# APPENDIX D

*Traffic Impact Analysis*

LINSCOTT LAW & GREENSPAN engineers

# TRAFFIC IMPACT ANALYSIS FOR THE GLOBEMASTER CORRIDOR SPECIFIC PLAN

**City of Long Beach, California**
**June 30, 2020**

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# TABLE OF CONTENTS


| SECTION | | | PAGE |
|---|---|---|---|
| **1.0** | **Introduction** | | **1** |
| **2.0** | **Project Scope** | | **1** |
| | 2.1 | Project Description | 1 |
| | 2.2 | Study Scope | 2 |
| **3.0** | **Existing Conditions** | | **3** |
| | 3.1 | Existing Street System | 3 |
| | 3.2 | Existing Truck Routes | 7 |
| | 3.3 | Existing Public Transit | 7 |
| | 3.4 | Existing Bicycle Master Plan | 7 |
| | 3.5 | Existing Volumes | 8 |
| | 3.6 | Existing Intersection Peak Hour LOS | 9 |
| | | 3.6.1 Intersection Capacity Utilization (ICU) Method of Analysis | 9 |
| | | 3.6.1 Highway Capacity Manual (HCM) Method of Analysis (Unsignalized Intersections) | 9 |
| | | 3.6.2 Level of Service Criteria | 10 |
| | 3.7 | Existing Level of Service Results | 10 |
| **4.0** | **Traffic Forecasts** | | **15** |
| | 4.1 | Project Traffic Generation | 15 |
| | 4.2 | Project Traffic Distribution and Assignment | 22 |
| | 4.3 | Existing (2018) Plus Project Traffic Forecasts | 22 |
| | 4.4 | Year 2040 Baseline Traffic Forecasts | 22 |
| | | 4.4.1 Year 2040 Planned Improvements | 22 |
| | | 4.4.2 Ambient Growth | 24 |
| | | 4.4.3 Year 2040 Baseline Traffic Volumes | 24 |
| | 4.5 | Year 2040 Plus Project Traffic Volumes | 24 |
| **5.0** | **Traffic Impact Analysis** | | **25** |
| | 5.1 | Significant Impact Criteria | 25 |
| | 5.2 | Existing (2018) Plus Project Traffic Conditions | 26 |
| | | 5.2.1 Existing Traffic Conditions | 26 |
| | | 5.2.2 Existing Plus Project Traffic Conditions | 26 |
| | 5.3 | Year 2040 Baseline Traffic Conditions | 31 |
| | | 5.3.1 Year 2040 Baseline Traffic Conditions | 31 |
| | | 5.3.2 Year 2040 Plus Project Traffic Conditions | 31 |
| **6.0** | **State of California (Caltrans) Analysis** | | **35** |

# TABLE OF CONTENTS (CONTINUED)

**SECTION** **PAGE**


6.1 Highway Capacity Manual (HCM) Method of Analysis (Signalized Intersections) ..... 35
6.2 Existing Plus Project Traffic Conditions ..... 37
6.2.1 Existing Traffic Conditions ..... 37
6.2.2 Existing Plus Project Traffic Conditions ..... 37
6.3 Year 2040 Traffic Conditions ..... 39
6.3.1 Year 2040 Baseline Traffic Conditions ..... 39
6.3.2 Year 2040 Plus Project Traffic Conditions ..... 39

**7.0 Intersection Mitigation Measures ..... 41**
7.1.1 Existing Plus Project Traffic Conditions ..... 42
7.1.2 Year 2040 Plus Project Traffic Conditions ..... 43
7.1.3 Existing Plus Project Traffic Conditions – Caltrans ..... 45
7.1.4 Year 2040 Plus Project Traffic Conditions – Caltrans ..... 45
7.2 Project-Related Fair Share Contribution ..... 46
7.2.1 Year 2040 Project-Related Fair Share Contribution ..... 47

**8.0 Congestion Management Program Compliance Assessment ..... 48**
8.1 Traffic Impact Review ..... 48
8.1.1 Intersections ..... 48
8.1.2 Freeway Mainline Segments ..... 48

**9.0 Summary Of Findings And Conclusions ..... 52**


# APPENDICES

**APPENDIX**


A. Existing Traffic Count Data
B. Intersection Level of Service Calculation Worksheets
C. Trip Generation Tables
D. Year 2040 SCAG Traffic Model Plots for Globemaster Corridor Specific Plan TAZ's
E. Caltrans Intersection Level of Service Calculation Worksheets

# LIST OF TABLES


| TABLE | | PAGE |
|---|---|---|
| 1 | Level of Service Criteria for Signalized Intersections | 11 |
| 2 | Level of Service Criteria for Unsignalized Intersections (HCM) | 12 |
| 3 | Existing (2018) Intersection Peak Hour Levels of Service | 13-14 |
| 4 | Project Trip Generation Tables | 18 |
| 5 | Existing (2018) Project Trip Generation | 19 |
| 6 | Proposed Project Trip Generation | 20-21 |
| 7 | Existing (2018) Plus Project Intersection Peak Hour Levels of Service | 28-30 |
| 8 | Year 2040 Plus Project Intersection Peak Hour Levels of Service | 33-34 |
| 9 | Level of Service Criteria for Signalized Intersection (HCM) | 36 |
| 10 | Existing (2018) Plus Project Intersection Peak Hour Levels of Service – Caltrans | 38 |
| 11 | Year 2040 Plus Project Intersection Peak Hour Levels of Service – Caltrans | 40 |
| 12 | Year 2040 Project Fair Share Contribution | 47 |
| 13 | CMP Freeway Mainline Segment Peak Hour Levels of Service Existing (2018) + Project Conditions | 50 |
| 14 | CMP Freeway Mainline Segment Peak Hour Levels of Service Year 2040 + Project Conditions | 51 |

# LIST OF FIGURES


| FIGURE | | FOLLOWING PAGE |
|---|---|---|
| 1 | Study Area | 1 |
| 2 | Globemaster Corridor Existing Land Use Map | 2 |
| 3 | Globemaster Corridor Proposed Land Use Map | 2 |
| 4 | Existing (Year 2018) Roadway Conditions and Intersection Controls | 4 |
| 5 | Existing (Year 2018) Street Classifications | 4 |
| 6 | Existing (Year 2018) Truck Routes | 7 |
| 7 | Existing (Year 2018) Public Transit | 7 |
| 8A | Existing (Year 2018) Bicycle Facilities | 8 |
| 8B | Existing and Proposed "8-to-80" Bicycle Facilities | 8 |
| 9 | Existing (Year 2018) AM Peak Hour Traffic Volumes | 8 |
| 10 | Existing (Year 2018) PM Peak Hour Traffic Volumes | 8 |
| 11 | Globemaster Corridor Specific Plan Traffic Analysis Zones (TAZs) Map | 21 |
| 12A | Project Trip Distribution Pattern (Passenger Cars) | 24 |
| 12B | Project Trip Distribution Pattern (Trucks) | 24 |
| 13 | AM Peak Hour Project Only Traffic Volumes | 24 |
| 14 | PM Peak Hour Project Only Traffic Volumes | 24 |
| 15 | Existing (2018) + Project AM Peak Hour Traffic Volumes | 24 |
| 16 | Existing (2018) + Project PM Peak Hour Traffic Volumes | 24 |
| 17 | Year 2040 Baseline AM Peak Hour Traffic Volumes | 24 |
| 18 | Year 2040 Baseline PM Peak Hour Traffic Volumes | 24 |
| 19 | Year 2040 + Project AM Peak Hour Traffic Volumes | 24 |
| 20 | Year 2040 + Project PM Peak Hour Traffic Volumes | 24 |
| 21 | Existing (2018) Deficient LOS Summary | 30 |
| 22 | Existing (2018) + Project Deficient LOS Summary | 30 |
| 23 | Year 2040 Baseline Deficient LOS Summary | 34 |
| 24 | Year 2040 + Project Deficient LOS Summary | 34 |
| 25A | Existing (2018) + Project Potential Mitigation Measures (Intersections 1-12) | 47 |
| 25B | Existing (2018) + Project Potential Mitigation Measures (Intersections 13-24) | 47 |
| 25C | Existing (2018) + Project Potential Mitigation Measures (Intersections 25-28) | 47 |
| 26A | Year 2040 + Project Potential Mitigation Measures (Intersections 1-12) | 47 |

# LIST OF FIGURES (CONTINUED)


| FIGURE | | FOLLOWING PAGE |
|---|---|---|
| 26B | Year 2040 + Project Potential Mitigation Measures (Intersections 13-24) | 47 |
| 26C | Year 2040 + Project Potential Mitigation Measures (Intersections 25-28) | 47 |

**TRAFFIC IMPACT ANALYSIS FOR THE**

# GLOBEMASTER CORRIDOR SPECIFIC PLAN

**City of Long Beach, California**
**June 30, 2020**

## 1.0 INTRODUCTION

This report documents the findings of a traffic study conducted by Linscott, Law & Greenspan, Engineers (LLG) to determine and evaluate the traffic impacts associated with the Globemaster Corridor Specific Plan (GCSP) in the City of Long Beach (hereinafter referred to as "Project"). The Globemaster Corridor Specific Plan (GCSP) provides the planning and regulatory framework for guiding future development and attracting quality jobs to the approximately 437-acre GCSP area located in an area adjacent to the Long Beach Airport, I-405 Freeway and surrounding residential and business community. For the purposes of this traffic study, Year 2040 was utilized to assess full buildout of the proposed development based upon the future land use designations presumed in the GCSP. The findings from this traffic study will be included in the Environmental Impact Report (EIR) being prepared by Dudek.

This study presents an inventory of existing (2018) characteristics of the GCSP study area street network (including key intersections), public transit, and bicycle facilities; forecasts future baseline traffic volumes, and "net" Project-traffic generated by the GCSP; evaluates potential impacts of these project-generated trips on the surrounding street system assuming existing traffic conditions, and in Year 2040; and identifies additional potential mitigation measures that could alleviate deficient operations.

