0    | 395  | 0    | 116  | 0    | 494  | 0    | 172  |
| Grp Sat Flow (s), veh/h/ln       | 0    | 1862 | 0    | 1721 | 0    | 1869 | 0    | 1716 |
| Q Serve Time (g_s), s            | 0.0  | 12.1 | 0.0  | 8.6  | 0.0  | 16.1 | 0.0  | 13.2 |
| Cycle Q Clear Time (g_c), s      | 0.0  | 12.1 | 0.0  | 8.6  | 0.0  | 16.1 | 0.0  | 13.2 |
| Prot RT Sat Flow (s_R), veh/h/ln | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Prot RT Eff Green (g_R), s       | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Prop RT Outside Lane (P_R)       | 0.00 | 0.07 | 0.00 | 0.42 | 0.00 | 0.05 | 0.00 | 0.49 |
| Lane Grp Cap (c), veh/h          | 0    | 1264 | 0    | 265  | 0    | 1273 | 0    | 264  |
| V/C Ratio (X)                    | 0.00 | 0.31 | 0.00 | 0.44 | 0.00 | 0.39 | 0.00 | 0.65 |
| Avail Cap (c_a), veh/h           | 0    | 1264 | 0    | 400  | 0    | 1273 | 0    | 398  |
| Upstream Filter (I)              | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d1), s/veh        | 0.0  | 9.2  | 0.0  | 53.7 | 0.0  | 9.7  | 0.0  | 55.7 |
| Incr Delay (d2), s/veh           | 0.0  | 0.6  | 0.0  | 1.1  | 0.0  | 0.9  | 0.0  | 2.7  |
| Initial Q Delay (d3), s/veh      | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Control Delay (d), s/veh         | 0.0  | 9.8  | 0.0  | 54.8 | 0.0  | 10.6 | 0.0  | 58.4 |
| 1st-Term Q (Q1), veh/ln          | 0.0  | 4.7  | 0.0  | 3.7  | 0.0  | 6.2  | 0.0  | 5.7  |
| 2nd-Term Q (Q2), veh/ln          | 0.0  | 0.2  | 0.0  | 0.1  | 0.0  | 0.3  | 0.0  | 0.2  |
| 3rd-Term Q (Q3), veh/ln          | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile Back of Q Factor (f_B%)     | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| %ile Back of Q (50%), veh/ln     | 0.0  | 4.9  | 0.0  | 3.8  | 0.0  | 6.6  | 0.0  | 5.9  |
| %ile Storage Ratio (RQ%)         | 0.00 | 0.22 | 0.00 | 0.28 | 0.00 | 0.29 | 0.00 | 0.43 |
| Initial Q (Qb), veh              | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Final (Residual) Q (Qe), veh     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Delay (ds), s/veh            | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Q (Qs), veh                  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Sat Cap (cs), veh/h              | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Initial Q Clear Time (tc), h     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |

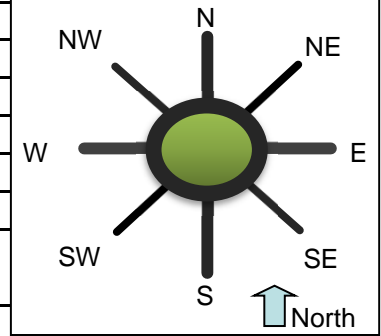
### Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 18.6 |
| HCM 6th LOS        | B    |

## Appendix G GDOT ROUNDABOUT ANALYSIS TOOL RESULTS



| <b>General &amp; Site Information</b> |  | v 4.2 |
|---------------------------------------|--|-------|
| Analyst:                              | Joshua Ekstedt                             |       |
| Agency/Co:                            | Stantec                                    |       |
| Date:                                 | 11/18/2021                                 |       |
| Project or PI#:                       | 8th Street Roadway Improvements, 171007027 |       |
| Year, Peak Hour:                      | 2044, 11:30 AM                             |       |
| County/District:                      | Muscookee County                           |       |
| Intersection Name:                    | 8th Street @ 2nd Avenue                    |       |



