

TRAFFIC IMPACT STUDY

For

**11800 E Colfax Avenue Apartments
Aurora, Colorado**

July 2020
Revised:
November 2020

Prepared for:

11800 East Colfax OZB LLC
8 W Arkansas Avenue
Denver, CO 80223

Prepared by:



SM ROCHA, LLC
TRAFFIC AND TRANSPORTATION CONSULTANTS

8703 Yates Drive, Suite 210
Westminster, Colorado 80031
(303) 458-9798

Project Engineer:
Stephen Simon, EIT

Engineer in Responsible Charge:
Fred Lantz, PE



20-021170

| Table of Contents | Page |
|-------------------------------------------------------------------------|-------------|
| I. Introduction | 1 |
| Project Overview | 1 |
| Study Area Boundaries | 1 |
| Site Description | 1 |
| Existing and Committed Surface Transportation Network | 4 |
| II. Existing Traffic Conditions | 5 |
| Existing Traffic Analysis Results | 7 |
| III. Future Traffic Conditions Without Proposed Development..... | 9 |
| Background Traffic Analysis Results – Year 2022 | 12 |
| Background Traffic Analysis Results – Year 2040 | 13 |
| IV. Proposed Project Traffic | 14 |
| Trip Generation | 14 |
| Adjustments to Trip Generation Rates | 15 |
| Trip Distribution | 15 |
| Trip Assignment | 15 |
| V. Future Traffic Conditions With Proposed Developments | 17 |
| VI. Project Impacts | 20 |
| Peak Hour Intersection Levels of Service | 20 |
| Total Traffic Analysis Results Upon Development Build-Out | 21 |
| Queue Length Analysis | 22 |
| Auxiliary Lane Analysis | 23 |
| Pedestrian Trips & Bus Routes | 23 |
| VII. Conclusion | 24 |

| List of Figures | Page |
|------------------------------------------------------------|-------------|
| Figure 1 – Location..... | 2 |
| Figure 2 – Site Plan..... | 3 |
| Figure 3 – Existing Traffic Volumes..... | 6 |
| Figure 4 – Background Traffic Volumes – Year 2022..... | 10 |
| Figure 5 – Background Traffic Volumes – Year 2040..... | 11 |
| Figure 6 – Distribution and Site Generated Assignment..... | 16 |
| Figure 7 – Total Traffic Volumes – Year 2022..... | 18 |
| Figure 8 – Total Traffic Volumes – Year 2040..... | 19 |

| List of Tables | Page |
|---------------------------------------------------------------------------------------------|-------------|
| Table 1 – Intersection Capacity Analysis Summary – Existing Traffic..... | 7 |
| Table 2 – Intersection Capacity Analysis Summary – Background Traffic – Year 2022..... | 12 |
| Table 3 – Intersection Capacity Analysis Summary – Background Traffic – Year 2040..... | 13 |
| Table 4 – Trip Generation Rates..... | 14 |
| Table 5 – Trip Generation Summary..... | 14 |
| Table 6 – Intersection Capacity Analysis Summary – Total Traffic – Year 2022..... | 20 |
| Table 7 – Intersection Capacity Analysis Summary – Total Traffic – Year 2040..... | 21 |
| Table 8 – 95 th Percentile Queue Length Summary – Total Traffic – Year 2040..... | 22 |

Appendices

| | |
|------------|------------------------------|
| APPENDIX A | TRAFFIC COUNT DATA |
| APPENDIX B | LEVEL OF SERVICE DEFINITIONS |
| APPENDIX C | CAPACITY WORKSHEETS |

I. Introduction

Project Overview

This traffic impact study addresses the capacity, geometric, and control requirements associated with the development entitled 11800 E Colfax Avenue Apartments.

This traffic impact study has been revised to address City review comments dated 10/23/2020 regarding additional auxiliary lane analysis, pedestrian analysis, and proposed site plan and access changes.

This proposed residential development consists of an apartment complex. The development is located at 11800 E Colfax Avenue between the intersections of E Colfax Avenue (US 40) with Nome Street and Oswego Street in Aurora, Colorado.

Study Area Boundaries

The study area to be examined in this analysis encompasses the intersections of E Colfax Avenue with Nome Street, Oswego Street, and proposed site accesses.

Figure 1 illustrates location of the site and study intersections.

Site Description

Land for the development is currently occupied by an existing motel land use and is surrounded by a mix of light industrial, commercial, and institutional land uses.

The proposed development is understood to entail the renovation of the existing structure into an apartment complex supporting 95 dwelling units.

Proposed access to the development is provided at the following location: one full-movement access onto E Colfax Avenue (referred to as Site Access). Additional right-in/right-out access is provided onto E Colfax Avenue serving as a fire lane and emergency vehicle access. The remaining existing accesses are anticipated to be closed with the proposed redevelopment.

For purposes of this study, it is anticipated that development construction would be completed by end of Year 2022.

A conceptual site plan, as provided by The Blueprint Effect, is shown on Figure 2. This plan is provided for illustrative purposes.



11800 E COLFAX AVENUE APARTMENTS
Traffic Impact Study

Figure 1
SITE LOCATION

SM ROCHA, LLC
Traffic and Transportation Consultants

November 2020
Page 2

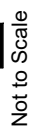
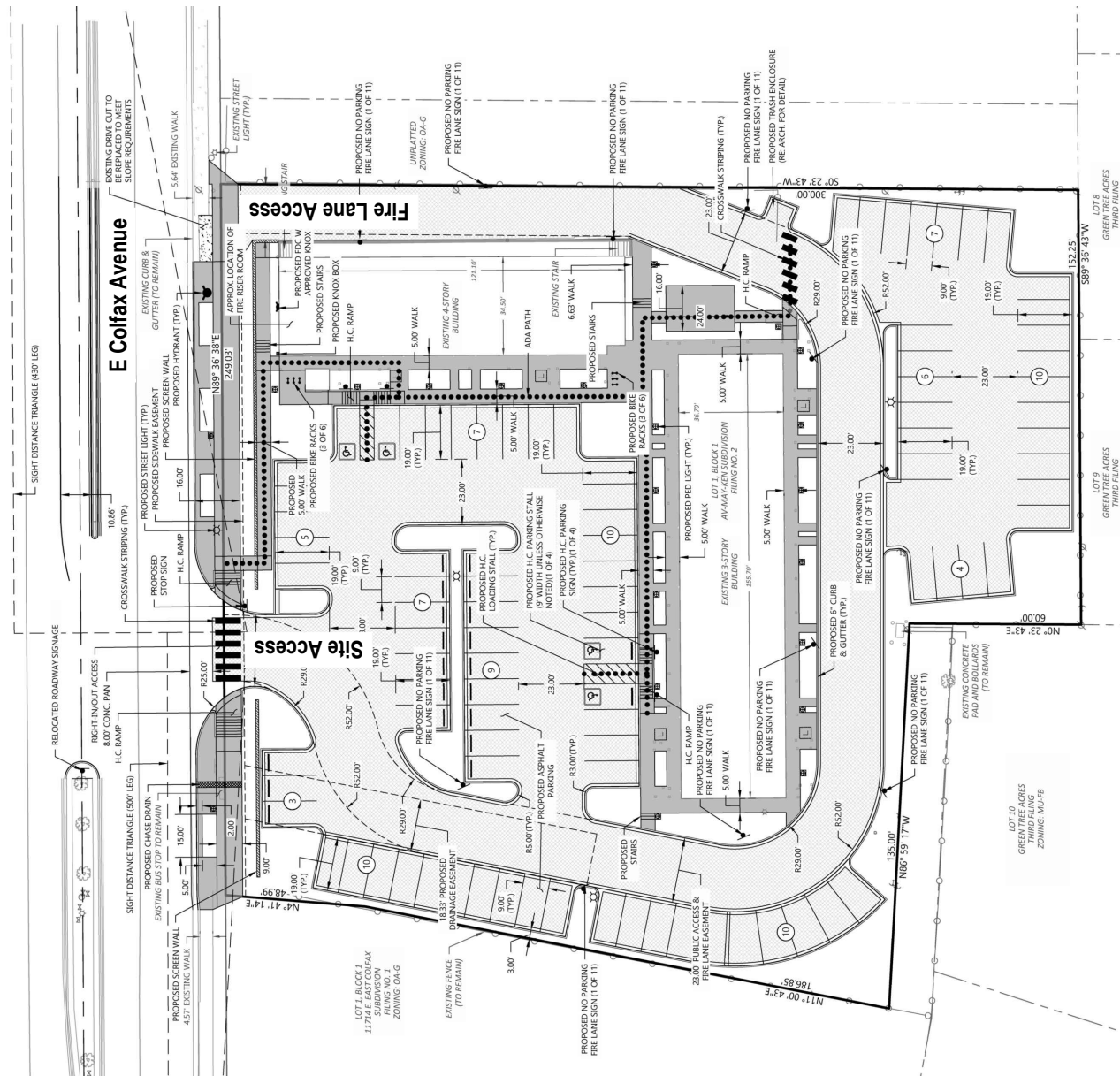


Figure 2 SITE PLAN

November 2020
Page 3

Existing and Committed Surface Transportation Network

Within the study area, E Colfax Avenue is the primary roadway that will accommodate traffic to and from the proposed development. The secondary roadways include Nome Street and Oswego Street. A brief description of each roadway is provided below:

E Colfax Avenue is an east-west state roadway having four through lanes (two lanes in each direction) with a combination of shared and exclusive turn lanes at the intersections within the study area. The Colorado Department of Transportation (CDOT) categorizes the adjacent segment of E Colfax Avenue (US Highway 40) as a Non-Rural Arterial (NR-C) and provides a posted speed limit of 35 MPH.

Nome Street is a north-south collector roadway having two through lanes (one lane in each direction) with shared turn lanes at the intersection within the study area. Nome Street provides a posted speed limit of 25 MPH.

Oswego Street is a north-south collector roadway having two through lanes (one lane in each direction) with shared turn lanes at the intersection within the study area. Oswego Street provides a posted speed limit of 25 MPH.

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

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

II. Existing Traffic Conditions

Morning (AM) and afternoon (PM) peak hour traffic counts were collected at the intersections of E Colfax Avenue with Nome Street and Oswego Street. Average daily (24-hour) traffic volumes were collected on E Colfax Avenue. Counts were collected on July 9, 2020, with AM peak hour counts being collected during the period of 7:00 AM to 9:00 AM, and PM peak hour counts being collected during the period of 4:00 PM to 6:00 PM.

It should be noted that due to the effects of the COVID-19 pandemic traffic volumes collected may not accurately represent peak hour and 24-hour traffic volumes under normal conditions. A comparison of the collected traffic counts with volumes provided by City Staff at the intersection of E Colfax Avenue with Oswego Street, indicates that collected traffic volumes are approximately 57 percent lower than projected traffic volumes under normal conditions. It is noted that City provided volumes were collected on January 30, 2019, with AM peak hour counts being collected during the period of 7:00 AM to 8:00 AM, and PM peak hour counts being collected during the period of 5:00 PM to 6:00 PM. City count data was then grown at a two percent annual growth rate to represent anticipated Year 2020 traffic volumes under normal traffic conditions.

A further comparison of collected average daily (24-hour) traffic volumes with projected average daily traffic volumes provided by the CDOT Online Transportation Information System (OTIS) indicates that daily traffic volumes are approximately 20 percent lower than projected average daily traffic volumes under normal conditions for Year 2020.

Based on the above comparisons, and in order to more accurately represent existing traffic volumes under normal conditions, peak hour traffic volumes for the intersection of E Colfax Avenue with Oswego Street were determined using the City provided data. Peak hour traffic volumes collected for the intersection of E Colfax Avenue with Nome Street were then grown accordingly in order to better correspond with the City provided data for the neighboring Oswego Street intersection. Average daily traffic volumes along E Colfax Avenue were grown to match the projected traffic volumes indicated by CDOT OTIS for Year 2020. These adjusted traffic volumes are shown on Figure 3.

Collected traffic count data is included for reference in Appendix A.

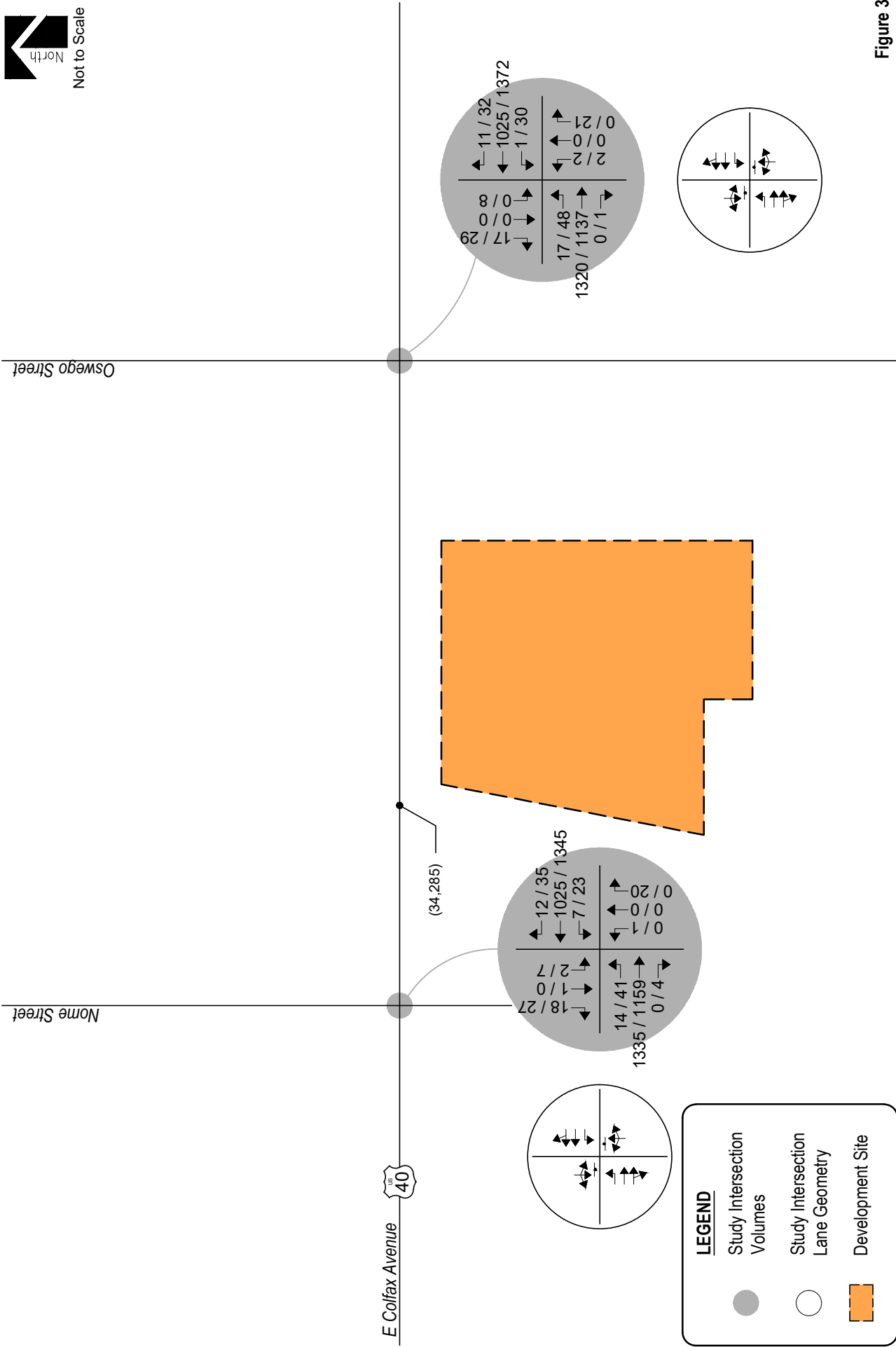


Figure 3
EXISTING TRAFFIC
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

11800 E COLFAX AVENUE APARTMENTS
Traffic Impact Study



SM ROCHA, LLC
Traffic and Transportation Consultants

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

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

The level of service analyses results for existing conditions are summarized in Table 1.

Intersection capacity worksheets developed for this study are provided in Appendix C.