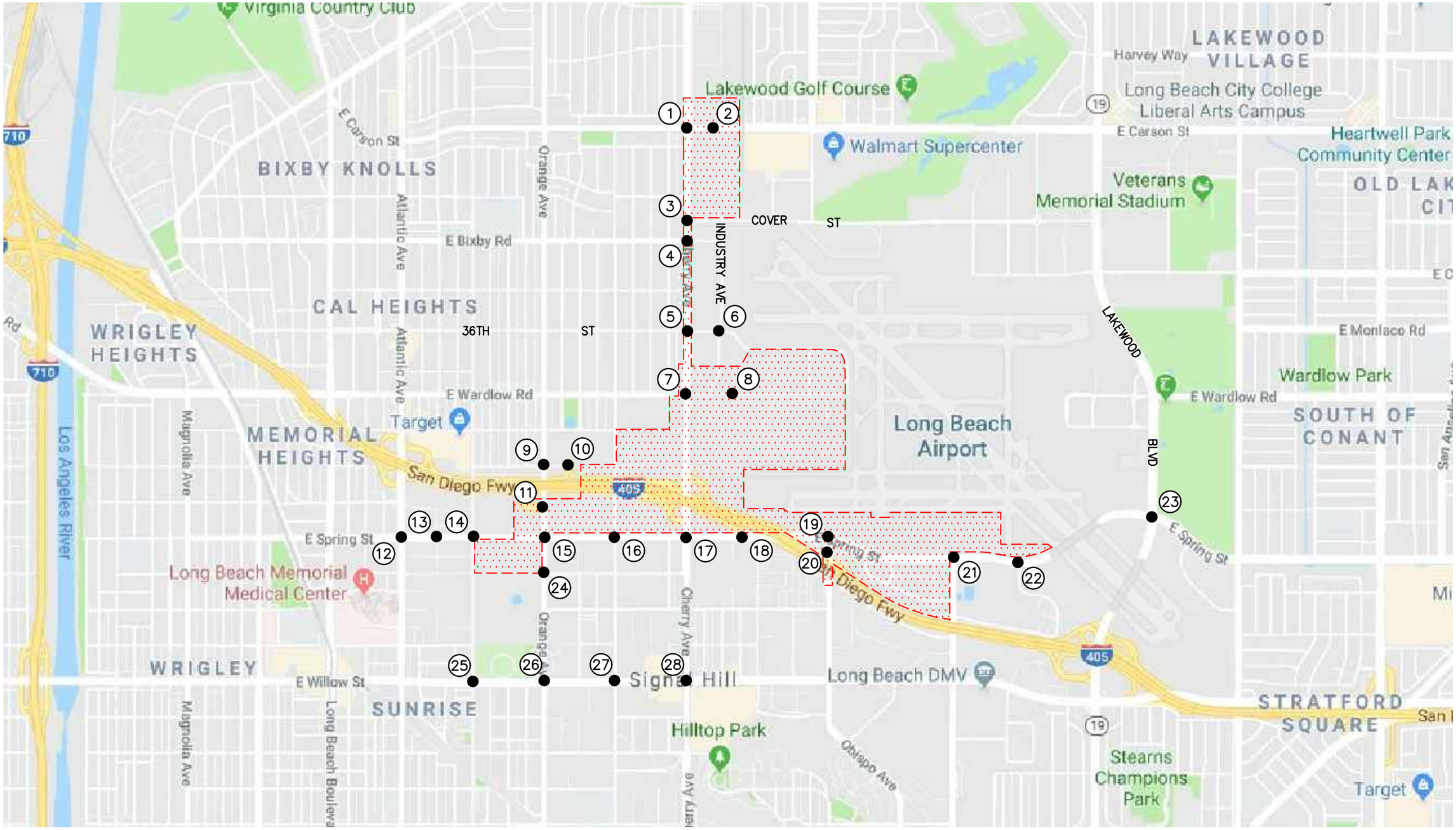
## 2.0 PROJECT SCOPE

### 2.1 Project Description

***Figure 1*** illustrates the GCSP study area, inclusive of the twenty-eight (28) key study intersections analyzed in this report. As shown, the Project is located in the central portion of the City of Long Beach, bordering the Long Beach Airport and the Cities of Lakewood and Signal Hill to the north and south, respectively.

Existing land use within the GCSP is approximately **3,503,616 SF** (square feet), and is comprised of the following uses:

- 1,563,822 SF (approximately 45% of total) of industrial uses (i.e., warehousing, distribution, storage, light manufacturing, heavy manufacturing, food processing plant)
- 530,353 SF (approximately 15% of total) of commercial and recreational uses (i.e., retail, office, club/lodge hall)
- 1,409,441 SF (approximately 40% of total) of existing vacant industrial uses (i.e. former Boeing site).

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KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

# FIGURE 1

**STUDY AREA**

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

As indicated above, industrial uses are the primary land use types that exist in the GCSP study area, totaling **2,973,263 SF**.

It should also be noted that a large portion of the existing uses (approximately 40%) is currently vacant, which was formerly occupied by Boeing. Therefore, the total existing land use within the GCSP area that is currently occupied is approximately **2,094,175 SF**. This total existing occupied square-footage is used as the basis for generating the "net" proposed Project trips within the GCSP study area. ***Figure 2*** illustrates the Globemaster Corridor Specific Plan Existing Land Use Map.

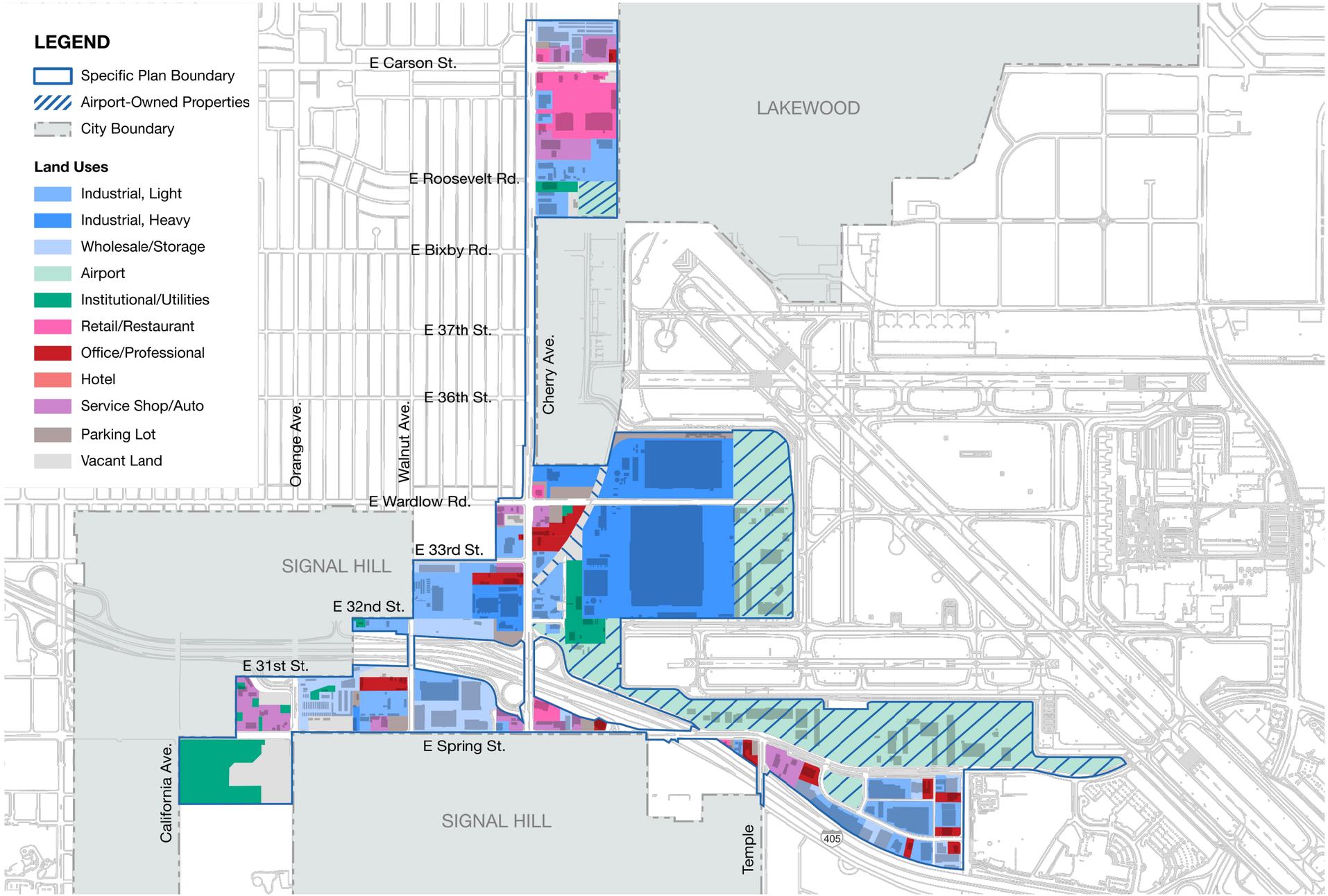
The proposed land use designations within the most current Globemaster Corridor Specific Plan (GCSP) totals approximately **7,011,195 SF**, and is comprised of the following uses:

- 1,770,539 SF (approximately 25.3% of total) of General Office uses
- 127,992 SF (approximately 1.8% of total) of Medical Office uses
- 234,650 SF (approximately 3.4% of total) of Research and Development (R&D) office uses
- 1,046,952 SF (approximately 14.9% of total) of Manufacturing uses
- 2,652,640 SF (approximately 37.8% of total) of Light Industrial/Warehousing/Storage uses
- 468,112 SF (approximately 6.7% of total) of High-Cube Cold Storage Warehouse uses
- 458,015 SF (approximately 6.5% of total) of Retail uses
- 37,015 SF (approximately 0.5% of total) of High-turnover (Sit-down) Restaurant uses
- 7,636 SF (approximately 0.1% of total) of Quality Restaurant uses
- 11,177 SF (approximately 0.2% of total) of Fast-food Restaurant uses
- 33,524 SF (approximately 0.5% of total) of Fast Casual Restaurant uses
- 162,943 SF (approximately 2.3% of total) Hotel uses (332 Rooms)

Comparing the Buildout projections for the proposed land use designations of 7,011,195 SF against the 2,904,175 SF of existing industrial and commercial uses results in an increase of approximately **4,107,020 SF**. It is important to note that the proposed land use designations and the incremental trips that they could generate beyond the existing land use within the GCSP, correspond to the "Project" evaluated in this traffic impact study. ***Figure 3*** illustrates the Globemaster Corridor Specific Plan Proposed Land Use Map.