| <b>Volumes</b>        |                | <b>Entry Legs (FROM)</b> |               |              |               |              |               |              |               |
|-----------------------|----------------|--------------------------|---------------|--------------|---------------|--------------|---------------|--------------|---------------|
|                       |                | <b>N (1)</b>             | <b>NE (2)</b> | <b>E (3)</b> | <b>SE (4)</b> | <b>S (5)</b> | <b>SW (6)</b> | <b>W (7)</b> | <b>NW (8)</b> |
| <b>Exit Legs (TO)</b> | N (1), vph     |                          |               | 20           |               | 25           |               | 5            |               |
|                       | NE (2), vph    |                          |               |              |               |              |               |              |               |
|                       | E (3), vph     | 5                        |               |              |               | 15           |               | 55           |               |
|                       | SE (4), vph    |                          |               |              |               |              |               |              |               |
|                       | S (5), vph     | 40                       |               | 5            |               |              |               | 0            |               |
|                       | SW (6), vph    |                          |               |              |               |              |               |              |               |
|                       | W (7), vph     | 15                       |               | 90           |               | 5            |               |              |               |
|                       | NW (8), vph    |                          |               |              |               |              |               |              |               |
| Output                | Total Vehicles | 60                       | 0             | 115          | 0             | 45           | 0             | 60           | 0             |

| <b>Volume Characteristics</b> | <b>N</b> | <b>NE</b> | <b>E</b> | <b>SE</b> | <b>S</b> | <b>SW</b> | <b>W</b> | <b>NW</b> |
|-------------------------------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|
| % Cars                        | 89.0%    | 100.0%    | 93.5%    | 100.0%    | 96.7%    | 100.0%    | 94.4%    | 100.0%    |
| % Heavy Vehicles              | 11.0%    | 0.0%      | 5.6%     | 0.0%      | 3.3%     | 0.0%      | 5.6%     | 0.0%      |
| % Bicycle                     | 0.0%     | 0.0%      | 0.9%     | 0.0%      | 0.0%     | 0.0%      | 0.0%     | 0.0%      |
| # of Pedestrians (ped/hr)     | 0        | 0         | 0        | 0         | 2        | 0         | 3        | 0         |
| PHF                           | 0.80     | 0.95      | 0.87     | 0.95      | 0.75     | 0.95      | 0.64     | 0.95      |
| F <sub>HV</sub>               | 0.901    | 1.000     | 0.951    | 1.000     | 0.968    | 1.000     | 0.947    | 1.000     |
| F <sub>ped</sub>              | 1.000    | 1.000     | 1.000    | 1.000     | 1.000    | 1.000     | 1.000    | 1.000     |

| <b>Entry/Conflicting Flows</b> | <b>N</b> | <b>NE</b> | <b>E</b> | <b>SE</b> | <b>S</b> | <b>SW</b> | <b>W</b> | <b>NW</b> |
|--------------------------------|----------|-----------|----------|-----------|----------|-----------|----------|-----------|
| Flow to Leg # N (1), pcu/h     | 0        | 0         | 24       | 0         | 34       | 0         | 8        | 0         |
| NE (2), pcu/h                  | 0        | 0         | 0        | 0         | 0        | 0         | 0        | 0         |
| E (3), pcu/h                   | 7        | 0         | 0        | 0         | 21       | 0         | 90       | 0         |
| SE (4), pcu/h                  | 0        | 0         | 0        | 0         | 0        | 0         | 0        | 0         |
| S (5), pcu/h                   | 55       | 0         | 6        | 0         | 0        | 0         | 0        | 0         |
| SW (6), pcu/h                  | 0        | 0         | 0        | 0         | 0        | 0         | 0        | 0         |
| W (7), pcu/h                   | 21       | 0         | 109      | 0         | 7        | 0         | 0        | 0         |
| NW (8), pcu/h                  | 0        | 0         | 0        | 0         | 0        | 0         | 0        | 0         |
| Entry flow, pcu/h              | 83       | 0         | 139      | 0         | 62       | 0         | 99       | 0         |
| Conflicting flow, pcu/h        | 122      | 0         | 50       | 0         | 105      | 0         | 68       | 0         |