Table 1 – Intersection Capacity Analysis Summary – Existing Traffic

| INTERSECTION LANE GROUPS | LEVEL OF SERVICE | |
|-----------------------------------------------------------|------------------|--------------|
| | AM PEAK HOUR | PM PEAK HOUR |
| E Colfax Avenue (US 40) / Nome Street (Stop-Controlled) | | |
| Eastbound Left | B | B |
| Westbound Left | B | B |
| Northbound Left, Through and Right | A | C |
| Southbound Left, Through and Right | D | F |
| E Colfax Avenue (US 40) / Oswego Street (Stop-Controlled) | | |
| Eastbound Left | B | B |
| Westbound Left | B | B |
| Northbound Left, Through and Right | F | D |
| Southbound Left, Through and Right | B | F |

Key: Stop-Controlled Intersection: Level of Service

Existing Traffic Analysis Results

Under existing conditions, operational analysis shows that the unsignalized intersection of E Colfax Avenue (US 40) with Nome Street has turning movement operations at LOS D or better during the morning peak traffic hour and LOS C or better during the afternoon peak traffic hour. Exceptions would include the southbound turning movements which operate at LOS F during the PM peak traffic hour. The LOS F operation is attributed to the through traffic volume along E Colfax Avenue and the stop-controlled nature of the intersection.

The unsignalized intersection of E Colfax Avenue with Oswego Street has turning movement operations at LOS B during the morning peak traffic hour and LOS D or better during the afternoon peak traffic hour. Exceptions would include the northbound and southbound turning movements which operate at LOS F during the AM and PM peak traffic hours, respectively. The LOS F operations are attributed to the through traffic volume along E Colfax Avenue and the stop-controlled nature of the intersection.

It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours.

III. Future Traffic Conditions Without Proposed Development

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

To account for projected increases in background traffic for Years 2022 and 2040, a compounded annual growth rate was determined using traffic data provided by CDOT's Online Transportation Information System (OTIS), which anticipates a 20-year growth rate less than one percent. Therefore, in order to provide for a conservative analysis, a growth rate of two percent was applied to existing traffic volumes. This annual growth rate is also consistent with regional growth projections and the level of in-fill development expected within the area.

Pursuant to the non-committed area roadway improvements discussed in Section I, Year 2022 and Year 2040 background traffic conditions assume no roadway improvements to accommodate regional transportation demands. This assumption provides for a conservative analysis.

Projected background traffic volumes and intersection geometry for Years 2022 and 2040 are shown on Figure 4 and Figure 5, respectively.

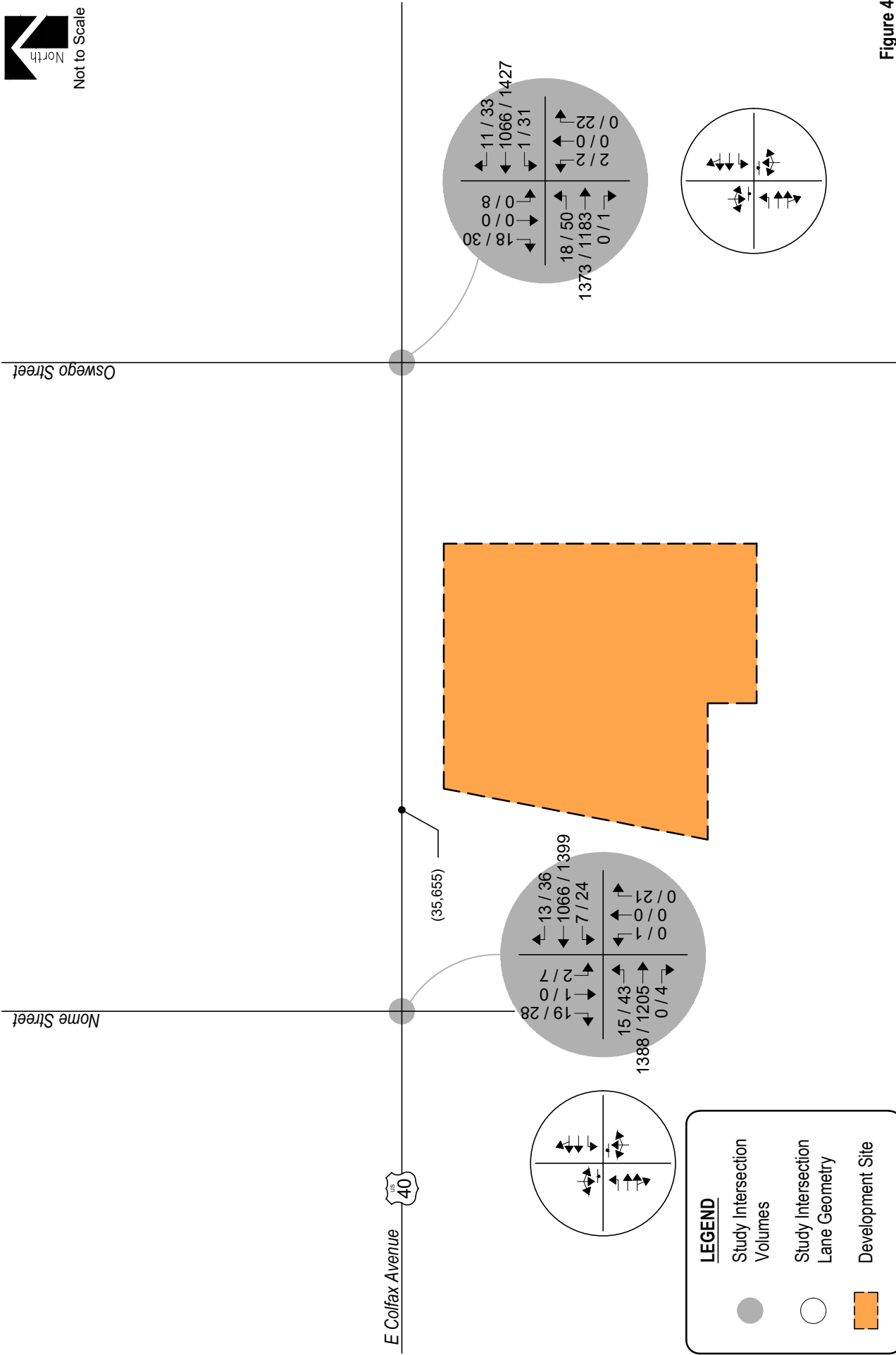


Figure 4
BACKGROUND TRAFFIC - YEAR 2022
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

11800 E COLFAX AVENUE APARTMENTS
Traffic Impact Study



SM ROCHA, LLC
Traffic and Transportation Consultants

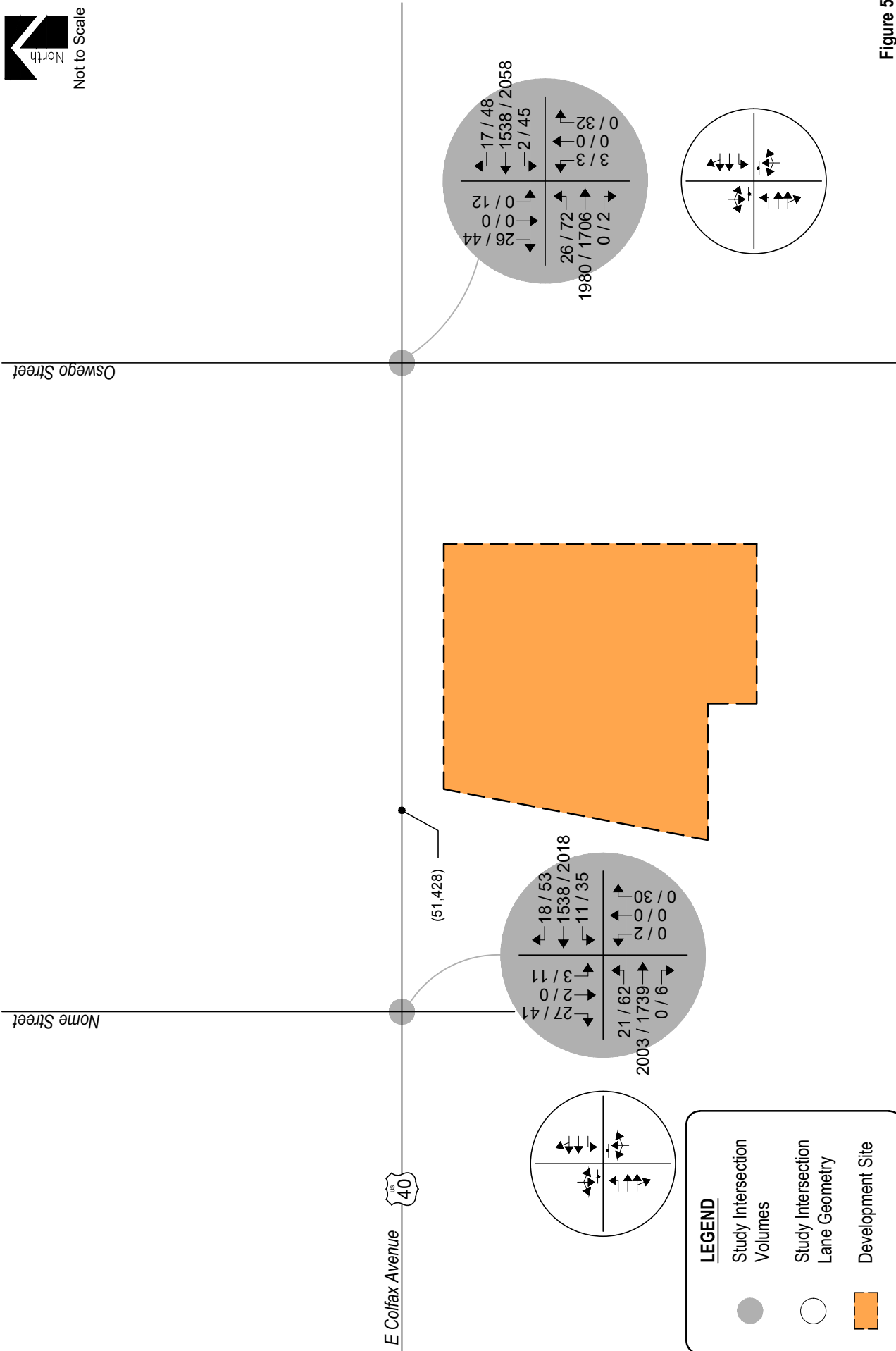


Figure 5
BACKGROUND TRAFFIC - YEAR 2040
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

11800 E COLFAX AVENUE APARTMENTS
Traffic Impact Study



SM ROCHA, LLC
Traffic and Transportation Consultants

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

Background traffic level of service analysis results for Year 2022 are listed in Table 2. Year 2040 operational results are summarized in Table 3.

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

Table 2 – Intersection Capacity Analysis Summary – Background Traffic – Year 2022

| INTERSECTION LANE GROUPS | LEVEL OF SERVICE | |
|-----------------------------------------------------------|------------------|--------------|
| | AM PEAK HOUR | PM PEAK HOUR |
| E Colfax Avenue (US 40) / Nome Street (Stop-Controlled) | | |
| Eastbound Left | B | B |
| Westbound Left | B | B |
| Northbound Left, Through and Right | A | C |
| Southbound Left, Through and Right | D | F |
| E Colfax Avenue (US 40) / Oswego Street (Stop-Controlled) | | |
| Eastbound Left | B | C |
| Westbound Left | B | B |
| Northbound Left, Through and Right | F | D |
| Southbound Left, Through and Right | B | F |

Key: Stop-Controlled Intersection: Level of Service

Background Traffic Analysis Results – Year 2022

Year 2022 background traffic analysis indicates that the unsignalized intersection of E Colfax Avenue with Nome Street has turning movement operations at LOS D or better during the AM peak traffic hour and LOS C or better during the PM peak traffic hour. Exceptions still include the southbound turning movements which operate at LOS F during the PM peak traffic hour. The LOS F operation is attributed to the through traffic volume along E Colfax Avenue and the stop-controlled nature of the intersection.

The unsignalized intersection of E Colfax Avenue with Oswego Street has turning movement operations at LOS B during the morning peak traffic hour and LOS D or better during the afternoon peak traffic hour. Exceptions still include the northbound and southbound turning movements which operate at LOS F during the AM and PM peak traffic hours, respectively. The LOS F operations are attributed to the through traffic volume along E Colfax Avenue and the stop-controlled nature of the intersection.

Table 3 – Intersection Capacity Analysis Summary – Background Traffic – Year 2040

| INTERSECTION LANE GROUPS | LEVEL OF SERVICE | |
|-----------------------------------------------------------|------------------|--------------|
| | AM PEAK HOUR | PM PEAK HOUR |
| E Colfax Avenue (US 40) / Nome Street (Stop-Controlled) | | |
| Eastbound Left | C | D |
| Westbound Left | C | C |
| Northbound Left, Through and Right | A | F |
| Southbound Left, Through and Right | F | F |
| E Colfax Avenue (US 40) / Oswego Street (Stop-Controlled) | | |
| Eastbound Left | C | D |
| Westbound Left | C | C |
| Northbound Left, Through and Right | F | F |
| Southbound Left, Through and Right | C | F |

Key: Stop-Controlled Intersection: Level of Service

Background Traffic Analysis Results – Year 2040

By Year 2040 and without the proposed development, the study intersection of E Colfax Avenue with Nome Street experiences LOS C or better operations during the AM peak traffic hour and LOS D or better operations during the PM peak traffic hour. Exceptions would include the southbound turning movements which operate at LOS F during the AM peak traffic hour, and both the northbound and southbound turning movements which operate at LOS F during the PM peak traffic hour. The LOS F operations are attributed to the through traffic volume along E Colfax Avenue and the stop-controlled nature of the intersection.

The study intersection of E Colfax Avenue with Oswego Street experiences LOS C operations during the AM peak traffic hour and LOS D or better operations during the PM peak traffic hour. Exceptions would include the northbound turning movements which operate at LOS F during the AM peak traffic hour, and both the northbound and southbound turning movements which operate at LOS F during the PM peak traffic hour. The LOS F operations are attributed to the through traffic volume along E Colfax Avenue and the stop-controlled nature of the intersection.

It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours.

IV. Proposed Project Traffic

Trip Generation

Standard traffic generation characteristics compiled by the Institute of Transportation Engineers (ITE) in their report entitled Trip Generation Manual, 10th Edition, were applied to the proposed land use in order to estimate average daily traffic (ADT), AM Peak Hour, and PM Peak Hour vehicle trips. A vehicle trip is defined as a one-way vehicle movement from a point of origin to a point of destination.

The ITE land use code 220 (Multi-Family Housing (Low-Rise)) was used for estimating trip generation because of its best fit to the proposed land use description.

It is noted that the existing land use may result in a reduction of the overall traffic generated by the development site. However, due to the effects of COVID-19, existing traffic generation by the motel land use captured by the collected traffic counts are likely to be less than normal conditions. As such, any reduction to proposed trip generation by the replacement of the existing land use with the proposed apartment land use is considered minor. Therefore, no trip generation comparison is provided. This also provides for a conservative analysis.

Trip generation rates used in this study are presented in Table 4.

Table 4 – Trip Generation Rates

| ITE CODELAND USEUNIT | | | TRIP GENERATION RATES | | | | | | |
|-------------------------|---------------------------------|----|-----------------------|--------------|------|-------|--------------|------|-------|
| | | | 24 HOUR | AM PEAK HOUR | | | PM PEAK HOUR | | |
| | | | | ENTER | EXIT | TOTAL | ENTER | EXIT | TOTAL |
| 220 | Multi-Family Housing (Low-Rise) | DU | 7.32 | 0.11 | 0.35 | 0.46 | 0.35 | 0.21 | 0.56 |

Key: DU = Number of Dwelling Units.

Note: All data and calculations above are subject to being rounded to nearest value.

Table 5 illustrates projected average daily traffic (ADT), AM Peak Hour, and PM Peak Hour traffic volumes likely generated by the proposed development upon build-out.

Table 5 – Trip Generation Summary

| ITE CODELAND USESIZE | | | TOTAL TRIPS GENERATED | | | | | | |
|-------------------------|---------------------------------|-------|-----------------------|--------------|------|-------|--------------|------|-------|
| | | | 24 HOUR | AM PEAK HOUR | | | PM PEAK HOUR | | |
| | | | | ENTER | EXIT | TOTAL | ENTER | EXIT | TOTAL |
| 220 | Multi-Family Housing (Low-Rise) | 95 DU | 695 | 10 | 34 | 44 | 34 | 20 | 53 |
| Total: | | | 695 | 10 | 34 | 44 | 34 | 20 | 53 |

Note: All data and calculations above are subject to being rounded to nearest value.

Upon build-out, Table 5 illustrates that the proposed development has the potential to generate approximately 695 daily trips with 44 of those occurring during the morning peak hour and 53 during the afternoon peak hour.