## 2.2 Study Scope

The work scope for this traffic impact study, including the base assumptions, technical methodologies, and geographic coverage, were developed in conjunction with City staff, and are in accordance with the most current *2010 Congestion Management Program (CMP) for Los Angeles County* and the City's traffic study guidelines.

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SOURCE: DUDEK

KEY

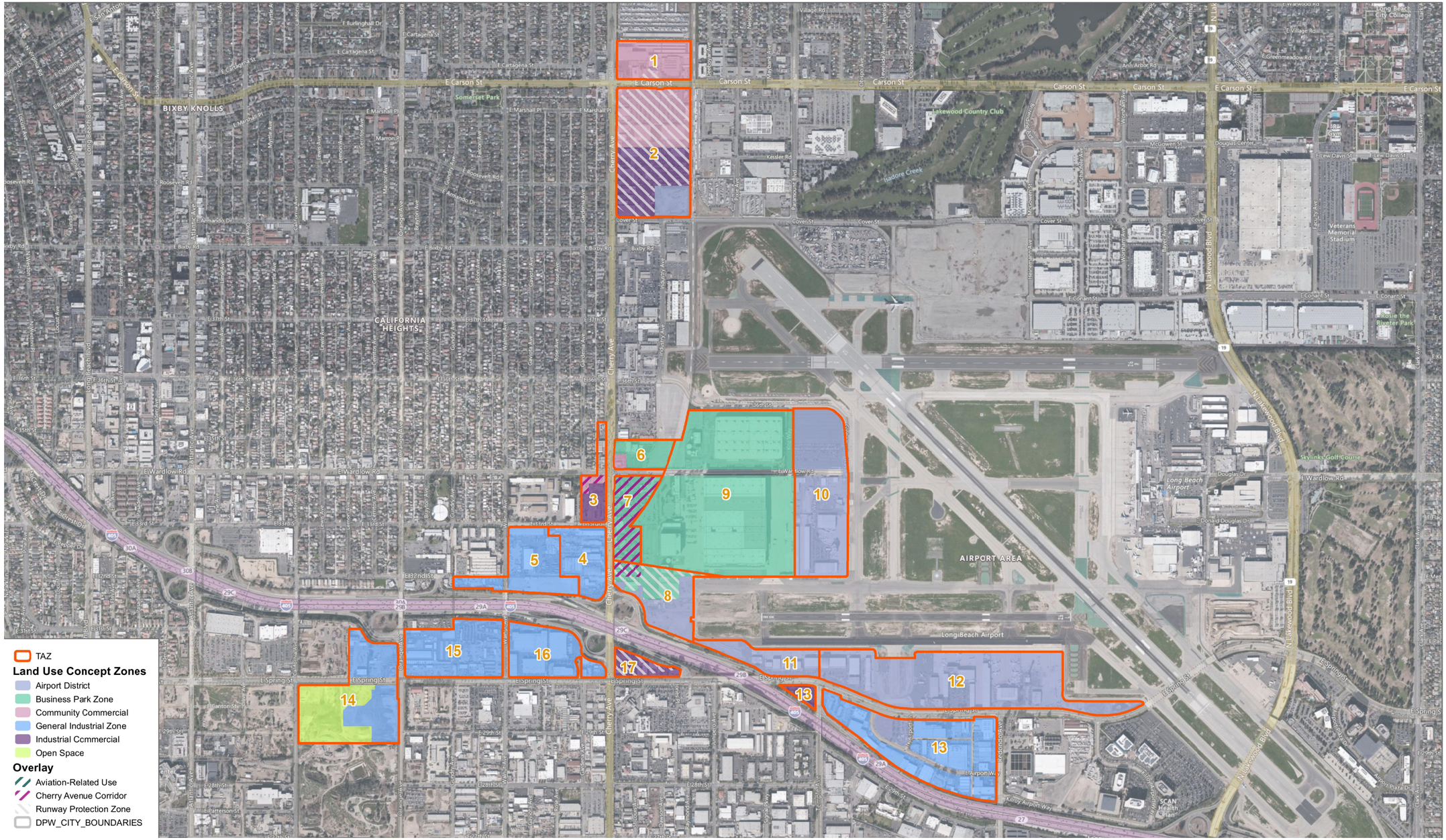
(#) = STUDY INTERSECTION

= PROJECT SITE

# FIGURE 2

## GLOBE MASTER CORRIDOR EXISTING LAND USE MAP

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

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SOURCE: DUDEK

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# FIGURE 3

## GLOBE MASTER CORRIDOR PROPOSED LAND USE MAP

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

As illustrated on *Figure 1*, a total of 28 key intersections were selected for detailed peak hour traffic impact/level of service analysis during the weekday AM and PM peak hours under each of the four traffic scenarios described below. The 28 study intersections are located in the City of Long Beach and City of Signal Hill. Eight (8) study intersections are located in the City of Long Beach, four (4) study intersections are located in the City of Signal Hill, one (1) study intersection is located in the City of Lakewood, eight (8) study intersections are located at the boundary between the Cities of Long Beach and Signal Hill, three (3) study intersections are located at the boundary between the Cities of Long Beach and Lakewood, and four (4) study intersections are freeway ramp intersections under Caltrans' jurisdiction.

Traffic impact analyses are typically focused on evaluating traffic operations during the morning and evening commute peak hours (7:00 to 9:00 AM, and 4:00 to 6:00 PM) on a typical weekday because these are generally when the busiest traffic conditions occur.

The following four traffic scenarios are addressed in the study:

- **Existing (2018)** - The analysis of existing traffic conditions is intended to provide a base of analysis for the remainder of the study. The existing conditions analysis includes an assessment of the streets in the area, current traffic volumes, and operating conditions.

- **Existing (2018) Plus Project** - This phase of analysis adds "net" project-generated forecasts to existing conditions. Any potential traffic impacts will be determined, and additional improvement measures to address the deficiencies will be identified.

- **Year 2040 Baseline** - This phase of analysis projects future traffic growth and operating conditions in the Year 2040 (anticipated completion year for the Project) which could be expected to result from regional growth without the addition of project traffic.

- **Year 2040 plus Project** - This is an analysis of future traffic conditions in the Year 2040 (anticipated completion year for the Project) with the addition of "net" project-generated traffic. Any potential traffic impacts will be determined, and mitigation measures developed.

To address Caltrans study requirements, all freeway on/off-ramp intersections were evaluated by applying the *Highway Capacity Manual* (HCM) Signalized Methodology and Unsignalized Methodology for calculating levels of service.

Per the CMP traffic impact analysis criteria, a freeway analysis must be conducted at "mainline freeway-monitoring stations where the Project will add 150 or more trips, in either direction, during the AM or PM weekday peak hours." A total of 5 CMP freeway mainline monitoring stations were evaluated in this study.

# 3.0 EXISTING CONDITIONS

## 3.1 Existing Street System

A comprehensive inventory of the street system within the study area was undertaken to develop a detailed description of existing traffic conditions.

***Figure 4*** illustrates the existing physical characteristics of the key intersections and streets, including intersection geometry and traffic control, number of travel lanes, median type, parking designations, and posted speed limits.

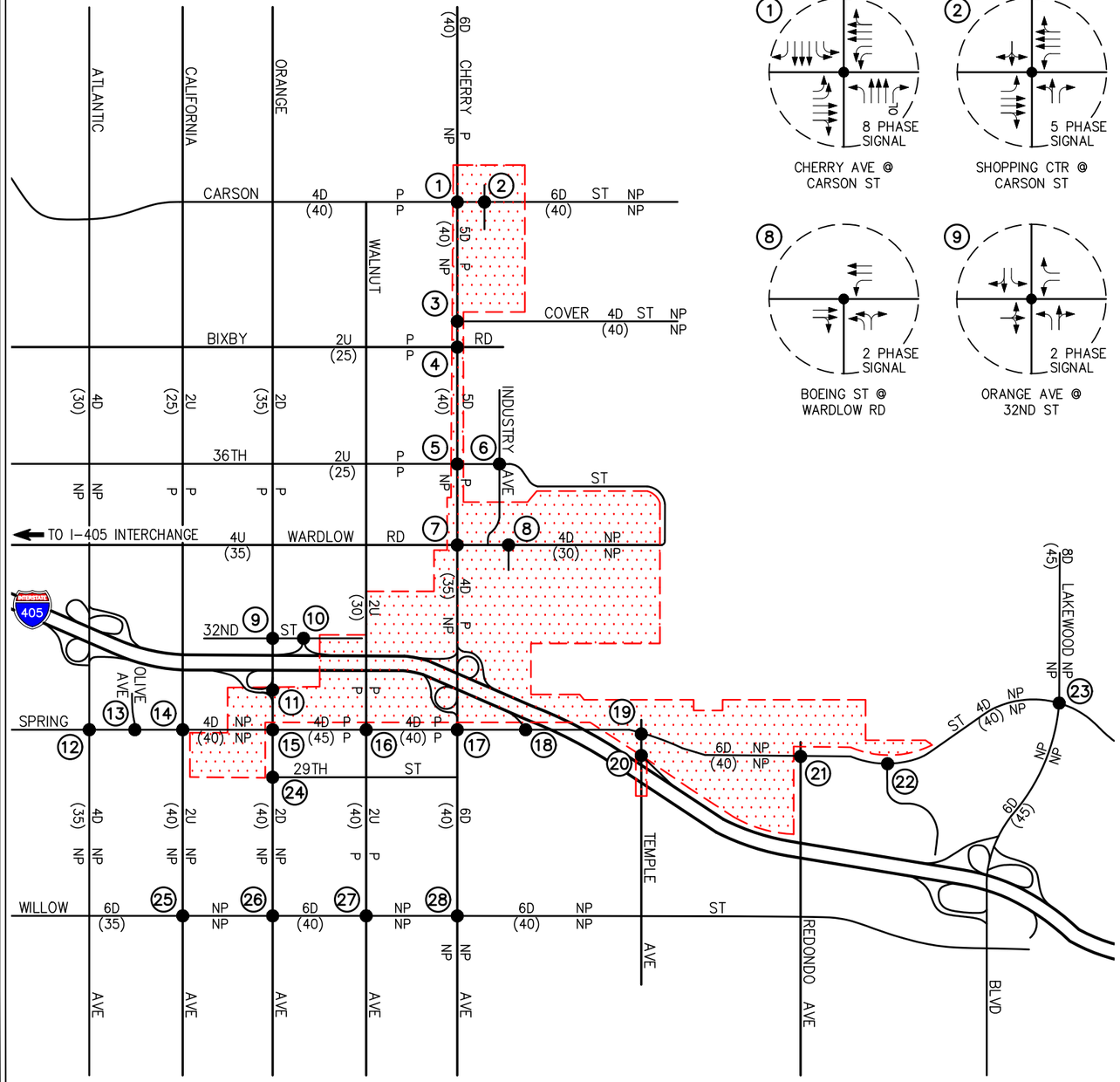
In accordance with the GCSP and consistent with the City of Long Beach General Plan Mobility Element, streets are classified as a Regional Corridor, Boulevard, Major Avenue, Minor Avenue Neighborhood Connector or Local Street according to their respective functions based upon the type of service they provide. Streets that have a relatively greater mobility function and/or regional purpose will have more lanes, higher speed limits, and fewer access points/driveways. Streets serving more localized functions will have fewer lanes, slower speeds, and frequent side streets and driveways serving adjoining land use. ***Figure 5*** illustrates the existing street classifications for the existing street network within and around the plan area provided in the City of Long Beach General Plan Mobility Element.