| <b>Results: Approach Measures of Effectiveness</b> |      |    |      |    |      |    |      |    |
|--|------|----|------|----|------|----|------|----|
| HCM 2010 Edition                                   | N    | NE | E    | SE | S    | SW | W    | NW |
| Entry Capacity, vph                                | 901  | NA | 1022 | NA | 984  | NA | 999  | NA |
| Entry Flow Rates, vph                              | 75   | 0  | 132  | 0  | 60   | 0  | 93   | 0  |
| V/C ratio  | 0.08 |    | 0.13 |    | 0.06 |    | 0.09 |    |
| Control Delay, sec/pcu                             | 4.8  |    | 4.7  |    | 4.2  |    | 4.4  |    |
| LOS  | A    |    | A    |    | A    |    | A    |    |
| Average Queue (ft)                                 | 2    |    | 4    |    | 2    |    | 3    |    |
| 95th % Queue (ft)                                  | 8    |    | 12   |    | 5    |    | 8    |    |

| <b>Overall Intersection Measures of Effectiveness</b> |     |         |   |                  |      |
|---|-----|---------|---|------------------|------|
| Int Control Delay (sec)                               | 4.6 | Int LOS | A | Max Approach V/C | 0.13 |

Notes:

v 4.2

Unit Legend:

vph = vehicles per hour

PHF = peak hour factor

F<sub>HV</sub> = heavy vehicle factor

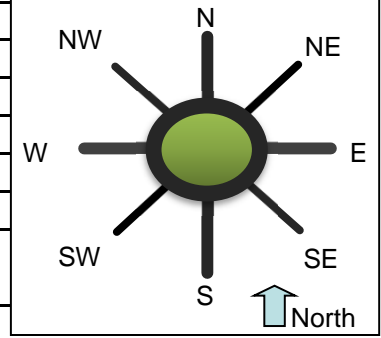
pcu = passenger car unit

**Bypass Lane Merge Point Analysis (if applicable)**

| Bypass Characteristics  | Bypass #1 | Bypass #2 | Bypass #3 | Bypass #4 | Bypass #5 | Bypass #6 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|
| Select Entry Leg from Bypass (FROM)   |           |           |           |           |           |           |
| Select Exit Leg for Bypass (TO)   |           |           |           |           |           |           |
| Does the bypass have a dedicated receiving lane?                                |           |           |           |           |           |           |
| <i>Volumes</i>  |           |           |           |           |           |           |
| Right Turn Volume removed from Entry Leg  |           |           |           |           |           |           |
| <i>Volume Characteristics (for entry leg)</i>                                   |           |           |           |           |           |           |
| PHF   |           |           |           |           |           |           |
| F <sub>HV</sub>   |           |           |           |           |           |           |
| F <sub>ped</sub>  |           |           |           |           |           |           |
| <b>NOTE: Volume Characteristics for Exit Leg are already taken into account</b> |           |           |           |           |           |           |
| <i>Entry/Conflicting Flows</i>  |           |           |           |           |           |           |
| Entry Flow, pcu/hr  |           |           |           |           |           |           |
| Conflicting Flow, pcu/hr  |           |           |           |           |           |           |
| <b>Bypass Lane Results (HCM 2010 Edition)</b>                                   |           |           |           |           |           |           |
| Entry Capacity of Bypass, vph   |           |           |           |           |           |           |
| Flow Rates of Exiting Traffic, vph  |           |           |           |           |           |           |
| V/C ratio   |           |           |           |           |           |           |
| Control Delay, s/veh  |           |           |           |           |           |           |
| LOS   |           |           |           |           |           |           |
| 95th % Queue (veh)  |           |           |           |           |           |           |
| 95th % Queue (ft)   |           |           |           |           |           |           |
| Approach w/Bypass Delay, s/veh  |           |           |           |           |           |           |
| Approach w/Bypass LOS   |           |           |           |           |           |           |