Adjustments to Trip Generation Rates

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

Trip Distribution

The overall directional distribution of site-generated traffic was determined based on the location of development site within the City, proposed and existing area land uses, allowed turning movements, and available roadway network.

Overall trip distribution patterns for the development are shown on Figure 6.

Trip Assignment

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

Applying trip distribution patterns to site-generated traffic provides the overall site-generated trip assignments shown on Figure 6.

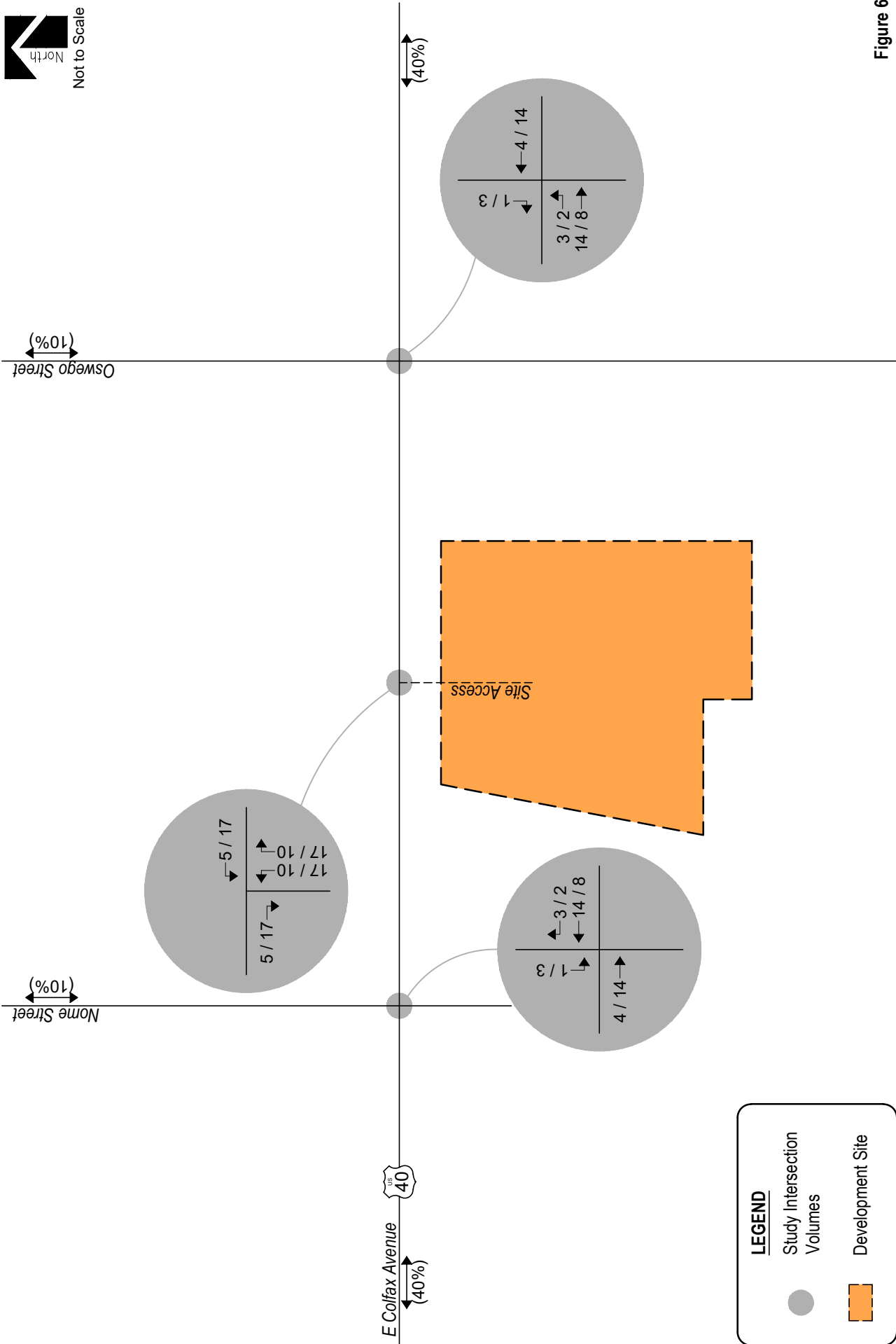


Figure 6
SITE DEVELOPMENT DISTRIBUTION
(%) : Overall
SITE-GENERATED
AM / PM Peak Hour

11800 E COLFAX AVENUE APARTMENTS
Traffic Impact Study

SM ROCHA, LLC
Traffic and Transportation Consultants

V. Future Traffic Conditions With Proposed Developments

Site-generated traffic was added to background traffic projections for Years 2022 and 2040 to develop total traffic projections. For analysis purposes, it was assumed that development construction would be completed by end of Year 2022.

Pursuant to area roadway improvement discussions provided in Section III, Year 2022 and Year 2040 total traffic conditions assume no roadway improvements to accommodate regional transportation demands. Roadway improvements associated with site development are expected to be limited to site access and frontage as required by the governing agency.

Projected Year 2022 total traffic volumes and intersection geometry are shown in Figure 7.

Figure 8 shows projected total traffic volumes and intersection geometry for Year 2040.

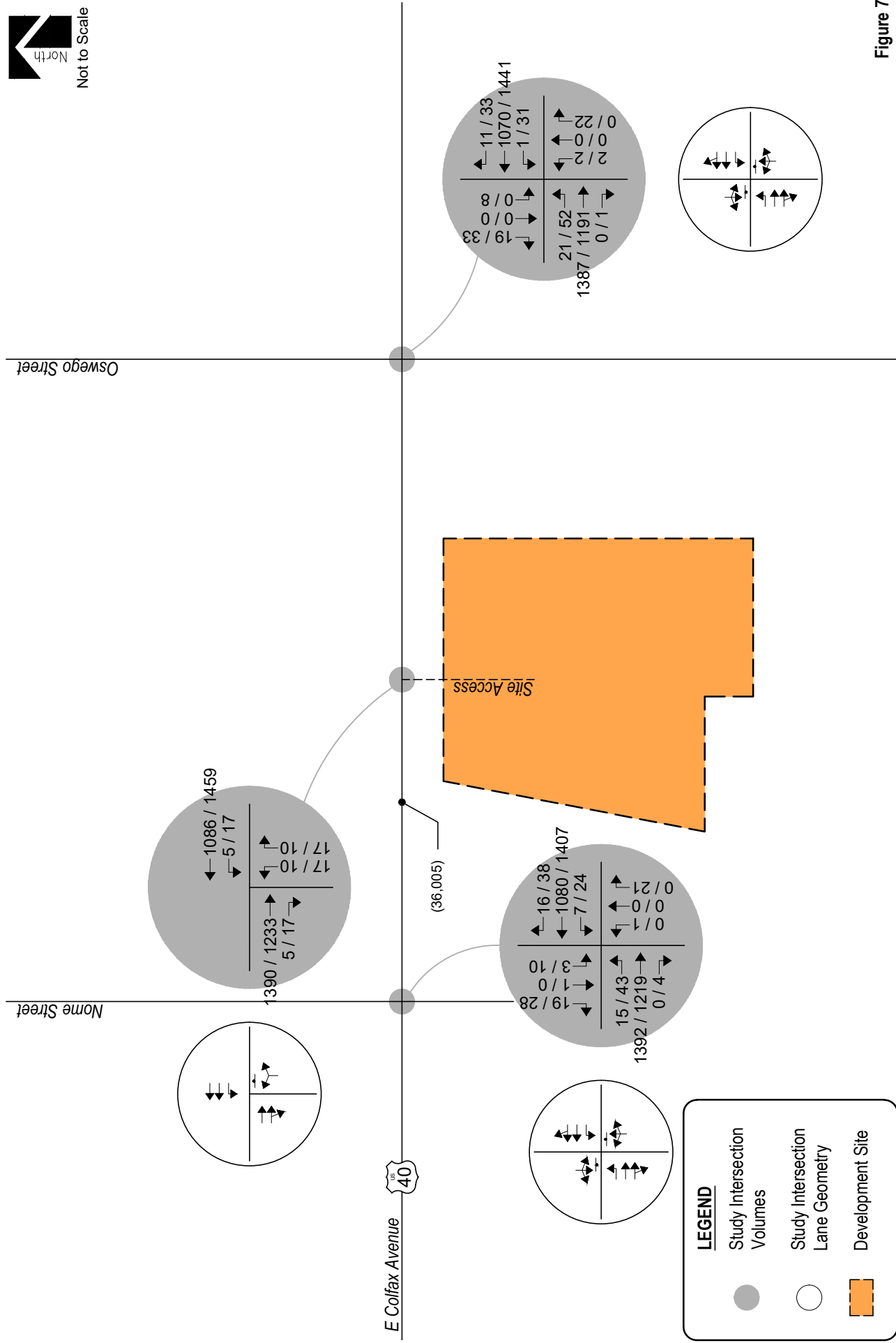


Figure 7
TOTAL TRAFFIC - YEAR 2022
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

11800 E COLFAX AVENUE APARTMENTS
Traffic Impact Study

SM ROCHA, LLC
Traffic and Transportation Consultants

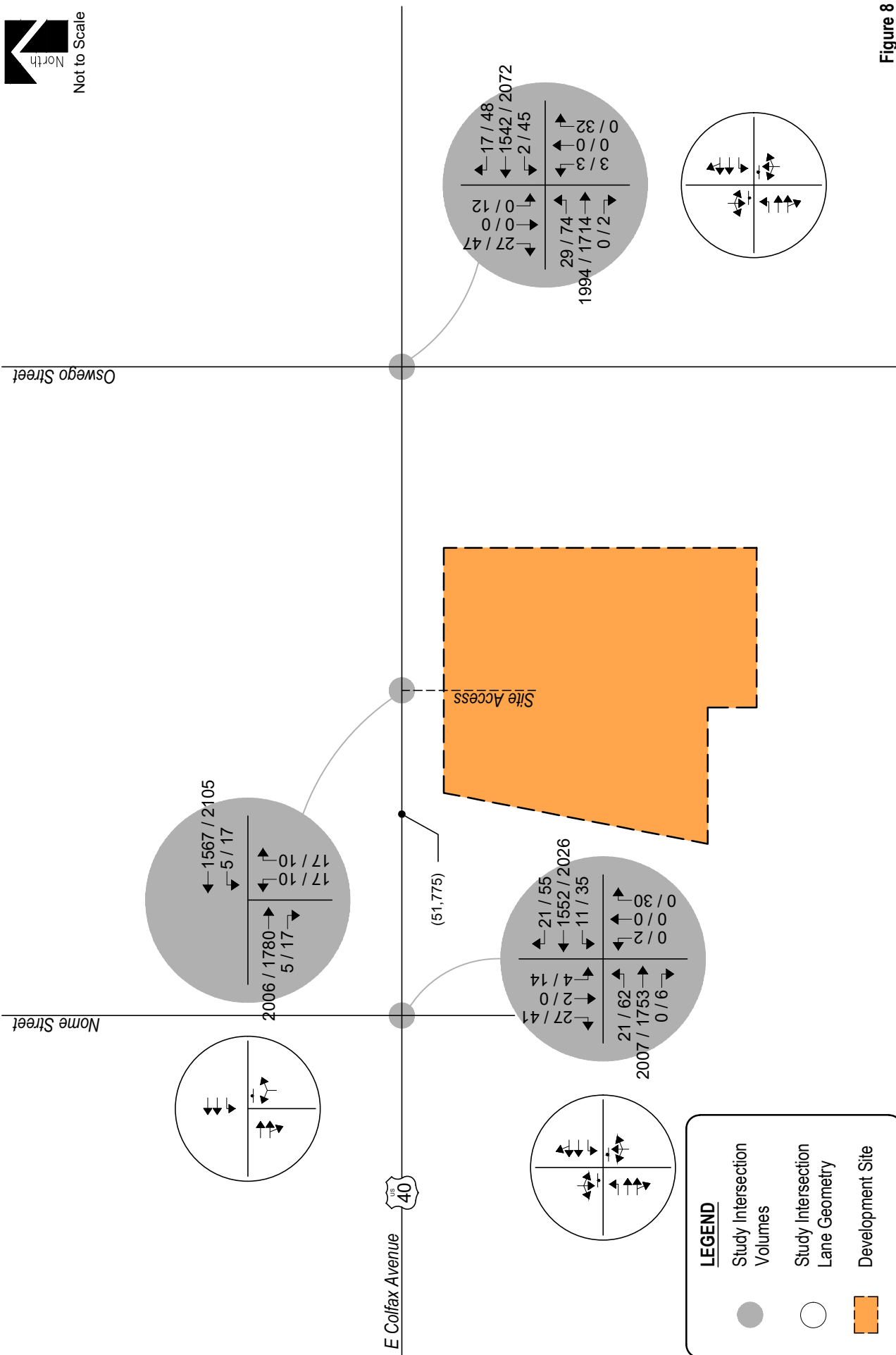


Figure 8
TOTAL TRAFFIC - YEAR 2040
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

11800 E COLFAX AVENUE APARTMENTS
Traffic Impact Study

SM ROCHA, LLC
Traffic and Transportation Consultants

November 2020
Page 19

VI. Project Impacts

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

Peak Hour Intersection Levels of Service

As with background traffic, the operations of the study intersections were analyzed under projected total traffic conditions using the SYNCHRO computer program. Total traffic level of service analysis results for Years 2022 and 2040 are summarized in Table 6 and Table 7, respectively.

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

Table 6 – Intersection Capacity Analysis Summary – Total Traffic – Year 2022

| INTERSECTION LANE GROUPS | LEVEL OF SERVICE | |
|-----------------------------------------------------------|------------------|--------------|
| | AM PEAK HOUR | PM PEAK HOUR |
| E Colfax Avenue (US 40) / Nome Street (Stop-Controlled) | | |
| Eastbound Left | B | B |
| Westbound Left | B | B |
| Northbound Left, Through and Right | A | D |
| Southbound Left, Through and Right | E | F |
| E Colfax Avenue (US 40) / Oswego Street (Stop-Controlled) | | |
| Eastbound Left | B | C |
| Westbound Left | B | B |
| Northbound Left, Through and Right | F | E |
| Southbound Left, Through and Right | B | F |
| E Colfax Avenue (US 40) / Site Access (Stop-Controlled) | | |
| Westbound Left | B | B |
| Northbound Left and Right | F | F |

Key: Stop-Controlled Intersection: Level of Service

Table 7 – Intersection Capacity Analysis Summary – Total Traffic – Year 2040

| INTERSECTION LANE GROUPS | LEVEL OF SERVICE | |
|-----------------------------------------------------------|------------------|--------------|
| | AM PEAK HOUR | PM PEAK HOUR |
| E Colfax Avenue (US 40) / Nome Street (Stop-Controlled) | | |
| Eastbound Left | C | D |
| Westbound Left | C | C |
| Northbound Left, Through and Right | A | F |
| Southbound Left, Through and Right | F | F |
| E Colfax Avenue (US 40) / Oswego Street (Stop-Controlled) | | |
| Eastbound Left | C | D |
| Westbound Left | C | C |
| Northbound Left, Through and Right | F | F |
| Southbound Left, Through and Right | C | F |
| E Colfax Avenue (US 40) / Site Access (Stop-Controlled) | | |
| Westbound Left | C | C |
| Northbound Left and Right | F | F |

Key: Stop-Controlled Intersection: Level of Service

Total Traffic Analysis Results Upon Development Build-Out

Table 7 illustrates how, by Year 2040 and upon development build-out, the stop-controlled intersection of E Colfax Avenue with Nome Street shows turning movement operations of LOS C or better during the morning peak traffic hour and LOS D or better operations during the afternoon peak traffic hour. Exceptions still include the southbound turning movements which operate at LOS F during the AM peak traffic hour, and both the northbound and southbound turning movements which operate at LOS F during the PM peak traffic hour. The LOS F operations are attributed to the through traffic volume along E Colfax Avenue and the stop-controlled nature of the intersection. Compared to the background traffic analysis, the traffic generated by the proposed development is not expected to significantly change the operations of the study intersection.

The stop-controlled intersection of E Colfax Avenue with Oswego Street is projected to have morning peak traffic hour operations at LOS C and LOS D or better during the afternoon peak traffic hour. Exceptions still include the northbound turning movements which operate at LOS F during the AM peak traffic hour, and both the northbound and southbound turning movements which operate at LOS F during the PM peak traffic hour. The LOS F operations are attributed to the through traffic volume along E Colfax Avenue and the stop-controlled nature of the intersection.