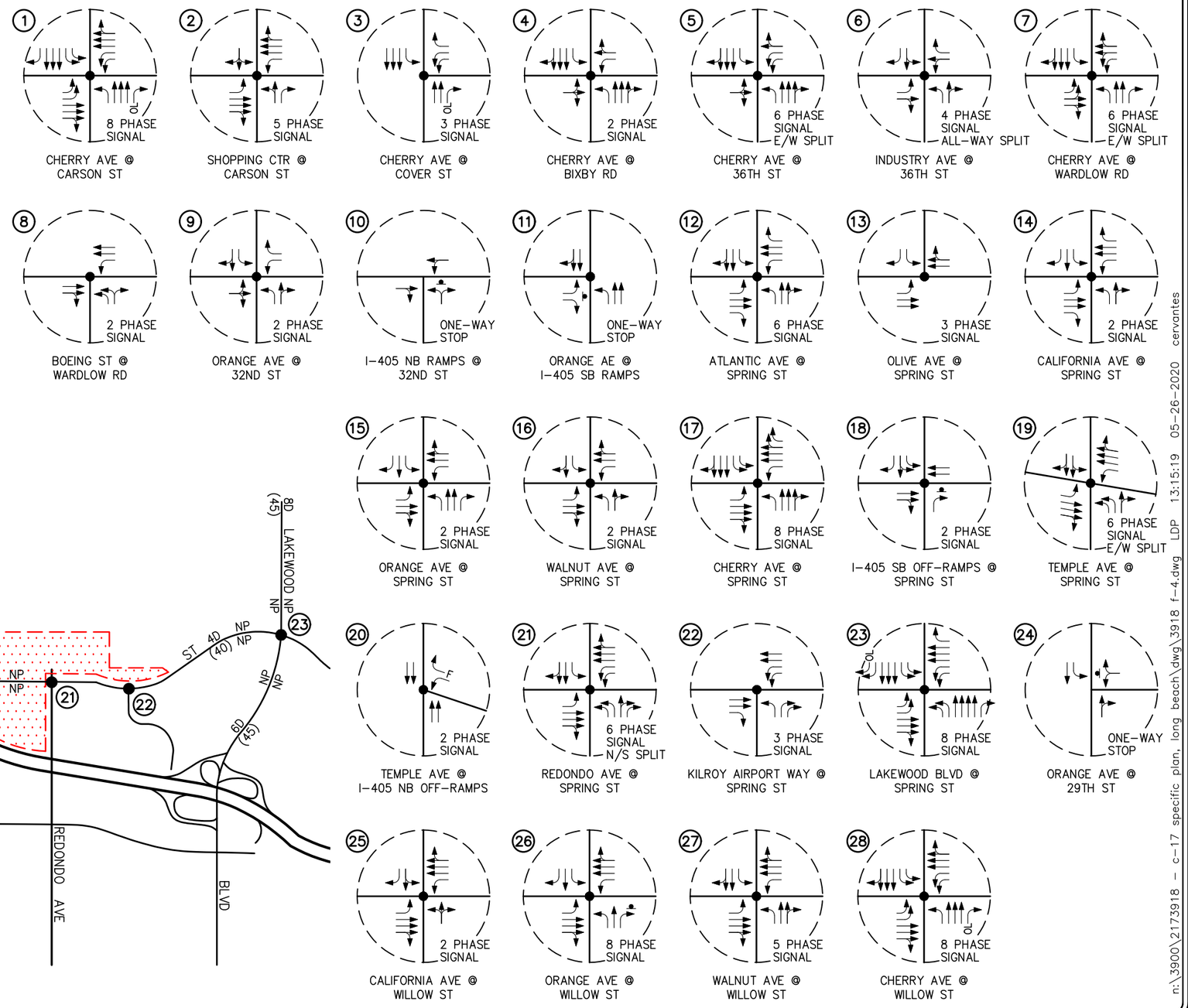
The principal local network of streets serving the project site includes Lakewood Boulevard, Willow Street, Cherry Avenue, Carson Street, Atlantic Avenue, Spring Street, Wardlow Road, Orange Avenue, Cover Street, Bixby Road, 32nd Street, 36th Street, and Walnut Avenue. The following discussion provides a brief synopsis of these key area streets. The descriptions are based on an inventory of existing roadway conditions.

**Lakewood Boulevard** is generally an eight-lane roadway south of Conant Street and a six-lane roadway north of Conant Street oriented in the north–south direction and is located east of the project site and airport. On-street parking is not permitted on both sides of the street. Sidewalks are generally provided on both sides of the roadway within the project's vicinity. The posted speed limit on Lakewood Boulevard is 45 mph. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Lakewood Boulevard as a Regional Corridor.

**Willow Street** is generally a six-lane divided roadway oriented in the east-west direction and provides connectivity between Atlantic Avenue and Lakewood Boulevard within the vicinity of the project site. On-street parking is generally not permitted on either side of the roadway within the vicinity of the project. The posted speed limit on Willow Street is 40 mph. Sidewalks are generally provided on both sides of the roadway within the projects vicinity. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Willow Street as a Boulevard.

**Cherry Avenue** is generally a four-lane divided roadway between Wardlow Road and Spring Street, a five-lane divided roadway north of Wardlow Road and a six-lane divided roadway south of Spring Street, oriented in the north–south direction that traverses through the middle of the project site. On-street parking is permitted on both sides of the street. Multiple driveways are located along Cherry Avenue, which provides full access to the existing businesses. The posted speed limit on Cherry Avenue is 40 mph north of Wardlow Road, 35 mph between Wardlow Road and Spring Street, and 40 mph south of Spring Street. Sidewalks are generally provided and are adequate north of Wardlow Road. However, south of Wardlow Road sidewalks are generally located on one side of the road or

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**KEY**

(#) = STUDY INTERSECTION
= APPROACH LANE ASSIGNMENT
● = TRAFFIC SIGNAL, ▾ = STOP SIGN
P = PARKING, NP = NO PARKING
U = UNDIVIDED, D = DIVIDED
2 = NUMBER OF TRAVEL LANES
(XX) = POSTED SPEED LIMIT (MPH)
OL = OVELAP
F = FREE-RIGHT
= PROJECT SITE

# FIGURE 4

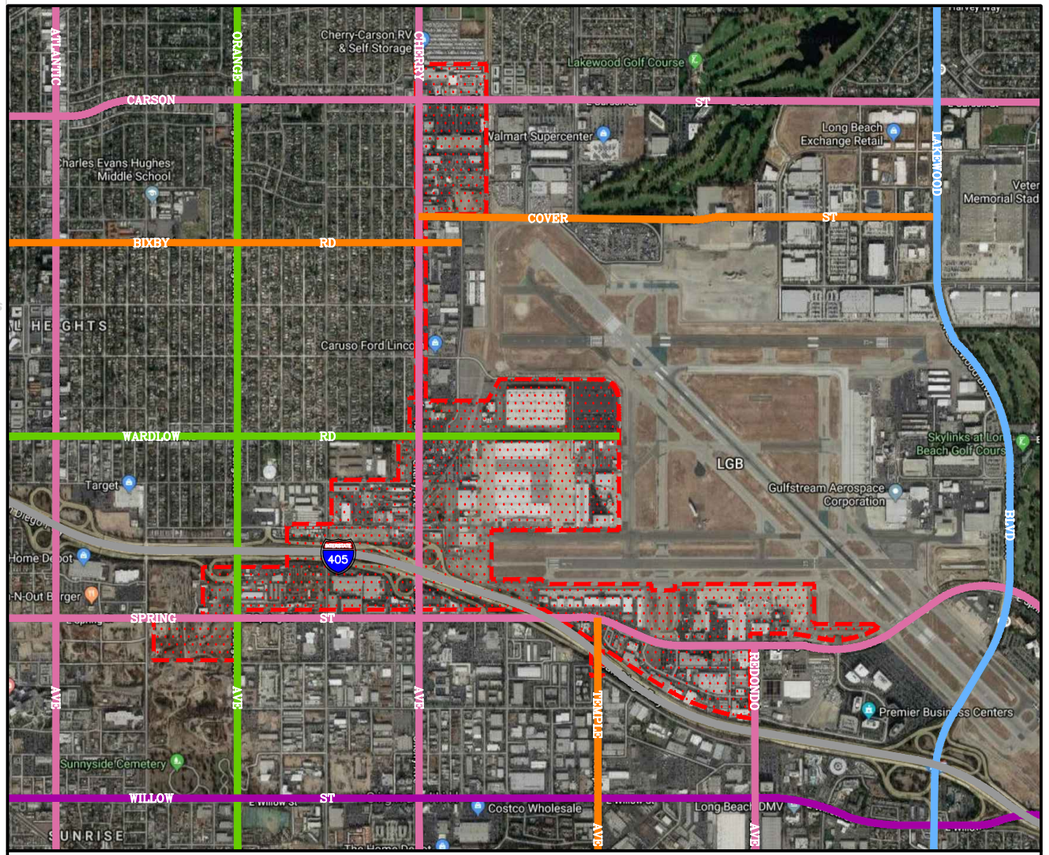
## EXISTING ROADWAY CONDITIONS AND INTERSECTION CONTROLS

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

## Legend

**Classifications**

- Freeway
- Regional Corridor
- Boulevard
- Major Avenue
- Minor Avenue
- Neighborhood Connector
- Scenic Route
- Local Street
- Port-Related Street




ENLARGED STUDY AREA

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SOURCE: CITY OF LONG BEACH GENERAL PLAN MOBILITY ELEMENT

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# FIGURE 5

**EXISTING STREET CLASSIFICATIONS**

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

missing altogether. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Cherry Avenue as a Major Avenue.