| General & Site Information |  | v 4.2 |
|----------------------------|--|-------|
| Analyst:                   | Joshua Ekstedt                             |       |
| Agency/Co:                 | Stantec                                    |       |
| Date:                      | 11/18/2021                                 |       |
| Project or PI#:            | 8th Street Roadway Improvements, 171007027 |       |
| Year, Peak Hour:           | 2044, 4:30 PM                              |       |
| County/District:           | Muscookee County                           |       |
| Intersection Name:         | 8th Street @ 2nd Avenue                    |       |



| Volumes        |                | Entry Legs (FROM) |        |       |        |       |        |       |        |
|----------------|----------------|-------------------|--------|-------|--------|-------|--------|-------|--------|
|                |                | N (1)             | NE (2) | E (3) | SE (4) | S (5) | SW (6) | W (7) | NW (8) |
| Exit Legs (TO) | N (1), vph     |                   |        | 5     |        | 30    |        | 5     |        |
|                | NE (2), vph    |                   |        |       |        |       |        |       |        |
|                | E (3), vph     | 15                |        |       |        | 15    |        | 65    |        |
|                | SE (4), vph    |                   |        |       |        |       |        |       |        |
|                | S (5), vph     | 55                |        | 20    |        |       |        | 5     |        |
|                | SW (6), vph    |                   |        |       |        |       |        |       |        |
|                | W (7), vph     | 20                |        | 90    |        | 5     |        |       |        |
|                | NW (8), vph    |                   |        |       |        |       |        |       |        |
| Output         | Total Vehicles | 90                | 0      | 115   | 0      | 50    | 0      | 75    | 0      |

| Volume Characteristics    | N     | NE     | E     | SE     | S      | SW     | W     | NW     |
|---------------------------|-------|--------|-------|--------|--------|--------|-------|--------|
| % Cars                    | 94.4% | 100.0% | 98.8% | 100.0% | 100.0% | 100.0% | 96.5% | 100.0% |
| % Heavy Vehicles          | 4.5%  | 0.0%   | 1.2%  | 0.0%   | 0.0%   | 0.0%   | 3.5%  | 0.0%   |
| % Bicycle                 | 1.1%  | 0.0%   | 0.0%  | 0.0%   | 0.0%   | 0.0%   | 0.0%  | 0.0%   |
| # of Pedestrians (ped/hr) | 2     | 0      | 0     | 0      | 5      | 0      |       | 0      |
| PHF                       | 0.75  | 0.95   | 0.94  | 0.95   | 0.80   | 0.95   | 0.75  | 0.95   |
| F <sub>HV</sub>           | 0.962 | 1.000  | 0.988 | 1.000  | 1.000  | 1.000  | 0.966 | 1.000  |
| F <sub>ped</sub>          | 1.000 | 1.000  | 1.000 | 1.000  | 0.999  | 1.000  | 1.000 | 1.000  |

| Entry/Conflicting Flows    | N   | NE | E   | SE | S   | SW | W   | NW |
|----------------------------|-----|----|-----|----|-----|----|-----|----|
| Flow to Leg # N (1), pcu/h | 0   | 0  | 5   | 0  | 38  | 0  | 7   | 0  |
| NE (2), pcu/h              | 0   | 0  | 0   | 0  | 0   | 0  | 0   | 0  |
| E (3), pcu/h               | 21  | 0  | 0   | 0  | 19  | 0  | 90  | 0  |
| SE (4), pcu/h              | 0   | 0  | 0   | 0  | 0   | 0  | 0   | 0  |
| S (5), pcu/h               | 76  | 0  | 22  | 0  | 0   | 0  | 7   | 0  |
| SW (6), pcu/h              | 0   | 0  | 0   | 0  | 0   | 0  | 0   | 0  |
| W (7), pcu/h               | 28  | 0  | 97  | 0  | 6   | 0  | 0   | 0  |
| NW (8), pcu/h              | 0   | 0  | 0   | 0  | 0   | 0  | 0   | 0  |
| Entry flow, pcu/h          | 125 | 0  | 124 | 0  | 63  | 0  | 104 | 0  |
| Conflicting flow, pcu/h    | 125 | 0  | 51  | 0  | 117 | 0  | 119 | 0  |