The stop-controlled intersection of E Colfax Avenue with Site Access is projected to have turning movement operations at LOS C for both the morning and afternoon peak traffic hours. Exceptions would include the northbound turning movements which operate at LOS F during both the morning and afternoon peak traffic hours. The LOS F operation is attributed to the high through traffic volume along E Colfax Avenue and the stop-controlled nature of the intersection.

It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours.

These intersection operations are similar to background conditions.

Queue Length Analysis

Queue lengths for study area intersections with E Colfax Avenue were analyzed using Year 2040 total traffic conditions. The analysis yields estimate of 95th percentile queue lengths, which have only a five percent probability of being exceeded during the analysis time period. Queue lengths were modeled and are included with the Synchro worksheets in Appendix C.

Tables 8 summarizes the 95th percentile queue results for turn movements within the study area for Year 2040 total traffic conditions.

Table 8 – 95th Percentile Queue Length Summary – Total Traffic – Year 2040

| Intersection | Turn Movement | AM Peak Hour | | PM Peak Hour | | |
|---------------------------------|---------------|-------------------------------------|-------------------------------|-------------------------------------|-------------------------------|----|
| | | 95th Percentile Queue Length (feet) | Vehicle Equivalent (vehicles) | 95th Percentile Queue Length (feet) | Vehicle Equivalent (vehicles) | |
| Stop-Controlled Intersections | | | | | | |
| Nome Street / E Colfax Avenue | EB | L | 5' | 1 | 30' | 2 |
| | | T,R | 0' | 0 | 0' | 0 |
| | WB | L | 5' | 1 | 10' | 1 |
| | | T,R | 0' | 0 | 0' | 0 |
| | NB | L,T,R | 0' | 0 | 100' | 4 |
| | SB | L,T,R | 110' | 5 | 225' | 9 |
| Oswego Street / E Colfax Avenue | EB | L | 8' | 1 | 40' | 2 |
| | | T,R | 0' | 0 | 0' | 0 |
| | WB | L | 0' | 0 | 13' | 1 |
| | | T,R | 0' | 0 | 0' | 0 |
| | NB | L,T,R | 28' | 2 | 123' | 5 |
| | SB | L,T,R | 8' | 1 | 235' | 10 |
| Site Access / E Colfax Avenue | EB | T,R | 0' | 0 | 0' | 0 |
| | WB | L | 3' | 1 | 5' | 1 |
| | | T | 0' | 0 | 0' | 0 |
| | NB | L,R | 125' | 5 | 80' | 4 |

Note: Turn Lane Length does not include taper length.

No significant queues at the proposed site accesses were indicated. The greatest on-site queue length anticipated occurs during the morning peak hour at Site Access. The queue length is approximately five vehicles for the northbound left and right turning movement.

Auxiliary Lane Analysis

Auxiliary lanes for site development accesses are to be based on CDOT's *State Highway Access Code* (SHAC).

Considering development build-out, an evaluation of auxiliary lane requirements, pursuant to Section 3.12(4), of the CDOT SHAC, reveals that a right turn deceleration lane at Site Access along E Colfax Avenue is not required since the development's projected peak hour right turn ingress volume is less than the CDOT threshold of 50 vehicles per hour. Furthermore, it is noted that the existing right-of-way width of the adjacent section of E Colfax Avenue provides for an extra wide right through lane. This additional width may accommodate right-turning vehicles and is utilized along the E Colfax Avenue corridor as a shared through-and-right turn lane.

A left turn deceleration lane at Site Access along E Colfax Avenue is also not required pursuant to the CDOT SHAC which indicates a threshold of 25 left turn ingress vehicles. It is however noted that a left turn deceleration lane is anticipated to be constructed as part of the proposed redevelopment in conjunction with E Colfax Avenue raised median reconstruction and the relocation of existing full-movement access serving the site.

Pedestrian Trips & Bus Routes

Pedestrian trips within the proposed development are to be accommodated by the adjacent sidewalk network along E Colfax Avenue in accordance with jurisdictional standards. Given the residential nature of the proposed redevelopment it is anticipated that a majority of pedestrian trips generated by the development are likely to travel within a limited radius beyond property boundaries to adjacent retail, commercial, and business land uses. Additional destinations outside of the proposed development area may include Paris Elementary School to the northeast and General's Park to the east. Consideration of the existing and proposed pedestrian network indicates that adequate pedestrian facilities are to be provided. Pedestrian route levels of service are not anticipated to be negatively impacted by the proposed redevelopment and are expected to operate acceptably.

It is further noted that an exiting bus route along the E Colfax Avenue corridor with a designated stop within the development boundaries may provide for additional pedestrian traffic through the site. Impacts to the existing bus stop location associated with site redevelopment are anticipated to be coordinated with the Regional Transportation District (RTD) as well as CDOT and City Staff as needed. As noted previously, additional available lane width exists for the right-most through lane along E Colfax Avenue which can accommodate buses temporarily stopping at a designated bus stop without causing any significant impacts to through traffic. However, bus stop positioning is recommended to be placed in accordance with jurisdictional standards ensuring sufficient spacing from site access points to prevent possible safety concerns.

VII. Conclusion

This traffic impact study addressed the capacity, geometric, and control requirements associated with the development entitled 11800 E Colfax Avenue Apartments. This proposed residential development consists of an apartment complex. The development is located at 11800 E Colfax Avenue between the intersections of E Colfax Avenue (US 40) with Nome Street and Oswego Street in Aurora, Colorado.

The study area examined in this analysis encompassed the intersections of E Colfax Avenue with Nome Street, Oswego Street, and proposed site accesses.

Analysis was conducted for critical AM Peak Hour and PM Peak Hour traffic operations for existing traffic conditions, Year 2022 and Year 2040 background traffic conditions, and Year 2022 and Year 2040 total traffic conditions.

Under existing conditions, operational analysis shows that the unsignalized intersection of E Colfax Avenue (US 40) with Nome Street has turning movement operations at LOS D or better during the morning peak traffic hour and LOS C or better during the afternoon peak traffic hour. Exceptions would include the southbound turning movements which operate at LOS F during the PM peak traffic hour. The LOS F operation is attributed to the through traffic volume along E Colfax Avenue and the stop-controlled nature of the intersection. The unsignalized intersection of E Colfax Avenue with Oswego Street has turning movement operations at LOS B during the morning peak traffic hour and LOS D or better during the afternoon peak traffic hour. Exceptions would include the northbound and southbound turning movements which operate at LOS F during the AM and PM peak traffic hours, respectively. The LOS F operations are attributed to the through traffic volume along E Colfax Avenue and the stop-controlled nature of the intersection. It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours.

Year 2022 background traffic analysis indicates that the unsignalized intersection of E Colfax Avenue with Nome Street has turning movement operations at LOS D or better during the AM peak traffic hour and LOS C or better during the PM peak traffic hour. Exceptions still include the southbound turning movements which operate at LOS F during the PM peak traffic hour. The LOS F operation is attributed to the through traffic volume along E Colfax Avenue and the stop-controlled nature of the intersection. The unsignalized intersection of E Colfax Avenue with Oswego Street has turning movement operations at LOS B during the morning peak traffic hour and LOS D or better during the afternoon peak traffic hour. Exceptions still include the northbound and southbound turning movements which operate at LOS F during the AM and PM peak traffic hours, respectively. The LOS F operations are attributed to the through traffic volume along E Colfax Avenue and the stop-controlled nature of the intersection.

By Year 2040 and without the proposed development, the study intersection of E Colfax Avenue with Nome Street experiences LOS C or better operations during the AM peak traffic hour and LOS D or better operations during the PM peak traffic hour. Exceptions would include the southbound turning movements which operate at LOS F during the AM peak traffic hour, and both the northbound and southbound turning movements which operate at LOS F during the PM peak traffic hour. The LOS F operations are attributed to the through traffic volume along E Colfax Avenue and the stop-controlled nature of the intersection. The study intersection of E Colfax Avenue with Oswego Street experiences LOS C operations during the AM peak traffic hour and LOS D or better operations during the PM peak traffic hour. Exceptions would include the northbound turning movements which operate at LOS F during the AM peak traffic hour, and both the northbound and southbound turning movements which operate at LOS F during the PM peak traffic hour. The LOS F operations are attributed to the through traffic volume along E Colfax Avenue and the stop-controlled nature of the intersection. It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours.

Analysis of future traffic conditions indicates that the addition of site-generated traffic is expected to create no negative impact to traffic operations for the existing and surrounding roadway system. With all conservative assumptions defined in this analysis, the study intersections are projected to operate at future levels of service comparable to Year 2040 background traffic conditions. Proposed site accesses have long-term operations at LOS C or better during peak traffic periods and upon build-out. Exceptions would include the northbound turning movements at Site Access which operate at LOS F during both peak traffic hours. However, it is noted that queue lengths for the northbound turning movement are considered minor and may be accommodated on site.

The submittal of new CDOT access permits are anticipated with the development of this site and will be coordinated through CDOT staff.

APPENDIX A

Traffic Count Data



(303) 216-2439
www.alltrafficdata.net

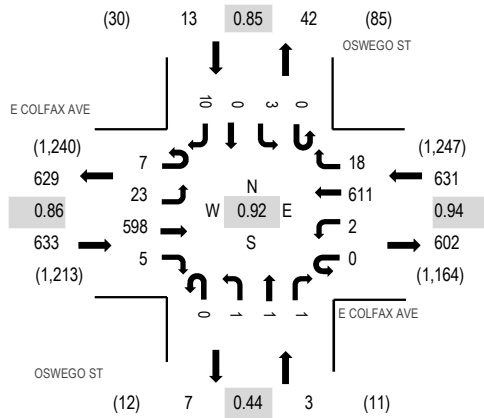
Location: 1 OSWEGO ST & E COLFAX AVE AM

Date: Thursday, July 9, 2020

Peak Hour: 07:15 AM - 08:15 AM

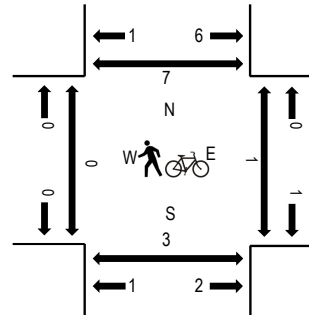
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

| Interval Start Time | E COLFAX AVE | | | | E COLFAX AVE | | | | OSWEGO ST | | | | OSWEGO ST | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|------------------------|--------------|------|-------|-------|--------------|------|-------|-------|------------|------|------|-------|------------|------|------|-------|-------|-----------------|----------------------|------|-------|-------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | | West | East | South | North |
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | | | | |
| 7:00 AM | 0 | 6 | 132 | 0 | 0 | 0 | 115 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 3 | 258 | 1,252 | 0 | 3 | 9 | 2 |
| 7:15 AM | 1 | 5 | 144 | 0 | 0 | 0 | 166 | 7 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 3 | 329 | 1,280 | 0 | 0 | 0 | 2 |
| 7:30 AM | 1 | 5 | 158 | 1 | 0 | 0 | 152 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 318 | 1,268 | 0 | 0 | 0 | 3 |
| 7:45 AM | 3 | 7 | 172 | 3 | 0 | 1 | 145 | 10 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 3 | 347 | 1,252 | 0 | 0 | 1 | 0 |
| 8:00 AM | 2 | 6 | 124 | 1 | 0 | 1 | 148 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 286 | 1,249 | 0 | 1 | 2 | 2 |
| 8:15 AM | 4 | 5 | 144 | 0 | 1 | 0 | 153 | 5 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 2 | 317 | | 0 | 0 | 0 | 1 |
| 8:30 AM | 1 | 4 | 119 | 1 | 0 | 2 | 161 | 5 | 0 | 0 | 0 | 4 | 0 | 2 | 0 | 3 | 302 | | 0 | 0 | 1 | 1 |
| 8:45 AM | 1 | 8 | 154 | 1 | 0 | 1 | 164 | 9 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 344 | | 0 | 0 | 3 | 1 |
| Count Total | 13 | 46 | 1,147 | 7 | 1 | 5 | 1,204 | 37 | 0 | 3 | 2 | 6 | 0 | 10 | 0 | 20 | 2,501 | | 0 | 4 | 16 | 12 |
| Peak Hour | 7 | 23 | 598 | 5 | 0 | 2 | 611 | 18 | 0 | 1 | 1 | 1 | 0 | 3 | 0 | 10 | 1,280 | | 0 | 1 | 3 | 7 |



(303) 216-2439
www.alltrafficdata.net

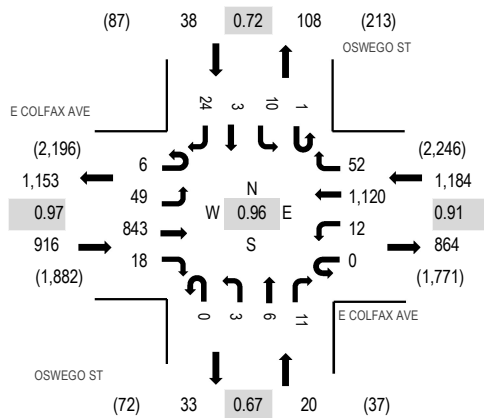
Location: 1 OSWEGO ST & E COLFAX AVE PM

Date: Thursday, July 9, 2020

Peak Hour: 04:30 PM - 05:30 PM

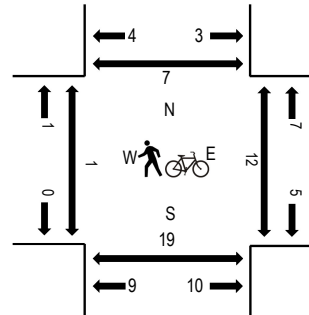
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

| Interval Start Time | E COLFAX AVE Eastbound | | | | E COLFAX AVE Westbound | | | | OSWEGO ST Northbound | | | | OSWEGO ST Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|------------------------|---------------------------|------|-------|-------|---------------------------|------|-------|-------|-------------------------|------|------|-------|-------------------------|------|------|-------|-------|-----------------|----------------------|------|-------|-------|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 4:00 PM | 0 | 14 | 223 | 3 | 1 | 3 | 267 | 7 | 0 | 0 | 2 | 2 | 0 | 2 | 3 | 11 | 538 | 2,122 | 0 | 2 | 3 | 3 |
| 4:15 PM | 2 | 17 | 217 | 7 | 0 | 6 | 252 | 13 | 0 | 2 | 0 | 4 | 0 | 0 | 1 | 10 | 531 | 2,125 | 1 | 2 | 8 | 2 |
| 4:30 PM | 3 | 10 | 213 | 6 | 0 | 2 | 275 | 11 | 0 | 0 | 1 | 0 | 1 | 4 | 1 | 3 | 530 | 2,158 | 0 | 4 | 3 | 0 |
| 4:45 PM | 1 | 18 | 195 | 5 | 0 | 4 | 264 | 18 | 0 | 1 | 2 | 5 | 0 | 2 | 1 | 7 | 523 | 2,143 | 1 | 3 | 4 | 3 |
| 5:00 PM | 1 | 8 | 223 | 3 | 0 | 4 | 271 | 10 | 0 | 1 | 2 | 6 | 0 | 3 | 1 | 8 | 541 | 2,130 | 0 | 3 | 3 | 2 |
| 5:15 PM | 1 | 13 | 212 | 4 | 0 | 2 | 310 | 13 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 6 | 564 | | 0 | 2 | 8 | 1 |
| 5:30 PM | 1 | 13 | 223 | 7 | 0 | 5 | 235 | 19 | 0 | 1 | 1 | 0 | 0 | 2 | 1 | 7 | 515 | | 1 | 0 | 3 | 3 |
| 5:45 PM | 0 | 12 | 227 | 0 | 0 | 2 | 246 | 6 | 0 | 1 | 1 | 3 | 0 | 3 | 1 | 8 | 510 | | 1 | 1 | 5 | 4 |
| Count Total | 9 | 105 | 1,733 | 35 | 1 | 28 | 2,120 | 97 | 0 | 7 | 10 | 20 | 1 | 17 | 9 | 60 | 4,252 | | 4 | 17 | 37 | 18 |
| Peak Hour | 6 | 49 | 843 | 18 | 0 | 12 | 1,120 | 52 | 0 | 3 | 6 | 11 | 1 | 10 | 3 | 24 | 2,158 | | 1 | 12 | 18 | 6 |