**Carson Street** is a four-lane divided roadway west of Cherry Avenue and a six-lane divided roadway east of Cherry Avenue. Carson Street is oriented in the east–west direction and provides connectivity from Atlantic Avenue to Lakewood Boulevard within the vicinity of the project site. On-street parking is not permitted on both sides of the street east of Cherry Avenue, but is permitted on both sides of the street west of Cherry Avenue within the vicinity of the project site. The posted speed limit on Carson Street is 40 miles per hour (mph). Sidewalks are generally provided on both sides of the roadway within the projects vicinity. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Cover Street as a Major Avenue.

**Atlantic Avenue** is a four-lane, divided roadway oriented in the north-south direction and provides connectivity west of the project site. The posted speed limit is 35 mph south of Spring Street and 30 mph north of Spring Street. Parking is generally not permitted on both sides of the roadway within the vicinity of the project. Sidewalks are generally provided on both sides of the roadway within the projects vicinity. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Lakewood Boulevard as a Major Avenue.

**Spring Street** is generally a four-lane divided roadway west of Temple Avenue and a six-lane divided roadway east of Temple Avenue, oriented in the east-west direction and provides connectivity between Atlantic Avenue and Lakewood Boulevard within the vicinity of the project site. On-street parking is not permitted on either side of the roadway west of Orange Avenue, but is permitted on both sides of the roadway east of Orange Avenue until Junipero Avenue within the vicinity of the project. The posted speed limit on Spring Street is generally 40 mph. Sidewalks are generally provided and are adequate west of Cherry Avenue. However, east of Cherry Avenue sidewalks are generally located on one side of the road or missing altogether. Crosswalks are generally provide at all signalized intersections. The City's Mobility Element designates Spring Street as a Major Avenue.

**Wardlow Road** is a four-lane undivided roadway west of Cherry Avenue and a four-lane divided roadway east of Cherry Avenue. Wardlow Road provides east–west connectivity between Cherry Avenue and Walnut Avenue. Wardlow Road also extends to the eastern portion of the project site and terminates at the airport. However, Wardlow Road continues just east of the Lakewood Boulevard. On-street parking is generally permitted on both sides of the street west of Cherry Avenue. The posted speed limit on Wardlow Road is 35 mph west of Cherry Avenue and 30 mph east of Cherry Avenue. Sidewalks are generally provided on both sides of the roadway within the projects vicinity. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Wardlow Road as a Minor Avenue.

**Orange Avenue** is a two-lane, divided roadway oriented in the north-south direction that traverses through the south-western portion of the project site. The posted speed limit is 35 mph north of Spring Street and 40 mph south of Spring Street. On-street parking is generally not permitted on

both sides of the roadway, except north of 32nd Street where parking is permitted within the vicinity of the project. Sidewalks are generally provided and are adequate north of Spring Street. However, south of Spring Street sidewalks are generally located on one side of the road or missing altogether. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Orange Avenue as a Minor Avenue.

**Cover Street** is generally a four-lane divided roadway oriented in the east–west direction and provides connectivity between Cherry Avenue and Lakewood Boulevard. Cover Street is partially located in the City of Lakewood. On-street parking is not permitted on both sides of the street. The posted speed limit on Cover Street is 40 mph. Sidewalks are generally provided on both sides of the roadway within the projects vicinity. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Cover Street as a Neighborhood Connector.

**Bixby Road** is generally a two-lane undivided roadway oriented in the east–west direction and provides connectivity between west of Cherry Avenue. On-street parking is permitted on both sides of the street. The posted speed limit on Bixby Road is 25 mph. Sidewalks are generally provided on both sides of the roadway within the projects vicinity. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Cover Street as a Neighborhood Connector.

**32nd Street** is a two-lane undivided roadway oriented in the east–west direction. In direct proximity to the site, 32nd Street consists of an alleyway that traverses the project. Along this alleyway, multiple gated areas restrict through-traffic to some users. The posted speed limit on 32nd street is 25 mph. Sidewalks are generally provided and are adequate west of Orange Avenue. However, east of Orange Avenue sidewalks are generally located on one side of the road or missing altogether. Crosswalks are generally provide at all signalized intersections. The City's Mobility Element designates 32nd Street as a Local Street.

**36th Street** is a two-lane undivided roadway oriented in the east-west direction and provides connectivity between Cherry Avenue and Walnut Avenue. 36th Street also extends to the eastern portion of the project site and terminates at the airport. On-street parking is generally permitted on both sides of the street. The posted speed limit on 36th Street is 25 mph. Sidewalks are generally provided on both sides of the roadway within the projects vicinity. Crosswalks are generally provide at all signalized intersections. The City's Mobility Element designates 36th Street as a Local Street.

**Walnut Avenue** is generally a two-lane undivided roadway oriented in the north–south direction and provides access to the site via multiple full-access driveways. On-street parking is permitted on both sides of the street. The posted speed limit on Walnut Avenue is 30 mph north of Spring Street and 40 mph south of Spring Street. Sidewalks are generally provided and are adequate north of 33rd Street. However, south of 33rd Street sidewalks are generally located on one side of the road or missing altogether. Crosswalks are generally provided at all signalized intersections. The City's Mobility Element designates Walnut Avenue as a Local Street.

## 3.2 Existing Truck Routes

***Figure 6***, Existing Truck Routes, shows the designated truck routes in the City. Designated truck routes provide for the regulated movement of truck traffic through the City, and minimizes intrusion of truck traffic in sensitive areas, such as residential neighborhoods. The designation of truck routes are intended to direct truck traffic to those streets where they would cause the least amount of neighborhood intrusion and where noise, vibration, and other factors would have the least impact. Primary truck routes in close proximity to the project site are provided via Cherry Avenue, Lakewood Boulevard, Carson Street, Spring Street, Willow Street, and Orange Avenue. Regional freeway access is primarily provided at the Cherry Avenue/I-405 interchange.

## 3.3 Existing Public Transit

The Long Beach Transit (LBT) provide public transit services in the vicinity of the proposed Project. In the vicinity of the Project, LBT Route 131 currently serves Spring Street and Wardlow Road. LBT Routes 102 and 104 currently serve Willow Street. LBT Routes 102, 104, 111, 112 and 176 currently serve Lakewood Boulevard. LBT Routes 21, 22, and 131 currently serve Cherry Avenue. LBT Route 71 currently serves Orange Avenue. LBT Routes 61, 101, and 103 currently serve Atlantic Boulevard and Carson Street. ***Figure 7*** graphically illustrates the transit routes of Long Beach Transit within the vicinity of the Project site and identifies the location of the existing bus stops in proximity to the Project site.

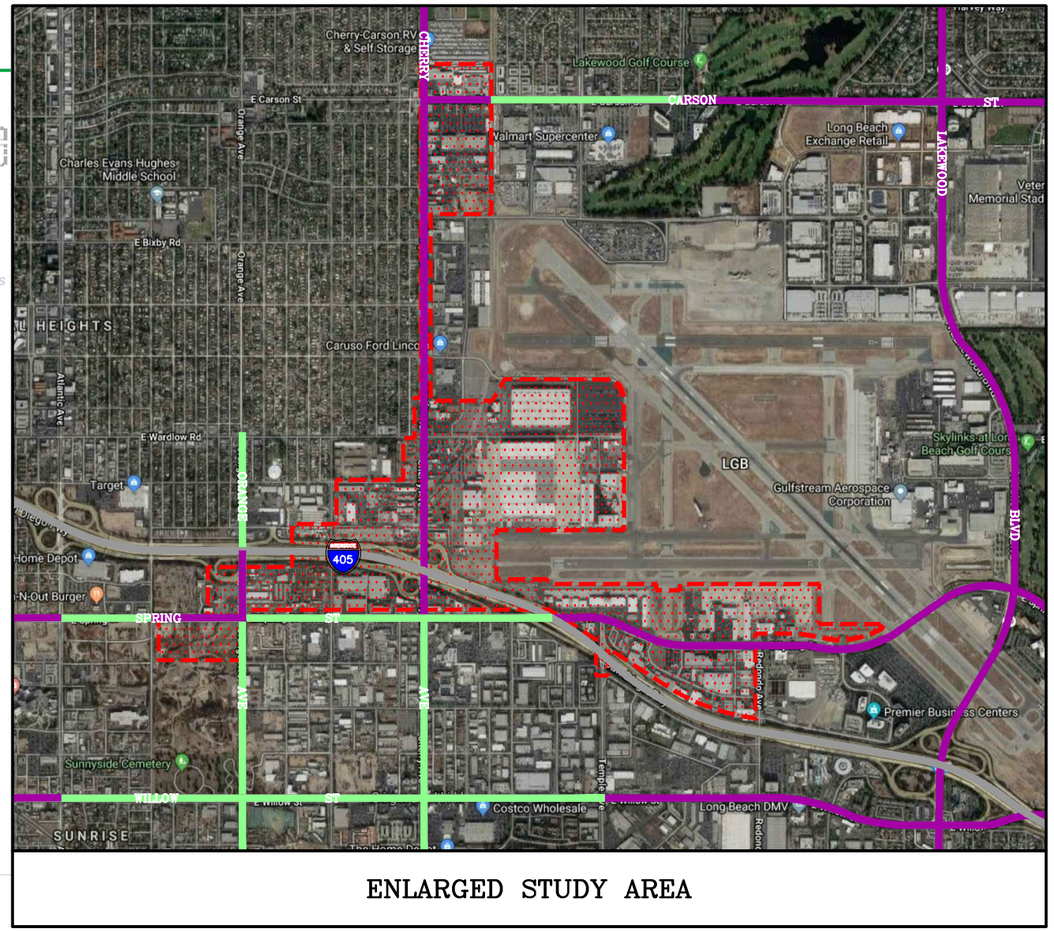
## 3.4 Existing Bicycle Master Plan

The City of Long Beach promotes bicycling as a means of mobility and a way in which to improve the quality of life within its community. The Bicycle Master Plan (Year 2040) recognizes the needs of bicycle users and aims to create a complete and safe bicycle network throughout the City. Per the City of Long Beach Bicycle Master Plan (Year 2040), the following provides a brief description of each Bicycle facility type:

Class I (Shared-Use Paths) are "8-to-80" facilities that provide completely separated, exclusive right-of-way for bicycling, walking, and other non-motorized uses. These facilities can be considered the easiest to ride on, especially for the interested but concerned riders, as there are few potential conflicts between people riding and people driving. Long Beach currently has 34.7 miles of shared-use path (Class I) facilities.