| <b>Results: Approach Measures of Effectiveness</b> |      |    |      |    |      |    |      |    |
|--|------|----|------|----|------|----|------|----|
| HCM 2010 Edition                                   | N    | NE | E    | SE | S    | SW | W    | NW |
| Entry Capacity, vph                                | 959  | NA | 1061 | NA | 1004 | NA | 969  | NA |
| Entry Flow Rates, vph                              | 120  | 0  | 123  | 0  | 63   | 0  | 100  | 0  |
| V/C ratio  | 0.13 |    | 0.12 |    | 0.06 |    | 0.10 |    |
| Control Delay, sec/pcu                             | 4.9  |    | 4.4  |    | 4.1  |    | 4.7  |    |
| LOS  | A    |    | A    |    | A    |    | A    |    |
| Average Queue (ft)                                 | 4    |    | 4    |    | 2    |    | 3    |    |
| 95th % Queue (ft)                                  | 11   |    | 10   |    | 5    |    | 9    |    |

| <b>Overall Intersection Measures of Effectiveness</b> |     |         |   |                  |      |
|---|-----|---------|---|------------------|------|
| Int Control Delay (sec)                               | 4.6 | Int LOS | A | Max Approach V/C | 0.13 |

Notes:

v 4.2

Unit Legend:

vph = vehicles per hour

PHF = peak hour factor

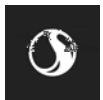
F<sub>HV</sub> = heavy vehicle factor

pcu = passenger car unit

**Bypass Lane Merge Point Analysis (if applicable)**

| Bypass Characteristics  | Bypass #1 | Bypass #2 | Bypass #3 | Bypass #4 | Bypass #5 | Bypass #6 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|
| Select Entry Leg from Bypass (FROM)   |           |           |           |           |           |           |
| Select Exit Leg for Bypass (TO)   |           |           |           |           |           |           |
| Does the bypass have a dedicated receiving lane?                                |           |           |           |           |           |           |
| <b>Volumes</b>  |           |           |           |           |           |           |
| Right Turn Volume removed from Entry Leg  |           |           |           |           |           |           |
| <b>Volume Characteristics (for entry leg)</b>                                   |           |           |           |           |           |           |
| PHF   |           |           |           |           |           |           |
| F <sub>HV</sub>   |           |           |           |           |           |           |
| F <sub>ped</sub>  |           |           |           |           |           |           |
| <b>NOTE: Volume Characteristics for Exit Leg are already taken into account</b> |           |           |           |           |           |           |
| <b>Entry/Conflicting Flows</b>  |           |           |           |           |           |           |
| Entry Flow, pcu/hr  |           |           |           |           |           |           |
| Conflicting Flow, pcu/hr  |           |           |           |           |           |           |
| <b>Bypass Lane Results (HCM 2010 Edition)</b>                                   |           |           |           |           |           |           |
| Entry Capacity of Bypass, vph   |           |           |           |           |           |           |
| Flow Rates of Exiting Traffic, vph  |           |           |           |           |           |           |
| V/C ratio   |           |           |           |           |           |           |
| Control Delay, s/veh  |           |           |           |           |           |           |
| LOS   |           |           |           |           |           |           |
| 95th % Queue (veh)  |           |           |           |           |           |           |
| 95th % Queue (ft)   |           |           |           |           |           |           |
| Approach w/Bypass Delay, s/veh  |           |           |           |           |           |           |
| Approach w/Bypass LOS   |           |           |           |           |           |           |

## Appendix H GROWTH RATE CALCULATIONS



## GDOT TADA Count Station Growth Rate (5 Years)

| 215-0149, Broadway N/O 8th St, 5 year |        |          |
|---------------------------------------|--------|----------|
| Year                                  | Volume | Actuals? |
| 2019                                  | 900    | Estimate |
| 2018                                  | 880    | Actual   |
| 2017                                  | 1,260  | Estimate |
| 2016                                  | 1,240  | Actual   |
| 2015                                  | 970    | Estimate |
| Growth Rate                           |        | -1.9%    |
| Avg Volumes                           |        | 1,050    |
| Trend Growth Rate                     |        | -4.9%    |