(303) 216-2439
www.alltrafficdata.net

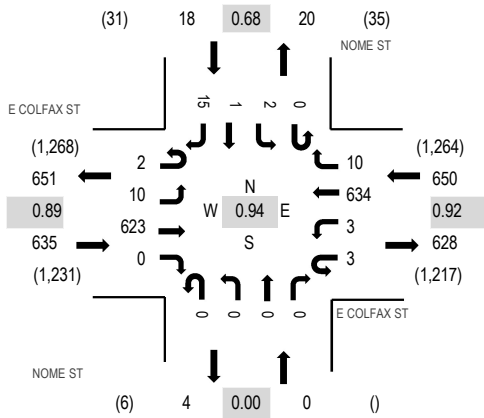
Location: 2 NOME ST & E COLFAX ST AM

Date: Thursday, July 9, 2020

Peak Hour: 07:15 AM - 08:15 AM

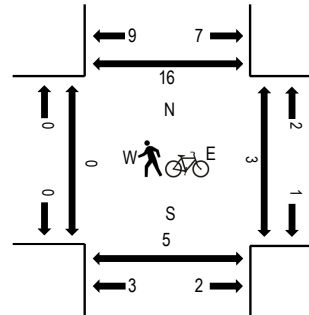
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

| Interval Start Time | E COLFAX ST | | | | E COLFAX ST | | | | NOME ST | | | | NOME ST | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|------------------------|-------------|------|-------|-------|-------------|------|-------|-------|------------|------|------|-------|------------|------|------|-------|-------|-----------------|----------------------|------|-------|-------|
| | Eastbound | | | | Westbound | | | | Northbound | | | | Southbound | | | | | | Pedestrian Crossings | | | |
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 7:00 AM | 0 | 2 | 139 | 0 | 0 | 0 | 122 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 268 | 1,280 | 0 | 0 | 2 | 2 |
| 7:15 AM | 0 | 2 | 142 | 0 | 2 | 1 | 172 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 4 | 327 | 1,303 | 0 | 0 | 0 | 8 |
| 7:30 AM | 0 | 3 | 178 | 0 | 1 | 1 | 153 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 345 | 1,286 | 0 | 2 | 3 | 3 |
| 7:45 AM | 0 | 3 | 176 | 0 | 0 | 0 | 153 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 340 | 1,229 | 0 | 0 | 0 | 1 |
| 8:00 AM | 2 | 2 | 127 | 0 | 0 | 1 | 156 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 291 | 1,246 | 0 | 1 | 2 | 3 |
| 8:15 AM | 1 | 0 | 147 | 0 | 1 | 0 | 155 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 310 | | 0 | 0 | 1 | 3 |
| 8:30 AM | 0 | 1 | 123 | 0 | 0 | 2 | 158 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 288 | | 0 | 0 | 3 | 2 |
| 8:45 AM | 0 | 5 | 178 | 0 | 0 | 0 | 169 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 357 | | 0 | 0 | 2 | 4 |
| Count Total | 3 | 18 | 1,210 | 0 | 4 | 5 | 1,238 | 17 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 27 | 2,526 | | 0 | 3 | 13 | 26 |
| Peak Hour | 2 | 10 | 623 | 0 | 3 | 3 | 634 | 10 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 15 | 1,303 | | 0 | 3 | 5 | 15 |



(303) 216-2439
www.alltrafficdata.net

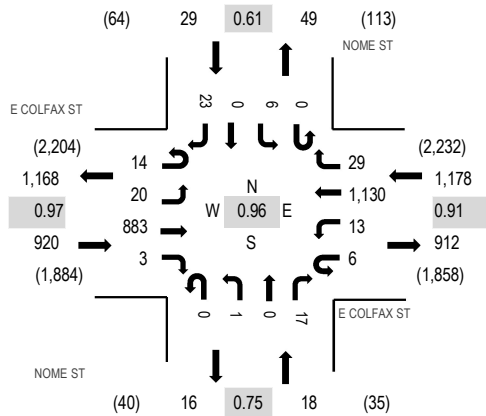
Location: 2 NOME ST & E COLFAX ST PM

Date: Thursday, July 9, 2020

Peak Hour: 04:30 PM - 05:30 PM

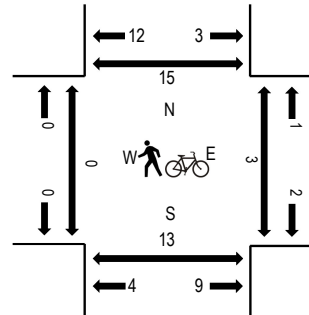
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

| Interval Start Time | E COLFAX ST Eastbound | | | | E COLFAX ST Westbound | | | | NOME ST Northbound | | | | NOME ST Southbound | | | | Total | Rolling Hour | Pedestrian Crossings | | | |
|------------------------|--------------------------|------|-------|-------|--------------------------|------|-------|-------|-----------------------|------|------|-------|-----------------------|------|------|-------|-------|-----------------|----------------------|------|-------|-------|
| | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | U-Turn | Left | Thru | Right | | | West | East | South | North |
| 4:00 PM | 1 | 7 | 223 | 0 | 1 | 5 | 268 | 12 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 522 | 2,084 | 0 | 1 | 7 | 6 |
| 4:15 PM | 2 | 8 | 240 | 1 | 0 | 3 | 247 | 9 | 0 | 2 | 0 | 2 | 0 | 0 | 1 | 5 | 520 | 2,104 | 0 | 1 | 6 | 3 |
| 4:30 PM | 2 | 4 | 220 | 0 | 1 | 5 | 275 | 3 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 5 | 522 | 2,145 | 0 | 3 | 4 | 1 |
| 4:45 PM | 2 | 4 | 204 | 3 | 1 | 2 | 276 | 8 | 0 | 0 | 0 | 7 | 0 | 3 | 0 | 10 | 520 | 2,136 | 0 | 0 | 3 | 2 |
| 5:00 PM | 6 | 6 | 235 | 0 | 1 | 2 | 272 | 8 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 7 | 542 | 2,131 | 0 | 0 | 3 | 7 |
| 5:15 PM | 4 | 6 | 224 | 0 | 3 | 4 | 307 | 10 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 561 | | 0 | 0 | 2 | 4 |
| 5:30 PM | 2 | 8 | 227 | 3 | 1 | 2 | 246 | 6 | 0 | 1 | 0 | 6 | 0 | 4 | 0 | 7 | 513 | | 1 | 0 | 6 | 3 |
| 5:45 PM | 2 | 5 | 235 | 0 | 0 | 8 | 237 | 9 | 0 | 1 | 0 | 4 | 0 | 2 | 1 | 11 | 515 | | 1 | 0 | 7 | 3 |
| Count Total | 21 | 48 | 1,808 | 7 | 8 | 31 | 2,128 | 65 | 0 | 6 | 0 | 29 | 0 | 13 | 2 | 49 | 4,215 | | 2 | 5 | 38 | 29 |
| Peak Hour | 14 | 20 | 883 | 3 | 6 | 13 | 1,130 | 29 | 0 | 1 | 0 | 17 | 0 | 6 | 0 | 23 | 2,145 | | 0 | 3 | 12 | 14 |

All Traffic Data Services
www.alltrafficdata.net

Date Start: 09-Jul-20
Site Code: 3
Station ID:
E COLFAX AVE W.O. OSWEGO ST

| Start Time | 09-Jul-20 Thu | EB | WB | Total |
|-------------|---------------|------------|------------|-------|
| 12:00 AM | | 194 | 200 | 394 |
| 01:00 | | 149 | 141 | 290 |
| 02:00 | | 100 | 98 | 198 |
| 03:00 | | 90 | 88 | 178 |
| 04:00 | | 148 | 115 | 263 |
| 05:00 | | 348 | 252 | 600 |
| 06:00 | | 662 | 499 | 1161 |
| 07:00 | | 636 | 631 | 1267 |
| 08:00 | | 578 | 642 | 1220 |
| 09:00 | | 601 | 779 | 1380 |
| 10:00 | | 644 | 827 | 1471 |
| 11:00 | | 722 | 890 | 1612 |
| 12:00 PM | | 828 | 993 | 1821 |
| 01:00 | | 858 | 903 | 1761 |
| 02:00 | | 863 | 965 | 1828 |
| 03:00 | | 856 | 1159 | 2015 |
| 04:00 | | 909 | 1109 | 2018 |
| 05:00 | | 943 | 1097 | 2040 |
| 06:00 | | 916 | 950 | 1866 |
| 07:00 | | 752 | 814 | 1566 |
| 08:00 | | 660 | 718 | 1378 |
| 09:00 | | 552 | 584 | 1136 |
| 10:00 | | 405 | 412 | 817 |
| 11:00 | | 261 | 268 | 529 |
| Total | | 13675 | 15134 | 28809 |
| Percent | | 47.5% | 52.5% | |
| AM Peak | - | 11:00 | 11:00 | - |
| Vol. | - | 722 | 890 | - |
| PM Peak | - | 17:00 | 15:00 | - |
| Vol. | - | 943 | 1159 | - |
| Grand Total | | 13675 | 15134 | 28809 |
| Percent | | 47.5% | 52.5% | |
| ADT | | ADT 28,809 | ADT 28,809 | |

APPENDIX B

Level of Service Definitions

The following information can be found in the Highway Capacity Manual, Transportation Research Board, 2010: Chapter 18 – Signalized Intersections and Chapter 19 – Two-Way Stop Controlled Intersections.

Automobile Level of Service (LOS) for Signalized Intersections

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

LOS A

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

LOS B

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

LOS C

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

LOS D

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

LOS E

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

LOS F

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

Level of Service (LOS) for Unsignalized TWSC Intersections







| Level of Service | Average Control Delay (s/veh) |
|------------------|-------------------------------|
| A | 0 - 10 |
| B | > 10 - 15 |
| C | > 15 - 25 |
| D | > 25 - 35 |
| E | > 35 - 50 |
| F | > 50 |

APPENDIX C

Capacity Worksheets

HCM 6th TWSC
1: E Colfax Avenue (US 40) & Nome Street

Existing Traffic Volumes
AM Peak Hour

| Intersection | | | | | | | | | | | | |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh | 0.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | | |  | | |  | |
| Traffic Vol, veh/h | 14 | 1335 | 0 | 7 | 1025 | 12 | 0 | 0 | 0 | 2 | 1 | 18 |
| Future Vol, veh/h | 14 | 1335 | 0 | 7 | 1025 | 12 | 0 | 0 | 0 | 2 | 1 | 18 |
| 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 | 55 | - | - | 70 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 15 | 1451 | 0 | 8 | 1114 | 13 | 0 | 0 | 0 | 2 | 1 | 20 |







| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 1127 | 0 | 0 | 1451 | 0 | 0 | 2055 | 2624 | 726 | 1893 | 2618 | 564 |
| Stage 1 | - | - | - | - | - | - | 1481 | 1481 | - | 1137 | 1137 | - |
| Stage 2 | - | - | - | - | - | - | 574 | 1143 | - | 756 | 1481 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 616 | - | - | 463 | - | - | 32 | 24 | 367 | 43 | 24 | 469 |
| Stage 1 | - | - | - | - | - | - | 131 | 187 | - | 215 | 275 | - |
| Stage 2 | - | - | - | - | - | - | 471 | 273 | - | 366 | 187 | - |
| Platoon blocked, % | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | 616 | - | - | 463 | - | - | 29 | 23 | 367 | 42 | 23 | 469 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 29 | 23 | - | 42 | 23 | - |
| Stage 1 | - | - | - | - | - | - | 128 | 183 | - | 210 | 270 | - |
| Stage 2 | - | - | - | - | - | - | 442 | 268 | - | 357 | 183 | - |

| Approach | EB | WB | NB | SB |
|----------------------|-----|-----|----|------|
| HCM Control Delay, s | 0.1 | 0.1 | 0 | 30.8 |
| HCM LOS | | | A | D |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h) | - | 616 | - | - | 463 | - | - | 162 |
| HCM Lane V/C Ratio | - | 0.025 | - | - | 0.016 | - | - | 0.141 |
| HCM Control Delay (s) | 0 | 11 | - | - | 12.9 | - | - | 30.8 |
| HCM Lane LOS | A | B | - | - | B | - | - | D |
| HCM 95th %tile Q(veh) | - | 0.1 | - | - | 0.1 | - | - | 0.5 |

HCM 6th TWSC
2: Oswego Street & E Colfax Avenue (US 40)

Existing Traffic Volumes
AM Peak Hour

| Intersection | | | | | | | | | | | | |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh | 0.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | | |  | | |  | |
| Traffic Vol, veh/h | 17 | 1320 | 0 | 1 | 1025 | 11 | 2 | 0 | 0 | 0 | 0 | 17 |
| Future Vol, veh/h | 17 | 1320 | 0 | 1 | 1025 | 11 | 2 | 0 | 0 | 0 | 0 | 17 |
| 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 | 45 | - | - | 85 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 18 | 1435 | 0 | 1 | 1114 | 12 | 2 | 0 | 0 | 0 | 0 | 18 |







| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 1126 | 0 | 0 | 1435 | 0 | 0 | 2030 | 2599 | 718 | 1876 | 2593 | 563 |
| Stage 1 | - | - | - | - | - | - | 1471 | 1471 | - | 1122 | 1122 | - |
| Stage 2 | - | - | - | - | - | - | 559 | 1128 | - | 754 | 1471 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 616 | - | - | 469 | - | - | 34 | 24 | 371 | 44 | 25 | 470 |
| Stage 1 | - | - | - | - | - | - | 133 | 190 | - | 219 | 279 | - |
| Stage 2 | - | - | - | - | - | - | 481 | 278 | - | 367 | 190 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 616 | - | - | 469 | - | - | 32 | 23 | 371 | 43 | 24 | 470 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 32 | 23 | - | 43 | 24 | - |
| Stage 1 | - | - | - | - | - | - | 129 | 184 | - | 213 | 278 | - |
| Stage 2 | - | - | - | - | - | - | 461 | 277 | - | 356 | 184 | - |

| Approach | EB | WB | NB | SB |
|----------------------|-----|----|-------|----|
| HCM Control Delay, s | 0.1 | 0 | 125.5 | 13 |
| HCM LOS | | | F | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h) | 32 | 616 | - | - | 469 | - | - | 470 |
| HCM Lane V/C Ratio | 0.068 | 0.03 | - | - | 0.002 | - | - | 0.039 |
| HCM Control Delay (s) | 125.5 | 11 | - | - | 12.7 | - | - | 13 |
| HCM Lane LOS | F | B | - | - | B | - | - | B |
| HCM 95th %tile Q(veh) | 0.2 | 0.1 | - | - | 0 | - | - | 0.1 |

HCM 6th TWSC
1: E Colfax Avenue (US 40) & Nome Street

Existing Traffic Volumes
PM Peak Hour

| Intersection | | | | | | | | | | | | |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh | 1.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | | |  | | |  | |
| Traffic Vol, veh/h | 41 | 1159 | 4 | 23 | 1345 | 35 | 1 | 0 | 20 | 7 | 0 | 27 |
| Future Vol, veh/h | 41 | 1159 | 4 | 23 | 1345 | 35 | 1 | 0 | 20 | 7 | 0 | 27 |
| 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 | 55 | - | - | 70 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 45 | 1260 | 4 | 25 | 1462 | 38 | 1 | 0 | 22 | 8 | 0 | 29 |







| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 1500 | 0 | 0 | 1264 | 0 | 0 | 2133 | 2902 | 632 | 2251 | 2885 | 750 |
| Stage 1 | - | - | - | - | - | - | 1352 | 1352 | - | 1531 | 1531 | - |
| Stage 2 | - | - | - | - | - | - | 781 | 1550 | - | 720 | 1354 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 443 | - | - | 546 | - | - | 28 | 16 | 423 | 23 | 16 | 354 |
| Stage 1 | - | - | - | - | - | - | 158 | 217 | - | 122 | 177 | - |
| Stage 2 | - | - | - | - | - | - | 354 | 173 | - | 385 | 216 | - |
| Platoon blocked, % | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | 443 | - | - | 546 | - | - | 23 | 14 | 423 | 19 | 14 | 354 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 23 | 14 | - | 19 | 14 | - |
| Stage 1 | - | - | - | - | - | - | 142 | 195 | - | 110 | 169 | - |
| Stage 2 | - | - | - | - | - | - | 310 | 165 | - | 328 | 194 | - |

| Approach | EB | WB | NB | SB |
|----------------------|-----|-----|------|------|
| HCM Control Delay, s | 0.5 | 0.2 | 22.3 | 90.8 |
| HCM LOS | | | C | F |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h) | 231 | 443 | - | - | 546 | - | - | 76 |
| HCM Lane V/C Ratio | 0.099 | 0.101 | - | - | 0.046 | - | - | 0.486 |
| HCM Control Delay (s) | 22.3 | 14 | - | - | 11.9 | - | - | 90.8 |
| HCM Lane LOS | C | B | - | - | B | - | - | F |
| HCM 95th %tile Q(veh) | 0.3 | 0.3 | - | - | 0.1 | - | - | 2 |