Class II (Bicycle Lanes) are striped, preferential lanes on roadways for one-way bicycle travel. Some bike lanes include striped buffers that add a few feet of separation between the bicycle land and traffic lane or parking aisle. These facilities are also important for the overall bikeway network Long Beach strives to achieve in that they provide a designated space for riders along a roadway. Long Beach currently has nearly 60 miles of road with bike lanes.

Class III-A (Bicycle Boulevards) are on-street "8-to-80" bicycle facilities along low-speed roadways. These routes have been optimized for bicycle travel through signage, shared-lane markings, and engineering tools to slow traffic, reduce cut-through vehicle trips, and assist bicyclists




ENLARGED STUDY AREA

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SOURCE: CITY OF LONG BEACH GENERAL PLAN MOBILITY ELEMENT

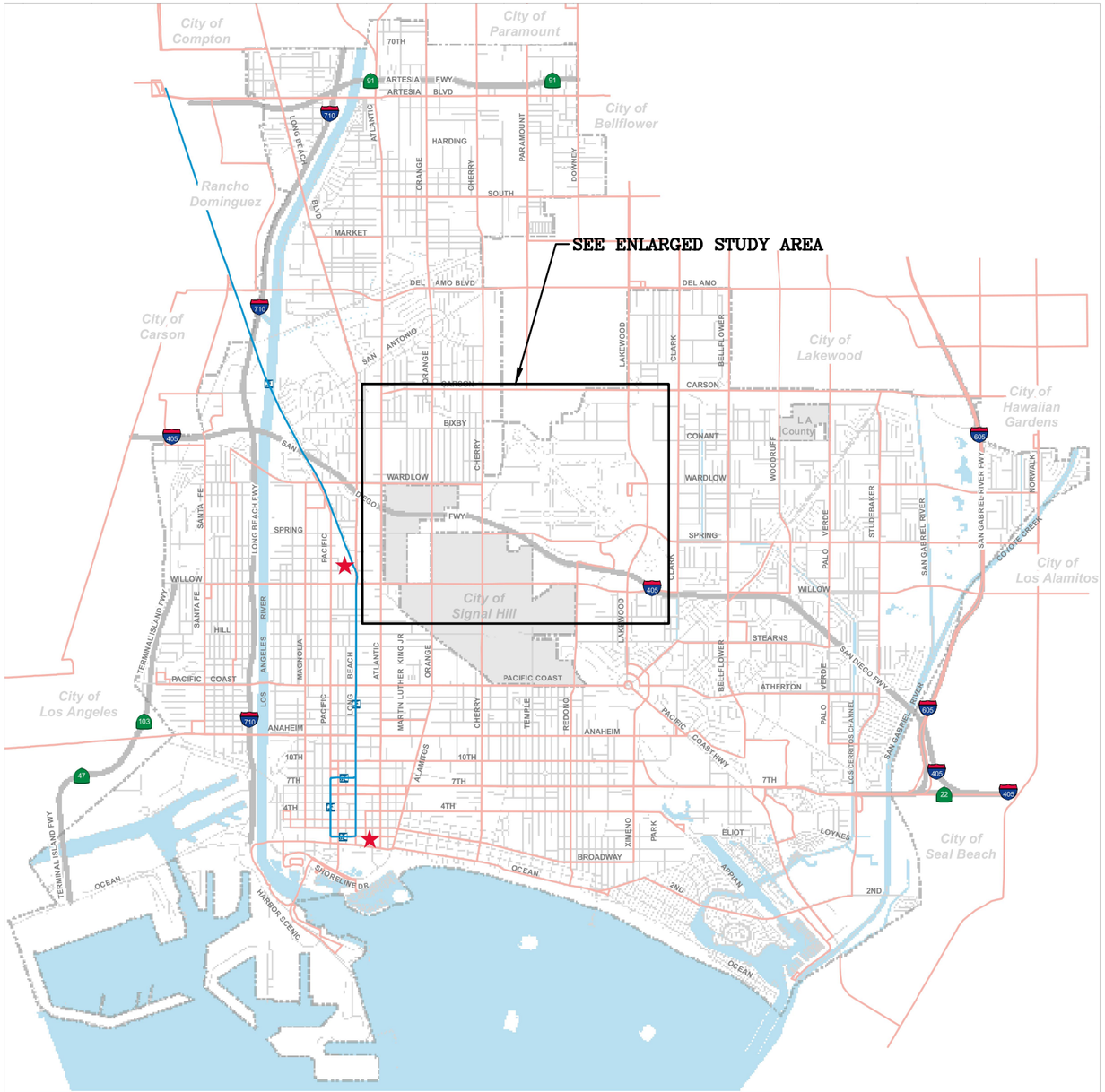
LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

# FIGURE 6

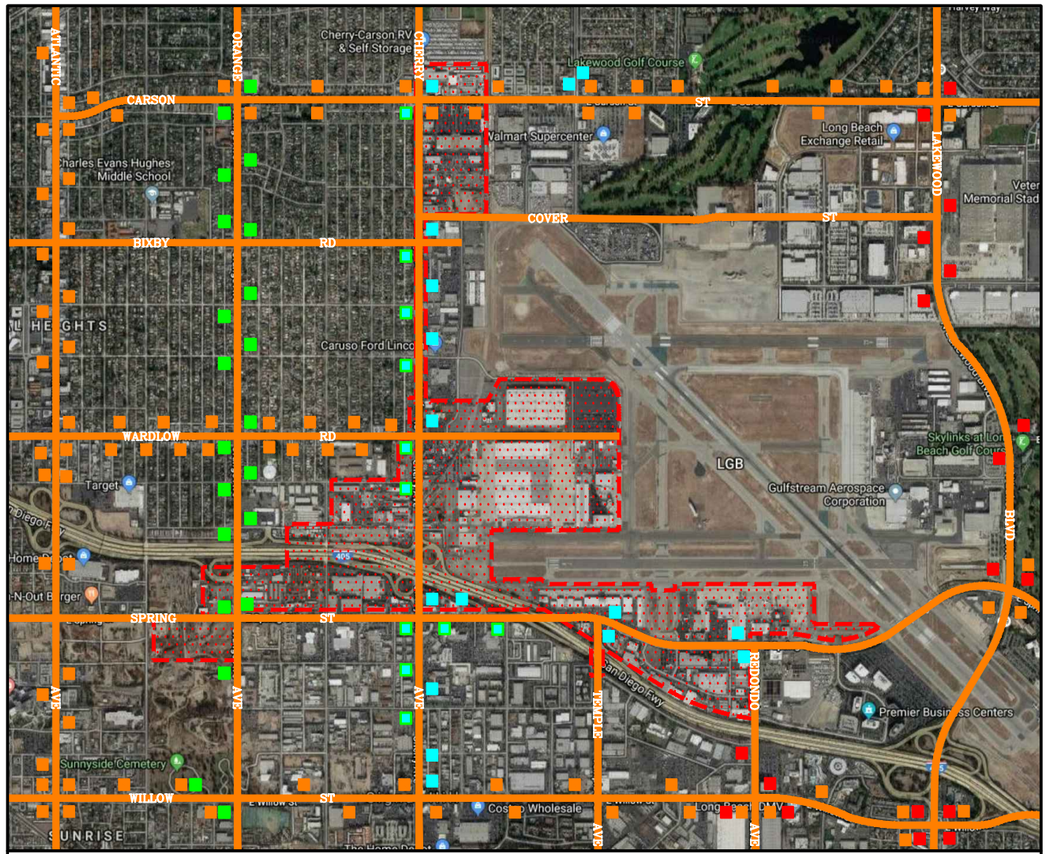
## EXISTING TRUCK ROUTES

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH




## Legend

- Metro Rail Stations
- Metro Rail
- Bus Routes (includes LB Transit, Metro, and OCTA)
- Multimodal Hub
- **Bus Stops Routes: 21 – 23**
- **Bus Stops Routes: 61, 101–104, 131**
- **Bus Stops Routes: 71**
- **Bus Stops Routes: 111–112, 176**




ENLARGED STUDY AREA

SOURCE: CITY OF LONG BEACH GENERAL PLAN MOBILITY ELEMENT

LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

# FIGURE 7

## EXISTING LOCAL TRANSIT ROUTES

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

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and pedestrians in crossing busier roadways. Long beach currently has a single, 1.5 miles of bicyle boulevard along Vista Street.

Class IV (Separated Bikeways), also known as a cycle track or Class IV bikeway, is an on-street "8-to-80" facility that is physically separated from motor vehicle traffic by a vertical element or barrier, such as a curb, bollards, or vehicle parking aisle are signed routes where people riding bicycles share a travel lane with people driving motor vehicles. Long Beach currently has 4.4 miles of separated bikeway facilities.

Within close proximity to the Project site, a Class II bike lane is currently provided along Orange Avenue, north of Bixby Road, along Cover Street, west of Paramount Boulevard, along Bixby Road, west of Cherry Avenue, along Carson Street, west of Orange Avenue, along Wardlow Road, east of Lakewood Boulevard, and along Spring Street, between Long Beach Boulevard and California Avenue. A Class III-C bike route is currently provided along Orange Avenue, between Bixby Road and Wardlow Road. An "8-to-80" off-street bikeway is currently provided along Cover Street, east of Paramount Boulevard, and along Carson Street, east of Downey Avenue. ***Figure 8A*** illustrates the existing City of Long Beach bicycle network map.

According to the City of Long Beach public Works Department, a Class IV bikeway is proposed Spring Street, converting the no. 3 lane on either side of the roadway into a dedicated bikeway. Additionally, the construction of a bikeway along Orange Avenue, between Ocean Boulevard and 70th Street, is proposed and funded.

The Long Beach Bicycle Master Plan (Year 2040) identifies Cherry Avenue, Orange Avenue, Lakewood Boulevard, Carson Street, Bixby Road, Wardlow Road, Spring Street and Willow Street as recommended "8-to-80" bikeways, meaning that it should be designed to comfortably and safely serve cyclists of all ages[1]. ***Figure 8B*** illustrates the existing and proposed "8-to-80" bikeway facilities.