| 215-0431, 1st Ave N/O 8th St, 5 year |        |          |
|--------------------------------------|--------|----------|
| Year                                 | Volume | Actuals? |
| 2019                                 | 770    | Actual   |
| 2018                                 | 900    | Estimate |
| 2017                                 | 890    | Estimate |
| 2016                                 | 870    | Estimate |
| 2015                                 | 850    | Actual   |
| Growth Rate                          |        | -2.4%    |
| Avg Volumes                          |        | 860      |
| Trend Growth Rate                    |        | -1.6%    |

| 215-0205, Veterans Pkwy S/O 7th St, 5 year |        |          |
|--|--------|----------|
| Year                                       | Volume | Actuals? |
| 2019                                       | 13,400 | Actual   |
| 2018                                       | 16,700 | Estimate |
| 2017                                       | 16,800 | Estimate |
| 2016                                       | 16,700 | Estimate |
| 2015                                       | 16,200 | Actual   |
| Growth Rate                                |        | -4.6%    |
| Avg Volumes                                |        | 15,960   |
| Trend Growth Rate                          |        | -3.8%    |

| 215-0203, Veterans Pkwy N/O 9th St, 5 year |        |          |
|--|--------|----------|
| Year                                       | Volume | Actuals? |
| 2019                                       | 16,700 | Estimate |
| 2018                                       | 16,600 | Actual   |
| 2017                                       | 16,900 | Estimate |
| 2016                                       | 16,800 | Actual   |
| 2015                                       | 19,000 | Estimate |
| Growth Rate                                |        | -3.2%    |
| Avg Volumes                                |        | 17,200   |
| Trend Growth Rate                          |        | -2.7%    |

|                                |       |
|--------------------------------|-------|
| Avg. Trend Growth Rate, 5 Year | -3.2% |
|--------------------------------|-------|

### GDOT TADA Count Station Growth Rate (10 Years)

| 215-0149, Broadway N/O 8th St, 10 year |        |          |
|--|--------|----------|
| Year                                   | Volume | Actuals? |
| 2019                                   | 900    | Estimate |
| 2018                                   | 880    | Actual   |
| 2017                                   | 1,260  | Estimate |
| 2016                                   | 1,240  | Actual   |
| 2015                                   | 970    | Estimate |
| 2014                                   | 930    | -        |
| 2013                                   | 980    | -        |
| 2012                                   | 960    | -        |
| 2011                                   | 960    | -        |
| 2010                                   | 970    | -        |
| Growth Rate                            |        | -0.8%    |
| Avg Volumes                            |        | 1,010    |
| Trend Growth Rate                      |        | 0.5%     |

| 215-0431, 1st Ave N/O 8th St, 10 year |        |          |
|---------------------------------------|--------|----------|
| Year                                  | Volume | Actuals? |
| 2019                                  | 770    | Actual   |
| 2018                                  | 900    | Estimate |
| 2017                                  | 890    | Estimate |
| 2016                                  | 870    | Estimate |
| 2015                                  | 850    | Actual   |
| 2014                                  | 860    | -        |
| 2013                                  | 860    | -        |
| 2012                                  | 840    | -        |
| 2011                                  | 840    | -        |
| 2010                                  | 1,060  | -        |
| Growth Rate                           |        | -3.5%    |
| Avg Volumes                           |        | 870      |
| Trend Growth Rate                     |        | -1.3%    |

| 215-0205, Veterans Pkwy S/O 7th St, 10 year |        |          |
|---|--------|----------|
| Year  | Volume | Actuals? |
| 2019  | 13,400 | Actual   |
| 2018  | 16,700 | Estimate |
| 2017  | 16,800 | Estimate |
| 2016  | 16,700 | Estimate |
| 2015  | 16,200 | Actual   |
| 2014  | 17,100 | -        |
| 2013  | 17,100 | -        |
| 2012  | 16,000 | -        |
| 2011  | 16,200 | -        |
| 2010  | 17,000 | -        |
| Growth Rate                                 |        | -2.6%    |
| Avg Volumes                                 |        | 16,320   |
| Trend Growth Rate                           |        | -1.1%    |