HCM 6th TWSC
2: Oswego Street & E Colfax Avenue (US 40)

Existing Traffic Volumes
PM Peak Hour

| Intersection | | | | | | | | | | | | |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh | 2.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | | |  | | |  | |
| Traffic Vol, veh/h | 48 | 1137 | 1 | 30 | 1372 | 32 | 2 | 0 | 21 | 8 | 0 | 29 |
| Future Vol, veh/h | 48 | 1137 | 1 | 30 | 1372 | 32 | 2 | 0 | 21 | 8 | 0 | 29 |
| 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 | 45 | - | - | 85 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 52 | 1236 | 1 | 33 | 1491 | 35 | 2 | 0 | 23 | 9 | 0 | 32 |







| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 1526 | 0 | 0 | 1237 | 0 | 0 | 2153 | 2933 | 619 | 2297 | 2916 | 763 |
| Stage 1 | - | - | - | - | - | - | 1341 | 1341 | - | 1575 | 1575 | - |
| Stage 2 | - | - | - | - | - | - | 812 | 1592 | - | 722 | 1341 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 433 | - | - | 559 | - | - | 27 | 15 | 432 | 21 | 15 | 347 |
| Stage 1 | - | - | - | - | - | - | 161 | 219 | - | 115 | 169 | - |
| Stage 2 | - | - | - | - | - | - | 339 | 165 | - | 384 | 219 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 433 | - | - | 559 | - | - | 21 | 12 | 432 | 17 | 12 | 347 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 21 | 12 | - | 17 | 12 | - |
| Stage 1 | - | - | - | - | - | - | 142 | 193 | - | 101 | 159 | - |
| Stage 2 | - | - | - | - | - | - | 290 | 155 | - | 320 | 193 | - |

| Approach | EB | WB | NB | SB |
|----------------------|-----|-----|------|-------|
| HCM Control Delay, s | 0.6 | 0.2 | 31.6 | 119.1 |
| HCM LOS | | | D | F |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h) | 160 | 433 | - | - | 559 | - | - | 67 |
| HCM Lane V/C Ratio | 0.156 | 0.12 | - | - | 0.058 | - | - | 0.6 |
| HCM Control Delay (s) | 31.6 | 14.4 | - | - | 11.8 | - | - | 119.1 |
| HCM Lane LOS | D | B | - | - | B | - | - | F |
| HCM 95th %tile Q(veh) | 0.5 | 0.4 | - | - | 0.2 | - | - | 2.6 |

HCM 6th TWSC
1: E Colfax Avenue (US 40) & Nome Street

Background Traffic Volumes
AM Peak Hour - Year 2022

| Intersection | | | | | | | | | | | | |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh | 0.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | | |  | | |  | |
| Traffic Vol, veh/h | 15 | 1388 | 0 | 7 | 1066 | 13 | 0 | 0 | 0 | 2 | 1 | 19 |
| Future Vol, veh/h | 15 | 1388 | 0 | 7 | 1066 | 13 | 0 | 0 | 0 | 2 | 1 | 19 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 55 | - | - | 70 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 1509 | 0 | 8 | 1159 | 14 | 0 | 0 | 0 | 2 | 1 | 21 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 1173 | 0 | 0 | 1509 | 0 | 0 | 2137 | 2730 | 755 | 1969 | 2723 | 587 |
| Stage 1 | - | - | - | - | - | - | 1541 | 1541 | - | 1182 | 1182 | - |
| Stage 2 | - | - | - | - | - | - | 596 | 1189 | - | 787 | 1541 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 591 | - | - | 439 | - | - | 28 | 20 | 351 | 37 | 20 | 453 |
| Stage 1 | - | - | - | - | - | - | 120 | 175 | - | 201 | 262 | - |
| Stage 2 | - | - | - | - | - | - | 457 | 260 | - | 351 | 175 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 591 | - | - | 439 | - | - | 25 | 19 | 351 | 36 | 19 | 453 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 25 | 19 | - | 36 | 19 | - |
| Stage 1 | - | - | - | - | - | - | 117 | 170 | - | 196 | 257 | - |
| Stage 2 | - | - | - | - | - | - | 426 | 255 | - | 341 | 170 | - |







| Approach | EB | | | WB | | | NB | | | SB | | |
|----------------------|-----|--|--|-----|--|--|----|--|--|------|--|--|
| HCM Control Delay, s | 0.1 | | | 0.1 | | | 0 | | | 34.2 | | |
| HCM LOS | | | | | | | A | | | D | | |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h) | - | 591 | - | - | 439 | - | - | 147 |
| HCM Lane V/C Ratio | - | 0.028 | - | - | 0.017 | - | - | 0.163 |
| HCM Control Delay (s) | 0 | 11.3 | - | - | 13.3 | - | - | 34.2 |
| HCM Lane LOS | A | B | - | - | B | - | - | D |
| HCM 95th %tile Q(veh) | - | 0.1 | - | - | 0.1 | - | - | 0.6 |

HCM 6th TWSC
2: Oswego Street & E Colfax Avenue (US 40)

Background Traffic Volumes

AM Peak Hour - Year 2022

| Intersection | | | | | | | | | | | | |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh | 0.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | | |  | | |  | |
| Traffic Vol, veh/h | 18 | 1373 | 0 | 1 | 1066 | 11 | 2 | 0 | 0 | 0 | 0 | 18 |
| Future Vol, veh/h | 18 | 1373 | 0 | 1 | 1066 | 11 | 2 | 0 | 0 | 0 | 0 | 18 |
| 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 | 45 | - | - | 85 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 20 | 1492 | 0 | 1 | 1159 | 12 | 2 | 0 | 0 | 0 | 0 | 20 |







| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 1171 | 0 | 0 | 1492 | 0 | 0 | 2114 | 2705 | 746 | 1953 | 2699 | 586 |
| Stage 1 | - | - | - | - | - | - | 1532 | 1532 | - | 1167 | 1167 | - |
| Stage 2 | - | - | - | - | - | - | 582 | 1173 | - | 786 | 1532 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 592 | - | - | 446 | - | - | 29 | 21 | 356 | 38 | 21 | 454 |
| Stage 1 | - | - | - | - | - | - | 122 | 177 | - | 206 | 266 | - |
| Stage 2 | - | - | - | - | - | - | 466 | 264 | - | 351 | 177 | - |
| Platoon blocked, % | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | 592 | - | - | 446 | - | - | 27 | 20 | 356 | 37 | 20 | 454 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 27 | 20 | - | 37 | 20 | - |
| Stage 1 | - | - | - | - | - | - | 118 | 171 | - | 199 | 265 | - |
| Stage 2 | - | - | - | - | - | - | 445 | 263 | - | 339 | 171 | - |

| Approach | EB | WB | NB | SB |
|----------------------|-----|----|-------|------|
| HCM Control Delay, s | 0.1 | 0 | 149.7 | 13.3 |
| HCM LOS | | | F | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h) | 27 | 592 | - | - | 446 | - | - | 454 |
| HCM Lane V/C Ratio | 0.081 | 0.033 | - | - | 0.002 | - | - | 0.043 |
| HCM Control Delay (s) | 149.7 | 11.3 | - | - | 13.1 | - | - | 13.3 |
| HCM Lane LOS | F | B | - | - | B | - | - | B |
| HCM 95th %tile Q(veh) | 0.2 | 0.1 | - | - | 0 | - | - | 0.1 |

HCM 6th TWSC
1: E Colfax Avenue (US 40) & Nome Street

Background Traffic Volumes
PM Peak Hour - Year 2022

| Intersection | | | | | | | | | | | | |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh | 2 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | | |  | | |  | |
| Traffic Vol, veh/h | 43 | 1205 | 4 | 24 | 1399 | 36 | 1 | 0 | 21 | 7 | 0 | 28 |
| Future Vol, veh/h | 43 | 1205 | 4 | 24 | 1399 | 36 | 1 | 0 | 21 | 7 | 0 | 28 |
| 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 | 55 | - | - | 70 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 47 | 1310 | 4 | 26 | 1521 | 39 | 1 | 0 | 23 | 8 | 0 | 30 |







| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 1560 | 0 | 0 | 1314 | 0 | 0 | 2219 | 3018 | 657 | 2342 | 3001 | 780 |
| Stage 1 | - | - | - | - | - | - | 1406 | 1406 | - | 1593 | 1593 | - |
| Stage 2 | - | - | - | - | - | - | 813 | 1612 | - | 749 | 1408 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 420 | - | - | 522 | - | - | 24 | 13 | 407 | 19 | 13 | 338 |
| Stage 1 | - | - | - | - | - | - | 146 | 204 | - | 112 | 165 | - |
| Stage 2 | - | - | - | - | - | - | 339 | 162 | - | 370 | 204 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 420 | - | - | 522 | - | - | 19 | 11 | 407 | 16 | 11 | 338 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 19 | 11 | - | 16 | 11 | - |
| Stage 1 | - | - | - | - | - | - | 130 | 181 | - | 99 | 157 | - |
| Stage 2 | - | - | - | - | - | - | 293 | 154 | - | 310 | 181 | - |

| Approach | EB | WB | NB | SB |
|----------------------|-----|-----|------|-------|
| HCM Control Delay, s | 0.5 | 0.2 | 24.2 | 113.8 |
| HCM LOS | | | C | F |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|------|-----|-----|-------|
| Capacity (veh/h) | 211 | 420 | - | - | 522 | - | - | 67 |
| HCM Lane V/C Ratio | 0.113 | 0.111 | - | - | 0.05 | - | - | 0.568 |
| HCM Control Delay (s) | 24.2 | 14.6 | - | - | 12.3 | - | - | 113.8 |
| HCM Lane LOS | C | B | - | - | B | - | - | F |
| HCM 95th %tile Q(veh) | 0.4 | 0.4 | - | - | 0.2 | - | - | 2.4 |

HCM 6th TWSC
2: Oswego Street & E Colfax Avenue (US 40)

Background Traffic Volumes
PM Peak Hour - Year 2022

| Intersection | | | | | | | | | | | | |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh | 2.7 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | | |  | | |  | |
| Traffic Vol, veh/h | 50 | 1183 | 1 | 31 | 1427 | 33 | 2 | 0 | 22 | 8 | 0 | 30 |
| Future Vol, veh/h | 50 | 1183 | 1 | 31 | 1427 | 33 | 2 | 0 | 22 | 8 | 0 | 30 |
| 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 | 45 | - | - | 85 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 54 | 1286 | 1 | 34 | 1551 | 36 | 2 | 0 | 24 | 9 | 0 | 33 |







| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 1587 | 0 | 0 | 1287 | 0 | 0 | 2239 | 3050 | 644 | 2388 | 3032 | 794 |
| Stage 1 | - | - | - | - | - | - | 1395 | 1395 | - | 1637 | 1637 | - |
| Stage 2 | - | - | - | - | - | - | 844 | 1655 | - | 751 | 1395 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 410 | - | - | 535 | - | - | 23 | 12 | 416 | 18 | 13 | 331 |
| Stage 1 | - | - | - | - | - | - | 149 | 207 | - | 105 | 157 | - |
| Stage 2 | - | - | - | - | - | - | 324 | 154 | - | 369 | 207 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 410 | - | - | 535 | - | - | 18 | 10 | 416 | 15 | 11 | 331 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 18 | 10 | - | 15 | 11 | - |
| Stage 1 | - | - | - | - | - | - | 129 | 180 | - | 91 | 147 | - |
| Stage 2 | - | - | - | - | - | - | 274 | 144 | - | 302 | 180 | - |

| Approach | EB | WB | NB | SB |
|----------------------|-----|-----|------|-------|
| HCM Control Delay, s | 0.6 | 0.3 | 34.9 | 143.9 |
| HCM LOS | | | D | F |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h) | 146 | 410 | - | - | 535 | - | - | 61 |
| HCM Lane V/C Ratio | 0.179 | 0.133 | - | - | 0.063 | - | - | 0.677 |
| HCM Control Delay (s) | 34.9 | 15.1 | - | - | 12.2 | - | - | 143.9 |
| HCM Lane LOS | D | C | - | - | B | - | - | F |
| HCM 95th %tile Q(veh) | 0.6 | 0.5 | - | - | 0.2 | - | - | 2.9 |

HCM 6th TWSC
1: E Colfax Avenue (US 40) & Nome Street

Background Traffic Volumes
AM Peak Hour - Year 2040

| Intersection | | | | | | | | | | | | |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh | 4.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | | |  | | |  | |
| Traffic Vol, veh/h | 21 | 2003 | 0 | 11 | 1538 | 18 | 0 | 0 | 0 | 3 | 2 | 27 |
| Future Vol, veh/h | 21 | 2003 | 0 | 11 | 1538 | 18 | 0 | 0 | 0 | 3 | 2 | 27 |
| 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 | 55 | - | - | 70 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 23 | 2177 | 0 | 12 | 1672 | 20 | 0 | 0 | 0 | 3 | 2 | 29 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 1692 | 0 | 0 | 2177 | 0 | 0 | 3084 | 3939 | 1089 | 2841 | 3929 | 846 |
| Stage 1 | - | - | - | - | - | - | 2223 | 2223 | - | 1706 | 1706 | - |
| Stage 2 | - | - | - | - | - | - | 861 | 1716 | - | 1135 | 2223 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 373 | - | - | 241 | - | - | 5 | 3 | 211 | 8 | 3 | 306 |
| Stage 1 | - | - | - | - | - | - | 44 | 79 | - | 95 | 145 | - |
| Stage 2 | - | - | - | - | - | - | 317 | 143 | - | 215 | 79 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 373 | - | - | 241 | - | - | 2 | 3 | 211 | 7 | 3 | 306 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 2 | 3 | - | 7 | 3 | - |
| Stage 1 | - | - | - | - | - | - | 41 | 74 | - | 89 | 138 | - |
| Stage 2 | - | - | - | - | - | - | 268 | 136 | - | 202 | 74 | - |







| Approach | EB | WB | NB | SB |
|----------------------|-----|-----|----|----------|
| HCM Control Delay, s | 0.2 | 0.1 | 0 | \$ 488.7 |
| HCM LOS | | | A | F |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|------|-----|-----|----------|
| Capacity (veh/h) | - | 373 | - | - | 241 | - | - | 27 |
| HCM Lane V/C Ratio | - | 0.061 | - | - | 0.05 | - | - | 1.288 |
| HCM Control Delay (s) | 0 | 15.3 | - | - | 20.7 | - | - | \$ 488.7 |
| HCM Lane LOS | A | C | - | - | C | - | - | F |
| HCM 95th %tile Q(veh) | - | 0.2 | - | - | 0.2 | - | - | 4.1 |

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

HCM 6th TWSC
2: Oswego Street & E Colfax Avenue (US 40)

Background Traffic Volumes
AM Peak Hour - Year 2040

| Intersection | | | | | | | | | | | | |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh | 1.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | | |  | | |  | |
| Traffic Vol, veh/h | 26 | 1980 | 0 | 2 | 1538 | 17 | 3 | 0 | 0 | 0 | 0 | 26 |
| Future Vol, veh/h | 26 | 1980 | 0 | 2 | 1538 | 17 | 3 | 0 | 0 | 0 | 0 | 26 |
| 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 | 45 | - | - | 85 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 28 | 2152 | 0 | 2 | 1672 | 18 | 3 | 0 | 0 | 0 | 0 | 28 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 1690 | 0 | 0 | 2152 | 0 | 0 | 3048 | 3902 | 1076 | 2817 | 3893 | 845 |
| Stage 1 | - | - | - | - | - | - | 2208 | 2208 | - | 1685 | 1685 | - |
| Stage 2 | - | - | - | - | - | - | 840 | 1694 | - | 1132 | 2208 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 374 | - | - | 247 | - | - | 5 | 3 | 215 | 8 | 3 | 306 |
| Stage 1 | - | - | - | - | - | - | 45 | 81 | - | 98 | 149 | - |
| Stage 2 | - | - | - | - | - | - | 326 | 147 | - | 216 | 81 | - |
| Platoon blocked, % | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | 374 | - | - | 247 | - | - | 4 | 3 | 215 | 7 | 3 | 306 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 4 | 3 | - | 7 | 3 | - |
| Stage 1 | - | - | - | - | - | - | 42 | 75 | - | 91 | 148 | - |
| Stage 2 | - | - | - | - | - | - | 293 | 146 | - | 200 | 75 | - |







| Approach | EB | WB | NB | SB |
|----------------------|-----|----|-----------|----|
| HCM Control Delay, s | 0.2 | 0 | \$ 1439.5 | 18 |
| HCM LOS | | | F | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-----------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h) | 4 | 374 | - | - | 247 | - | - | 306 |
| HCM Lane V/C Ratio | 0.815 | 0.076 | - | - | 0.009 | - | - | 0.092 |
| HCM Control Delay (s) | \$ 1439.5 | 15.4 | - | - | 19.7 | - | - | 18 |
| HCM Lane LOS | F | C | - | - | C | - | - | C |
| HCM 95th %tile Q(veh) | 1.1 | 0.2 | - | - | 0 | - | - | 0.3 |