## 3.5 Existing Volumes

Traffic counts were conducted at the 28 key intersections during the weekday AM and PM peak period (7:00 to 9:00 AM, 4:00 to 6:00 PM) in May 2018 (while school was still in session).

As discussed previously, approximately 1,409,441 SF of existing vacant industrial uses (i.e. former Boeing site) was not occupied on the dates that traffic counts were conducted. To address this, existing trip credits were not accounted for the 1,409,441 SF of existing vacant industrial uses in the proposed Project's trip generation potential to provide a conservative assessment.

***Figures 9*** through ***10*** illustrate the existing weekday AM and weekday PM peak hour traffic volumes at the 28 key intersections, respectively.

[1] City of Long Beach Bicycle Master Plan (Year 2040), Figure 6-5, page 73, February 2017.

SOURCE: CITY OF LONG BEACH BICYCLE MASTER PLAN (FEBRUARY 2017)

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N NO SCALE

# FIGURE 8A

## EXISTING (YEAR 2018) BICYCLE FACILITIES

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

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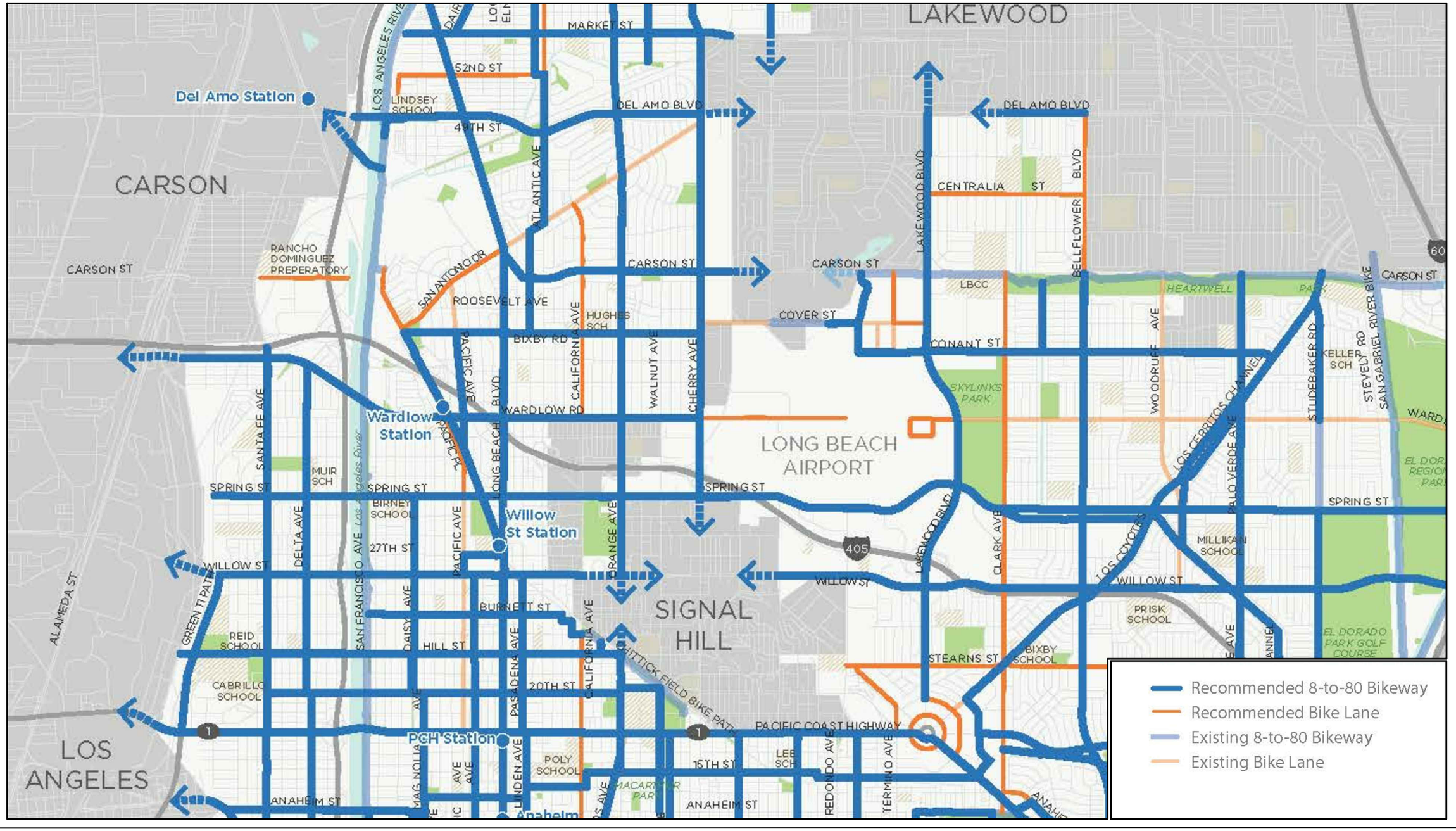


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SOURCE: CITY OF LONG BEACH BICYCLE MASTER PLAN (FEBRUARY 2017)