| 215-0203, Veterans Pkwy N/O 9th St, 10 year |        |          |
|---|--------|----------|
| Year  | Volume | Actuals? |
| 2019  | 16,700 | Estimate |
| 2018  | 16,600 | Actual   |
| 2017  | 16,900 | Estimate |
| 2016  | 16,800 | Actual   |
| 2015  | 19,000 | Estimate |
| 2014  | 18,400 | -        |
| 2013  | 18,100 | -        |
| 2012  | 18,200 | -        |
| 2011  | 21,800 | -        |
| 2010  | 22,100 | -        |
| Growth Rate                                 |        | -3.1%    |
| Avg Volumes                                 |        | 18,460   |
| Trend Growth Rate                           |        | -3.0%    |

|                                 |       |
|---------------------------------|-------|
| Avg. Trend Growth Rate, 10 Year | -2.0% |
|---------------------------------|-------|

Growth Rate based on data from the US Census Population Estimates

| Russell County, AL    |            |
|-----------------------|------------|
| Year                  | Population |
| 2019                  | 57952      |
| 2018                  | 58213      |
| 2017                  | 58480      |
| 2016                  | 58636      |
| 2015                  | 58302      |
| 2014                  | 56980      |
| 2013                  | 55544      |
| 2012                  | 53938      |
| 2011                  | 52490      |
| 2010                  | 51663      |
| Growth Rate           | 1.3%       |
| Avg Volumes           | 56,220     |
| Trendline Growth Rate | 1.4%       |

| Muscogee County, GA   |            |
|-----------------------|------------|
| Year                  | Population |
| 2019                  | 195739     |
| 2018                  | 196670     |
| 2017                  | 198647     |
| 2016                  | 200303     |
| 2015                  | 200285     |
| 2014                  | 198247     |
| 2013                  | 194949     |
| 2012                  | 191278     |
| 2011                  | 188548     |
| 2010                  | 187629     |
| Growth Rate           | 0.5%       |
| Avg Volumes           | 195,230    |
| Trendline Growth Rate | 0.6%       |

| Phenix City, AL       |            |
|-----------------------|------------|
| Year                  | Population |
| 2019                  | 36516      |
| 2018                  | 36641      |
| 2017                  | 36870      |
| 2016                  | 36990      |
| 2015                  | 36639      |
| 2014                  | 35753      |
| 2013                  | 34737      |
| 2012                  | 33555      |
| 2011                  | 32338      |
| 2010                  | 31704      |
| Growth Rate           | 1.6%       |
| Avg Volumes           | 35,170     |
| Trendline Growth Rate | 1.7%       |

| Columbus, GA-AL Metro Area |            |
|----------------------------|------------|
| Year                       | Population |
| 2019                       | 319402     |
| 2018                       | 307724     |
| 2017                       | 309979     |
| 2016                       | 312459     |
| 2015                       | 312016     |
| 2014                       | 308363     |
| 2013                       | 303626     |
| 2012                       | 297618     |
| 2011                       | 292661     |
| 2010                       | 290204     |
| Growth Rate                | 1.1%       |
| Avg Volumes                | 305,410    |
| Trendline Growth Rate      | 0.9%       |

| Columbus-Auburn-Opelika, GA-AL CSA |            |
|------------------------------------|------------|
| Year                               | Population |
| 2019                               | 480554     |
| 2018                               | 500837     |
| 2017                               | 500471     |
| 2016                               | 500424     |
| 2015                               | 497077     |
| 2014                               | 490244     |
| 2013                               | 482176     |
| 2012                               | 459770     |
| 2011                               | 452005     |
| 2010                               | 446913     |
| Growth Rate                        | 0.8%       |
| Avg Volumes                        | 481,050    |
| Trendline Growth Rate              | 1.2%       |

|                  |      |
|------------------|------|
| Avg. Growth Rate | 1.0% |
|------------------|------|

|                              |      |
|------------------------------|------|
| Avg. Growth Rate without CSA | 0.9% |
|------------------------------|------|