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

HCM 6th TWSC
1: E Colfax Avenue (US 40) & Nome Street

Background Traffic Volumes
PM Peak Hour - Year 2040

| Intersection | | | | | | | | | | | | |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh | 45.6 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | | |  | | |  | |
| Traffic Vol, veh/h | 62 | 1739 | 6 | 35 | 2018 | 53 | 2 | 0 | 30 | 11 | 0 | 41 |
| Future Vol, veh/h | 62 | 1739 | 6 | 35 | 2018 | 53 | 2 | 0 | 30 | 11 | 0 | 41 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 55 | - | - | 70 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 67 | 1890 | 7 | 38 | 2193 | 58 | 2 | 0 | 33 | 12 | 0 | 45 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 2251 | 0 | 0 | 1897 | 0 | 0 | 3201 | 4355 | 949 | 3377 | 4329 | 1126 |
| Stage 1 | - | - | - | - | - | - | 2028 | 2028 | - | 2298 | 2298 | - |
| Stage 2 | - | - | - | - | - | - | 1173 | 2327 | - | 1079 | 2031 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 225 | - | - | 310 | - | - | 4 | 2 | 261 | ~ 3 | 2 | 199 |
| Stage 1 | - | - | - | - | - | - | 59 | 100 | - | 40 | 72 | - |
| Stage 2 | - | - | - | - | - | - | 204 | 70 | - | 233 | 99 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 225 | - | - | 310 | - | - | ~ 2 | 1 | 261 | ~ 2 | 1 | 199 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | ~ 2 | 1 | - | ~ 2 | 1 | - |
| Stage 1 | - | - | - | - | - | - | 41 | 70 | - | 28 | 63 | - |
| Stage 2 | - | - | - | - | - | - | 139 | 61 | - | 143 | 69 | - |

| Approach | EB | WB | NB | SB |
|----------------------|----|-----|----------|-----------|
| HCM Control Delay, s | 1 | 0.3 | \$ 436.7 | \$ 3187.4 |
| HCM LOS | | | F | F |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|----------|------|-----|-----|-------|-----|-----|-----------|
| Capacity (veh/h) | 29 | 225 | - | - | 310 | - | - | 9 |
| HCM Lane V/C Ratio | 1.199 | 0.3 | - | - | 0.123 | - | - | 6.28 |
| HCM Control Delay (s) | \$ 436.7 | 27.7 | - | - | 18.2 | - | - | \$ 3187.4 |
| HCM Lane LOS | F | D | - | - | C | - | - | F |
| HCM 95th %tile Q(veh) | 4 | 1.2 | - | - | 0.4 | - | - | 8.4 |







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

HCM 6th TWSC

2: Oswego Street & E Colfax Avenue (US 40)

Background Traffic Volumes

PM Peak Hour - Year 2040

| Intersection | | | | | | | | | | | | |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh | 54.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | | |  | | |  | |
| Traffic Vol, veh/h | 72 | 1706 | 2 | 45 | 2058 | 48 | 3 | 0 | 32 | 12 | 0 | 44 |
| Future Vol, veh/h | 72 | 1706 | 2 | 45 | 2058 | 48 | 3 | 0 | 32 | 12 | 0 | 44 |
| 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 | 45 | - | - | 85 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 78 | 1854 | 2 | 49 | 2237 | 52 | 3 | 0 | 35 | 13 | 0 | 48 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 2289 | 0 | 0 | 1856 | 0 | 0 | 3228 | 4398 | 928 | 3444 | 4373 | 1145 |
| Stage 1 | - | - | - | - | - | - | 2011 | 2011 | - | 2361 | 2361 | - |
| Stage 2 | - | - | - | - | - | - | 1217 | 2387 | - | 1083 | 2012 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 218 | - | - | 322 | - | - | 4 | 2 | 270 | ~ 3 | 2 | 193 |
| Stage 1 | - | - | - | - | - | - | 61 | 102 | - | 36 | 67 | - |
| Stage 2 | - | - | - | - | - | - | 192 | 65 | - | 232 | 102 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 218 | - | - | 322 | - | - | ~ 2 | 1 | 270 | ~ 2 | 1 | 193 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | ~ 2 | 1 | - | ~ 2 | 1 | - |
| Stage 1 | - | - | - | - | - | - | 39 | 65 | - | 23 | 57 | - |
| Stage 2 | - | - | - | - | - | - | 122 | 55 | - | 130 | 65 | - |







| Approach | EB | WB | NB | SB |
|----------------------|-----|-----|----------|-----------|
| HCM Control Delay, s | 1.2 | 0.4 | \$ 725.5 | \$ 3404.4 |
| HCM LOS | | | F | F |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|----------|-------|-----|-----|-------|-----|-----|-----------|
| Capacity (veh/h) | 22 | 218 | - | - | 322 | - | - | 9 |
| HCM Lane V/C Ratio | 1.729 | 0.359 | - | - | 0.152 | - | - | 6.763 |
| HCM Control Delay (s) | \$ 725.5 | 30.5 | - | - | 18.2 | - | - | \$ 3404.4 |
| HCM Lane LOS | F | D | - | - | C | - | - | F |
| HCM 95th %tile Q(veh) | 4.9 | 1.5 | - | - | 0.5 | - | - | 9 |

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

HCM 6th TWSC
1: E Colfax Avenue (US 40) & Nome Street

Total Traffic Volumes
AM Peak Hour - Year 2022

| Intersection | | | | | | | | | | | | |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh | 0.5 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | | |  | | |  | |
| Traffic Vol, veh/h | 15 | 1392 | 0 | 7 | 1080 | 16 | 0 | 0 | 0 | 3 | 1 | 19 |
| Future Vol, veh/h | 15 | 1392 | 0 | 7 | 1080 | 16 | 0 | 0 | 0 | 3 | 1 | 19 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 55 | - | - | 70 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 16 | 1513 | 0 | 8 | 1174 | 17 | 0 | 0 | 0 | 3 | 1 | 21 |







| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 1191 | 0 | 0 | 1513 | 0 | 0 | 2149 | 2752 | 757 | 1988 | 2744 | 596 |
| Stage 1 | - | - | - | - | - | - | 1545 | 1545 | - | 1199 | 1199 | - |
| Stage 2 | - | - | - | - | - | - | 604 | 1207 | - | 789 | 1545 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 582 | - | - | 438 | - | - | 27 | 19 | 350 | 36 | 20 | 447 |
| Stage 1 | - | - | - | - | - | - | 120 | 174 | - | 197 | 257 | - |
| Stage 2 | - | - | - | - | - | - | 452 | 254 | - | 350 | 174 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 582 | - | - | 438 | - | - | 24 | 18 | 350 | 35 | 19 | 447 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 24 | 18 | - | 35 | 19 | - |
| Stage 1 | - | - | - | - | - | - | 117 | 169 | - | 192 | 252 | - |
| Stage 2 | - | - | - | - | - | - | 421 | 249 | - | 340 | 169 | - |

| Approach | EB | | | WB | | | NB | | | SB | | |
|----------------------|-----|--|--|-----|--|--|----|--|--|------|--|--|
| HCM Control Delay, s | 0.1 | | | 0.1 | | | 0 | | | 40.2 | | |
| HCM LOS | | | | | | | A | | | E | | |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h) | - | 582 | - | - | 438 | - | - | 127 |
| HCM Lane V/C Ratio | - | 0.028 | - | - | 0.017 | - | - | 0.197 |
| HCM Control Delay (s) | 0 | 11.4 | - | - | 13.4 | - | - | 40.2 |
| HCM Lane LOS | A | B | - | - | B | - | - | E |
| HCM 95th %tile Q(veh) | - | 0.1 | - | - | 0.1 | - | - | 0.7 |

HCM 6th TWSC
2: Oswego Street & E Colfax Avenue (US 40)

Total Traffic Volumes
AM Peak Hour - Year 2022

| Intersection | | | | | | | | | | | | |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh | 0.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | | |  | | |  | |
| Traffic Vol, veh/h | 21 | 1387 | 0 | 1 | 1070 | 11 | 2 | 0 | 0 | 0 | 0 | 19 |
| Future Vol, veh/h | 21 | 1387 | 0 | 1 | 1070 | 11 | 2 | 0 | 0 | 0 | 0 | 19 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 45 | - | - | 85 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 23 | 1508 | 0 | 1 | 1163 | 12 | 2 | 0 | 0 | 0 | 0 | 21 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 1175 | 0 | 0 | 1508 | 0 | 0 | 2138 | 2731 | 754 | 1971 | 2725 | 588 |
| Stage 1 | - | - | - | - | - | - | 1554 | 1554 | - | 1171 | 1171 | - |
| Stage 2 | - | - | - | - | - | - | 584 | 1177 | - | 800 | 1554 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 590 | - | - | 440 | - | - | 28 | 20 | 352 | 37 | 20 | 452 |
| Stage 1 | - | - | - | - | - | - | 118 | 173 | - | 205 | 265 | - |
| Stage 2 | - | - | - | - | - | - | 465 | 263 | - | 345 | 173 | - |
| Platoon blocked, % | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | 590 | - | - | 440 | - | - | 26 | 19 | 352 | 36 | 19 | 452 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 26 | 19 | - | 36 | 19 | - |
| Stage 1 | - | - | - | - | - | - | 113 | 166 | - | 197 | 264 | - |
| Stage 2 | - | - | - | - | - | - | 443 | 262 | - | 332 | 166 | - |

| Approach | EB | WB | NB | SB |
|----------------------|-----|----|-------|------|
| HCM Control Delay, s | 0.2 | 0 | 155.7 | 13.3 |
| HCM LOS | | | F | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h) | 26 | 590 | - | - | 440 | - | - | 452 |
| HCM Lane V/C Ratio | 0.084 | 0.039 | - | - | 0.002 | - | - | 0.046 |
| HCM Control Delay (s) | 155.7 | 11.3 | - | - | 13.2 | - | - | 13.3 |
| HCM Lane LOS | F | B | - | - | B | - | - | B |
| HCM 95th %tile Q(veh) | 0.3 | 0.1 | - | - | 0 | - | - | 0.1 |

HCM 6th TWSC

3: Site Access & E Colfax Avenue (US 40)

Total Traffic Volumes
AM Peak Hour - Year 2022

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.2 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑↑ | | ↔ | ↑↑ | ↔ | |
| Traffic Vol, veh/h | 1390 | 5 | 5 | 1086 | 17 | 17 |
| Future Vol, veh/h | 1390 | 5 | 5 | 1086 | 17 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1511 | 5 | 5 | 1180 | 18 | 18 |







| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 2114 |
| Stage 1 | - | - | 1514 |
| Stage 2 | - | - | 600 |
| Critical Hdwy | - | 4.14 | 6.84 |
| Critical Hdwy Stg 1 | - | - | 5.84 |
| Critical Hdwy Stg 2 | - | - | 5.84 |
| Follow-up Hdwy | - | 2.22 | 3.52 |
| Pot Cap-1 Maneuver | - | 437 | 350 |
| Stage 1 | - | - | 168 |
| Stage 2 | - | - | 511 |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | - | 437 | 350 |
| Mov Cap-2 Maneuver | - | - | 44 |
| Stage 1 | - | - | 168 |
| Stage 2 | - | - | 505 |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.1 | 87.2 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 78 | - | - | 437 | - |
| HCM Lane V/C Ratio | 0.474 | - | - | 0.012 | - |
| HCM Control Delay (s) | 87.2 | - | - | 13.3 | - |
| HCM Lane LOS | F | - | - | B | - |
| HCM 95th %tile Q(veh) | 2 | - | - | 0 | - |

HCM 6th TWSC
1: E Colfax Avenue (US 40) & Nome Street

Total Traffic Volumes
PM Peak Hour - Year 2022

| 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 | 43 | 1219 | 4 | 24 | 1407 | 38 | 1 | 0 | 21 | 10 | 0 | 28 |
| Future Vol, veh/h | 43 | 1219 | 4 | 24 | 1407 | 38 | 1 | 0 | 21 | 10 | 0 | 28 |
| 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 | 55 | - | - | 70 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 47 | 1325 | 4 | 26 | 1529 | 41 | 1 | 0 | 23 | 11 | 0 | 30 |







| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 1570 | 0 | 0 | 1329 | 0 | 0 | 2238 | 3043 | 665 | 2359 | 3025 | 785 |
| Stage 1 | - | - | - | - | - | - | 1421 | 1421 | - | 1602 | 1602 | - |
| Stage 2 | - | - | - | - | - | - | 817 | 1622 | - | 757 | 1423 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 416 | - | - | 515 | - | - | 23 | 13 | 403 | 19 | 13 | 336 |
| Stage 1 | - | - | - | - | - | - | 143 | 201 | - | 110 | 163 | - |
| Stage 2 | - | - | - | - | - | - | 337 | 160 | - | 366 | 200 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 416 | - | - | 515 | - | - | 18 | 11 | 403 | 16 | 11 | 336 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 18 | 11 | - | 16 | 11 | - |
| Stage 1 | - | - | - | - | - | - | 127 | 178 | - | 98 | 155 | - |
| Stage 2 | - | - | - | - | - | - | 291 | 152 | - | 306 | 177 | - |

| Approach | EB | WB | NB | SB |
|----------------------|-----|-----|----|-------|
| HCM Control Delay, s | 0.5 | 0.2 | 25 | 179.2 |
| HCM LOS | | | D | F |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h) | 204 | 416 | - | - | 515 | - | - | 54 |
| HCM Lane V/C Ratio | 0.117 | 0.112 | - | - | 0.051 | - | - | 0.765 |
| HCM Control Delay (s) | 25 | 14.7 | - | - | 12.4 | - | - | 179.2 |
| HCM Lane LOS | D | B | - | - | B | - | - | F |
| HCM 95th %tile Q(veh) | 0.4 | 0.4 | - | - | 0.2 | - | - | 3.2 |

HCM 6th TWSC
2: Oswego Street & E Colfax Avenue (US 40)

Total Traffic Volumes
PM Peak Hour - Year 2022

| 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 | 52 | 1191 | 1 | 31 | 1441 | 33 | 2 | 0 | 22 | 8 | 0 | 33 |
| Future Vol, veh/h | 52 | 1191 | 1 | 31 | 1441 | 33 | 2 | 0 | 22 | 8 | 0 | 33 |
| 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 | 45 | - | - | 85 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 57 | 1295 | 1 | 34 | 1566 | 36 | 2 | 0 | 24 | 9 | 0 | 36 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 1602 | 0 | 0 | 1296 | 0 | 0 | 2261 | 3080 | 648 | 2414 | 3062 | 801 |
| Stage 1 | - | - | - | - | - | - | 1410 | 1410 | - | 1652 | 1652 | - |
| Stage 2 | - | - | - | - | - | - | 851 | 1670 | - | 762 | 1410 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 404 | - | - | 531 | - | - | 22 | 12 | 413 | 17 | 12 | 327 |
| Stage 1 | - | - | - | - | - | - | 145 | 203 | - | 103 | 154 | - |
| Stage 2 | - | - | - | - | - | - | 321 | 151 | - | 363 | 203 | - |
| Platoon blocked, % | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | 404 | - | - | 531 | - | - | 17 | 10 | 413 | 14 | 10 | 327 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 17 | 10 | - | 14 | 10 | - |
| Stage 1 | - | - | - | - | - | - | 125 | 174 | - | 88 | 144 | - |
| Stage 2 | - | - | - | - | - | - | 267 | 141 | - | 294 | 174 | - |

| Approach | EB | WB | NB | SB |
|----------------------|-----|-----|------|-------|
| HCM Control Delay, s | 0.6 | 0.3 | 36.5 | 155.3 |
| HCM LOS | | | E | F |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h) | 140 | 404 | - | - | 531 | - | - | 61 |
| HCM Lane V/C Ratio | 0.186 | 0.14 | - | - | 0.063 | - | - | 0.731 |
| HCM Control Delay (s) | 36.5 | 15.4 | - | - | 12.2 | - | - | 155.3 |
| HCM Lane LOS | E | C | - | - | B | - | - | F |
| HCM 95th %tile Q(veh) | 0.7 | 0.5 | - | - | 0.2 | - | - | 3.2 |

HCM 6th TWSC
3: Site Access & E Colfax Avenue (US 40)

Total Traffic Volumes
PM Peak Hour - Year 2022

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 0.6 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑↑ | | ↖ | ↑↑ | ↘ | |
| Traffic Vol, veh/h | 1233 | 17 | 17 | 1459 | 10 | 10 |
| Future Vol, veh/h | 1233 | 17 | 17 | 1459 | 10 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1340 | 18 | 18 | 1586 | 11 | 11 |







| Major/Minor | Major1 | Major2 | Minor1 | | | |
|----------------------|--------|--------|--------|---|------|------|
| Conflicting Flow All | 0 | 0 | 1358 | 0 | 2178 | 679 |
| Stage 1 | - | - | - | - | 1349 | - |
| Stage 2 | - | - | - | - | 829 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 502 | - | 39 | 394 |
| Stage 1 | - | - | - | - | 206 | - |
| Stage 2 | - | - | - | - | 389 | - |
| Platoon blocked, % | - | - | - | - | - | - |
| Mov Cap-1 Maneuver | - | - | 502 | - | 38 | 394 |
| Mov Cap-2 Maneuver | - | - | - | - | 38 | - |
| Stage 1 | - | - | - | - | 206 | - |
| Stage 2 | - | - | - | - | 375 | - |

| Approach | EB | WB | NB |
|----------------------|----|-----|------|
| HCM Control Delay, s | 0 | 0.1 | 79.5 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|-------|-----|-----|-------|-----|
| Capacity (veh/h) | 69 | - | - | 502 | - |
| HCM Lane V/C Ratio | 0.315 | - | - | 0.037 | - |
| HCM Control Delay (s) | 79.5 | - | - | 12.4 | - |
| HCM Lane LOS | F | - | - | B | - |
| HCM 95th %tile Q(veh) | 1.2 | - | - | 0.1 | - |

HCM 6th TWSC
1: E Colfax Avenue (US 40) & Nome Street

Total Traffic Volumes
AM Peak Hour - Year 2040

| 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 | 21 | 2007 | 0 | 11 | 1552 | 21 | 0 | 0 | 0 | 4 | 2 | 27 |
| Future Vol, veh/h | 21 | 2007 | 0 | 11 | 1552 | 21 | 0 | 0 | 0 | 4 | 2 | 27 |
| 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 | 55 | - | - | 70 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 23 | 2182 | 0 | 12 | 1687 | 23 | 0 | 0 | 0 | 4 | 2 | 29 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 1710 | 0 | 0 | 2182 | 0 | 0 | 3097 | 3962 | 1091 | 2860 | 3951 | 855 |
| Stage 1 | - | - | - | - | - | - | 2228 | 2228 | - | 1723 | 1723 | - |
| Stage 2 | - | - | - | - | - | - | 869 | 1734 | - | 1137 | 2228 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 367 | - | - | 240 | - | - | 5 | 3 | 210 | 8 | 3 | 302 |
| Stage 1 | - | - | - | - | - | - | 44 | 79 | - | 92 | 142 | - |
| Stage 2 | - | - | - | - | - | - | 313 | 141 | - | 215 | 79 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 367 | - | - | 240 | - | - | 2 | 3 | 210 | 7 | 3 | 302 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 2 | 3 | - | 7 | 3 | - |
| Stage 1 | - | - | - | - | - | - | 41 | 74 | - | 86 | 135 | - |
| Stage 2 | - | - | - | - | - | - | 264 | 134 | - | 202 | 74 | - |

| Approach | EB | WB | NB | SB |
|----------------------|-----|-----|----|----------|
| HCM Control Delay, s | 0.2 | 0.1 | 0 | \$ 567.1 |
| HCM LOS | | | A | F |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|------|-----|-----|----------|
| Capacity (veh/h) | - | 367 | - | - | 240 | - | - | 25 |
| HCM Lane V/C Ratio | - | 0.062 | - | - | 0.05 | - | - | 1.435 |
| HCM Control Delay (s) | 0 | 15.5 | - | - | 20.8 | - | - | \$ 567.1 |
| HCM Lane LOS | A | C | - | - | C | - | - | F |
| HCM 95th %tile Q(veh) | - | 0.2 | - | - | 0.2 | - | - | 4.4 |

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

HCM 6th TWSC
2: Oswego Street & E Colfax Avenue (US 40)

Total Traffic Volumes
AM Peak Hour - Year 2040

| Intersection | | | | | | | | | | | | |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh | 1.4 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | ↰ | ↰↱ | | ↰ | ↰↱ | | | ↰↱ | | | ↰↱ | |
| Traffic Vol, veh/h | 29 | 1994 | 0 | 2 | 1542 | 17 | 3 | 0 | 0 | 0 | 0 | 27 |
| Future Vol, veh/h | 29 | 1994 | 0 | 2 | 1542 | 17 | 3 | 0 | 0 | 0 | 0 | 27 |
| 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 | 45 | - | - | 85 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 32 | 2167 | 0 | 2 | 1676 | 18 | 3 | 0 | 0 | 0 | 0 | 29 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 1694 | 0 | 0 | 2167 | 0 | 0 | 3073 | 3929 | 1084 | 2837 | 3920 | 847 |
| Stage 1 | - | - | - | - | - | - | 2231 | 2231 | - | 1689 | 1689 | - |
| Stage 2 | - | - | - | - | - | - | 842 | 1698 | - | 1148 | 2231 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 373 | - | - | 243 | - | - | 5 | 3 | 212 | 8 | 3 | 305 |
| Stage 1 | - | - | - | - | - | - | 44 | 79 | - | 97 | 148 | - |
| Stage 2 | - | - | - | - | - | - | 325 | 146 | - | 211 | 79 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 373 | - | - | 243 | - | - | 4 | 3 | 212 | 7 | 3 | 305 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 4 | 3 | - | 7 | 3 | - |
| Stage 1 | - | - | - | - | - | - | 40 | 72 | - | 89 | 147 | - |
| Stage 2 | - | - | - | - | - | - | 291 | 145 | - | 193 | 72 | - |

| Approach | EB | WB | NB | SB |
|----------------------|-----|----|-----------|------|
| HCM Control Delay, s | 0.2 | 0 | \$ 1439.5 | 18.1 |
| HCM LOS | | | F | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|-----------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h) | 4 | 373 | - | - | 243 | - | - | 305 |
| HCM Lane V/C Ratio | 0.815 | 0.085 | - | - | 0.009 | - | - | 0.096 |
| HCM Control Delay (s) | \$ 1439.5 | 15.5 | - | - | 19.9 | - | - | 18.1 |
| HCM Lane LOS | F | C | - | - | C | - | - | C |
| HCM 95th %tile Q(veh) | 1.1 | 0.3 | - | - | 0 | - | - | 0.3 |

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

HCM 6th TWSC

3: Site Access & E Colfax Avenue (US 40)

Total Traffic Volumes
AM Peak Hour - Year 2040

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 8.2 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑↑ | | ↑ | ↑↑ | ↑↑ | |
| Traffic Vol, veh/h | 2006 | 5 | 5 | 1567 | 17 | 17 |
| Future Vol, veh/h | 2006 | 5 | 5 | 1567 | 17 | 17 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 2180 | 5 | 5 | 1703 | 18 | 18 |

| Major/Minor | Major1 | Major2 | Minor1 | | | |
|----------------------|--------|--------|--------|---|------|------|
| Conflicting Flow All | 0 | 0 | 2185 | 0 | 3045 | 1093 |
| Stage 1 | - | - | - | - | 2183 | - |
| Stage 2 | - | - | - | - | 862 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.84 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.84 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.84 | - |
| Follow-up Hdwy | - | - | 2.22 | - | 3.52 | 3.32 |
| Pot Cap-1 Maneuver | - | - | 239 | - | ~ 10 | 209 |
| Stage 1 | - | - | - | - | 72 | - |
| Stage 2 | - | - | - | - | 374 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 239 | - | ~ 10 | 209 |
| Mov Cap-2 Maneuver | - | - | - | - | ~ 10 | - |
| Stage 1 | - | - | - | - | 72 | - |
| Stage 2 | - | - | - | - | 366 | - |







| Approach | EB | WB | NB |
|----------------------|----|-----|----------|
| HCM Control Delay, s | 0 | 0.1 | \$ 866.5 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|----------|-----|-----|-------|-----|
| Capacity (veh/h) | 19 | - | - | 239 | - |
| HCM Lane V/C Ratio | 1.945 | - | - | 0.023 | - |
| HCM Control Delay (s) | \$ 866.5 | - | - | 20.4 | - |
| HCM Lane LOS | F | - | - | C | - |
| HCM 95th %tile Q(veh) | 5 | - | - | 0.1 | - |

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

HCM 6th TWSC
1: E Colfax Avenue (US 40) & Nome Street

Total Traffic Volumes
PM Peak Hour - Year 2040

| Intersection | | | | | | | | | | | | |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh | 56.3 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | | |  | | |  | |
| Traffic Vol, veh/h | 62 | 1753 | 6 | 35 | 2026 | 55 | 2 | 0 | 30 | 14 | 0 | 41 |
| Future Vol, veh/h | 62 | 1753 | 6 | 35 | 2026 | 55 | 2 | 0 | 30 | 14 | 0 | 41 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | 55 | - | - | 70 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 67 | 1905 | 7 | 38 | 2202 | 60 | 2 | 0 | 33 | 15 | 0 | 45 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 2262 | 0 | 0 | 1912 | 0 | 0 | 3220 | 4381 | 956 | 3395 | 4354 | 1131 |
| Stage 1 | - | - | - | - | - | - | 2043 | 2043 | - | 2308 | 2308 | - |
| Stage 2 | - | - | - | - | - | - | 1177 | 2338 | - | 1087 | 2046 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 223 | - | - | 306 | - | - | 4 | 2 | 258 | ~ 3 | 2 | 197 |
| Stage 1 | - | - | - | - | - | - | 58 | 98 | - | 39 | 72 | - |
| Stage 2 | - | - | - | - | - | - | 203 | 69 | - | 231 | 98 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 223 | - | - | 306 | - | - | ~ 2 | 1 | 258 | ~ 2 | 1 | 197 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | ~ 2 | 1 | - | ~ 2 | 1 | - |
| Stage 1 | - | - | - | - | - | - | 41 | 69 | - | 27 | 63 | - |
| Stage 2 | - | - | - | - | - | - | 138 | 60 | - | 141 | 69 | - |







| Approach | EB | WB | NB | SB |
|----------------------|----|-----|----------|-----------|
| HCM Control Delay, s | 1 | 0.3 | \$ 436.7 | \$ 3817.8 |
| HCM LOS | | | F | F |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|----------|-------|-----|-----|-------|-----|-----|-----------|
| Capacity (veh/h) | 29 | 223 | - | - | 306 | - | - | 8 |
| HCM Lane V/C Ratio | 1.199 | 0.302 | - | - | 0.124 | - | - | 7.473 |
| HCM Control Delay (s) | \$ 436.7 | 28 | - | - | 18.4 | - | - | \$ 3817.8 |
| HCM Lane LOS | F | D | - | - | C | - | - | F |
| HCM 95th %tile Q(veh) | 4 | 1.2 | - | - | 0.4 | - | - | 9 |

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

HCM 6th TWSC
2: Oswego Street & E Colfax Avenue (US 40)

Total Traffic Volumes
PM Peak Hour - Year 2040

| Intersection | | | | | | | | | | | | |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh | 59 | | | | | | | | | | | |
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations |  |  | |  |  | | |  | | |  | |
| Traffic Vol, veh/h | 74 | 1714 | 2 | 45 | 2072 | 48 | 3 | 0 | 32 | 12 | 0 | 47 |
| Future Vol, veh/h | 74 | 1714 | 2 | 45 | 2072 | 48 | 3 | 0 | 32 | 12 | 0 | 47 |
| 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 | 45 | - | - | 85 | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 80 | 1863 | 2 | 49 | 2252 | 52 | 3 | 0 | 35 | 13 | 0 | 51 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|----------------------|--------|---|---|--------|---|---|--------|------|------|--------|------|------|
| Conflicting Flow All | 2304 | 0 | 0 | 1865 | 0 | 0 | 3248 | 4426 | 933 | 3468 | 4401 | 1152 |
| Stage 1 | - | - | - | - | - | - | 2024 | 2024 | - | 2376 | 2376 | - |
| Stage 2 | - | - | - | - | - | - | 1224 | 2402 | - | 1092 | 2025 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.54 | 6.54 | 6.94 | 7.54 | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.22 | - | - | 2.22 | - | - | 3.52 | 4.02 | 3.32 | 3.52 | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | 215 | - | - | 320 | - | - | 4 | 1 | 268 | ~ 3 | 1 | 191 |
| Stage 1 | - | - | - | - | - | - | 59 | 100 | - | 35 | 66 | - |
| Stage 2 | - | - | - | - | - | - | 190 | 64 | - | 229 | 100 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 215 | - | - | 320 | - | - | ~ 2 | 1 | 268 | ~ 2 | 1 | 191 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | ~ 2 | 1 | - | ~ 2 | 1 | - |
| Stage 1 | - | - | - | - | - | - | 37 | 63 | - | 22 | 56 | - |
| Stage 2 | - | - | - | - | - | - | 118 | 54 | - | 125 | 63 | - |

| Approach | EB | WB | NB | SB |
|----------------------|-----|-----|----------|-----------|
| HCM Control Delay, s | 1.3 | 0.4 | \$ 725.5 | \$ 3567.1 |
| HCM LOS | | | F | F |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|-----------------------|----------|-------|-----|-----|-------|-----|-----|-----------|
| Capacity (veh/h) | 22 | 215 | - | - | 320 | - | - | 9 |
| HCM Lane V/C Ratio | 1.729 | 0.374 | - | - | 0.153 | - | - | 7.126 |
| HCM Control Delay (s) | \$ 725.5 | 31.4 | - | - | 18.3 | - | - | \$ 3567.1 |
| HCM Lane LOS | F | D | - | - | C | - | - | F |
| HCM 95th %tile Q(veh) | 4.9 | 1.6 | - | - | 0.5 | - | - | 9.4 |

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

HCM 6th TWSC

3: Site Access & E Colfax Avenue (US 40)

Total Traffic Volumes
PM Peak Hour - Year 2040

| Intersection | | | | | | |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh | 3.6 | | | | | |
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑↑ | | ↖ | ↑↑ | ↖ | |
| Traffic Vol, veh/h | 1780 | 17 | 17 | 2105 | 10 | 10 |
| Future Vol, veh/h | 1780 | 17 | 17 | 2105 | 10 | 10 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | 150 | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 92 | 92 | 92 | 92 | 92 | 92 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 1935 | 18 | 18 | 2288 | 11 | 11 |

| Major/Minor | Major1 | Major2 | Minor1 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | 0 | 0 | 1953 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Critical Hdwy | - | - | 4.14 |
| Critical Hdwy Stg 1 | - | - | - |
| Critical Hdwy Stg 2 | - | - | - |
| Follow-up Hdwy | - | - | 2.22 |
| Pot Cap-1 Maneuver | - | - | 295 |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |
| Platoon blocked, % | - | - | - |
| Mov Cap-1 Maneuver | - | - | 295 |
| Mov Cap-2 Maneuver | - | - | - |
| Stage 1 | - | - | - |
| Stage 2 | - | - | - |

| Approach | EB | WB | NB |
|----------------------|----|-----|----------|
| HCM Control Delay, s | 0 | 0.1 | \$ 690.3 |
| HCM LOS | | | F |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|-----------------------|----------|-----|-----|-------|-----|
| Capacity (veh/h) | 16 | - | - | 295 | - |
| HCM Lane V/C Ratio | 1.359 | - | - | 0.063 | - |
| HCM Control Delay (s) | \$ 690.3 | - | - | 18 | - |
| HCM Lane LOS | F | - | - | C | - |
| HCM 95th %tile Q(veh) | 3.2 | - | - | 0.2 | - |

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