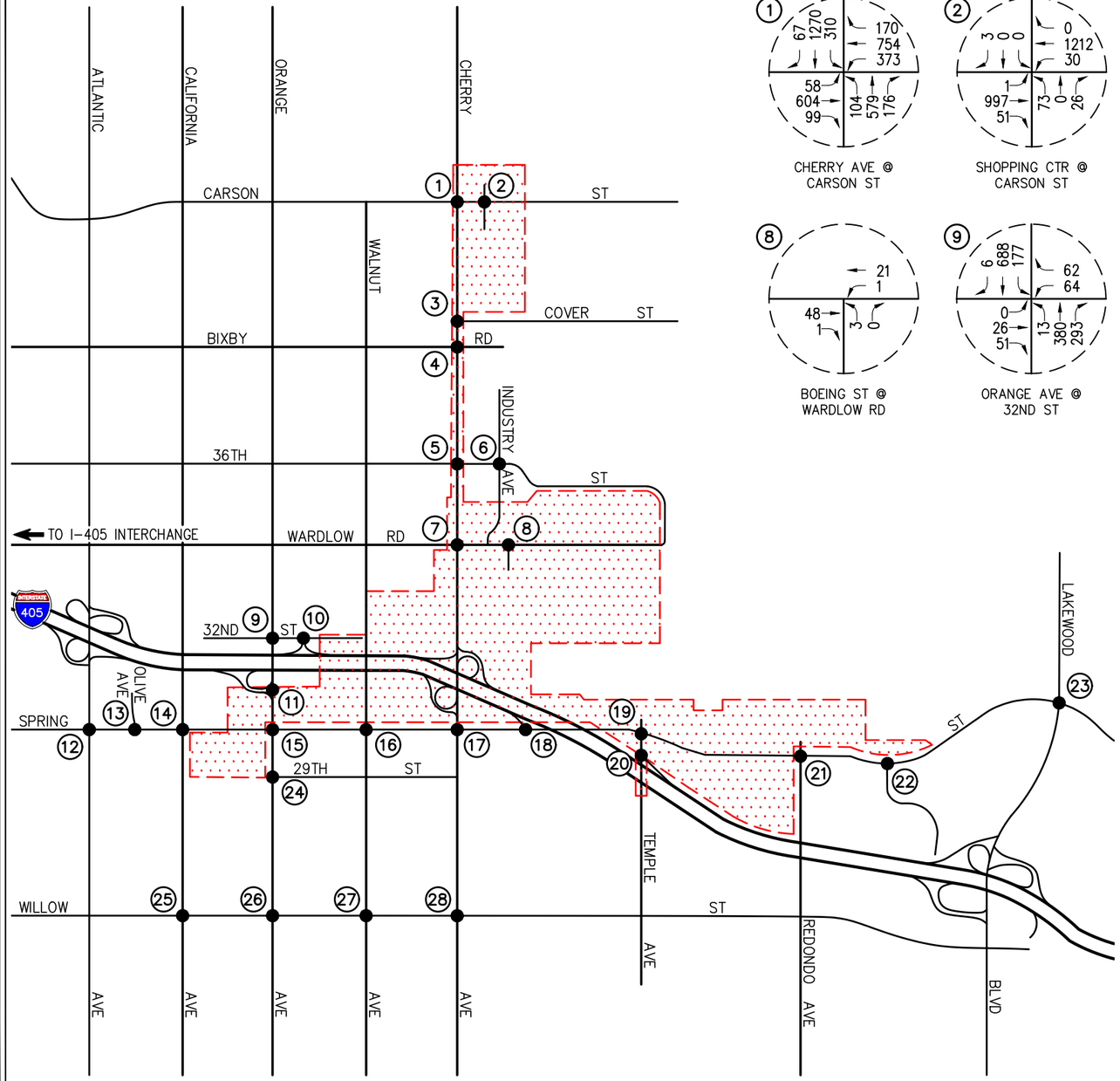
LINSCOTT LAW & GREENSPAN engineers

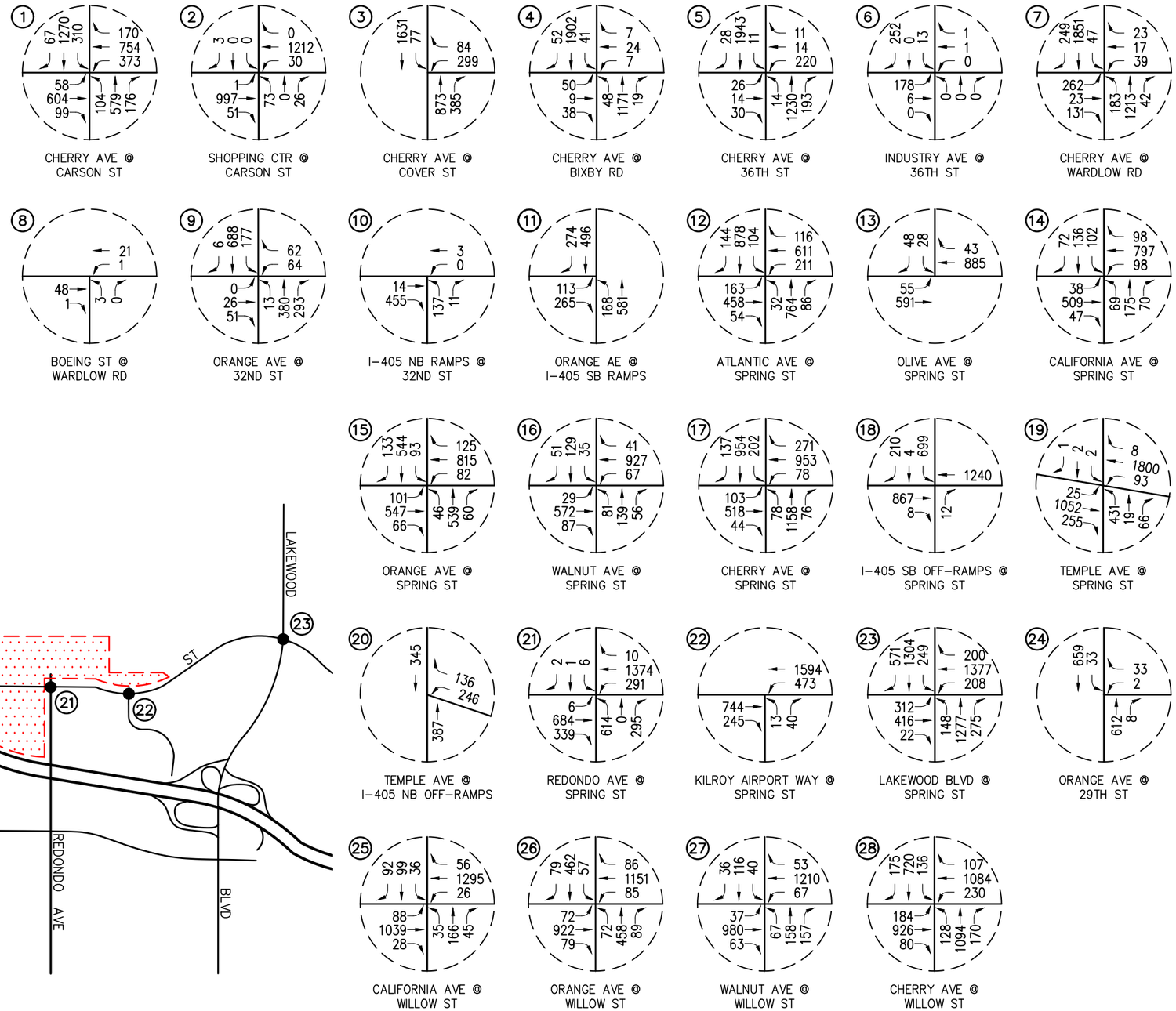
N NO SCALE

# FIGURE 8B

## EXISTING AND PROPOSED "8-TO-80" BICYCLE FACILITIES

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

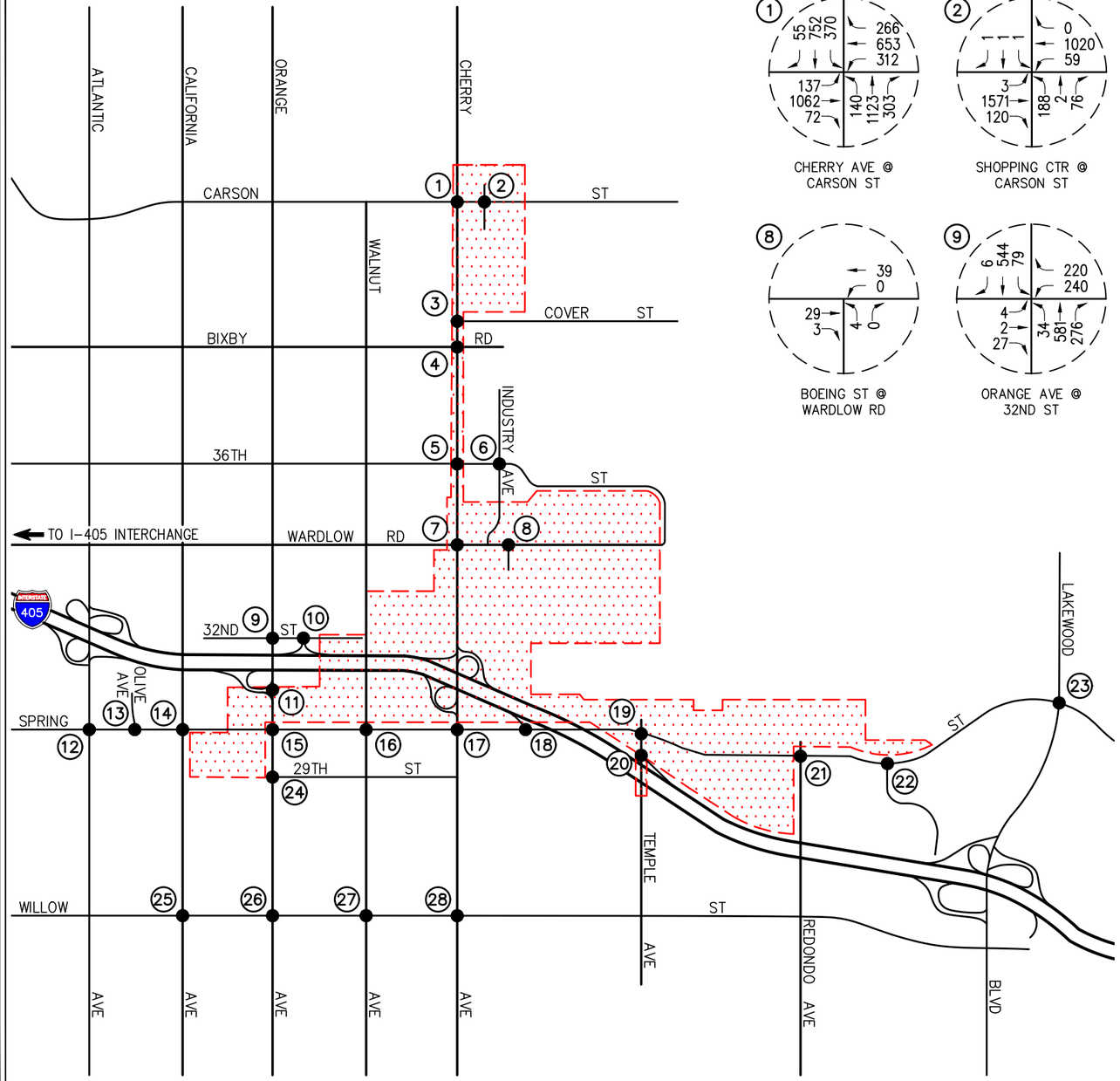
(#) = STUDY INTERSECTION

= PROJECT SITE

# FIGURE 9

## EXISTING (YEAR 2018) AM PEAK HOUR TRAFFIC VOLUMES

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

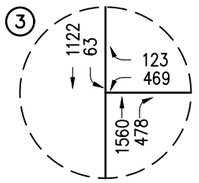




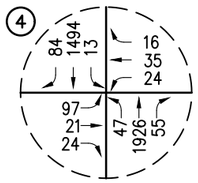

CHERRY AVE @ CARSON ST



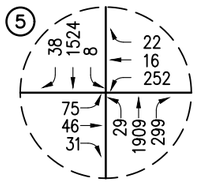
SHOPPING CTR @ CARSON ST



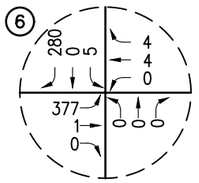
CHERRY AVE @ COVER ST



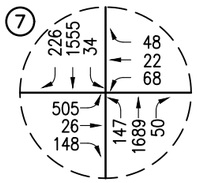
CHERRY AVE @ BIXBY RD



CHERRY AVE @ 36TH ST



INDUSTRY AVE @ 36TH ST



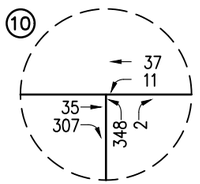
CHERRY AVE @ WARDLOW RD



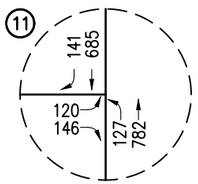
BOEING ST @ WARDLOW RD



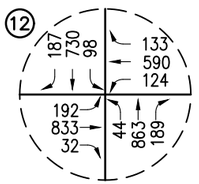
ORANGE AVE @ 32ND ST



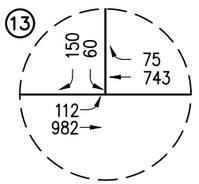
I-405 NB RAMPS @ 32ND ST



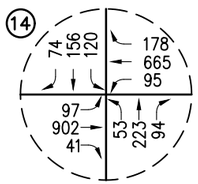
ORANGE AE @ I-405 SB RAMPS



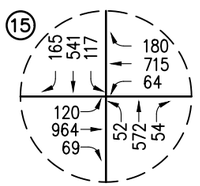
ATLANTIC AVE @ SPRING ST



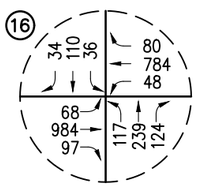
OLIVE AVE @ SPRING ST



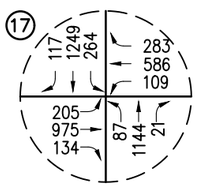
CALIFORNIA AVE @ SPRING ST



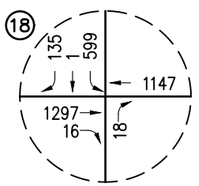
ORANGE AVE @ SPRING ST



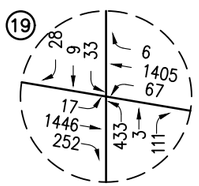
WALNUT AVE @ SPRING ST



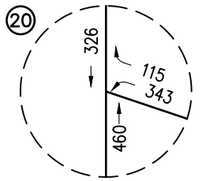
CHERRY AVE @ SPRING ST



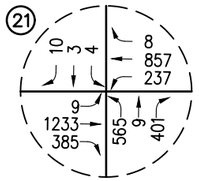
I-405 SB OFF-RAMPS @ SPRING ST



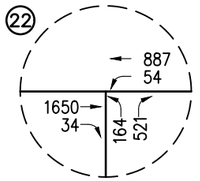
TEMPLE AVE @ SPRING ST



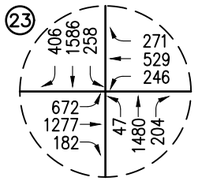
TEMPLE AVE @ I-405 NB OFF-RAMPS



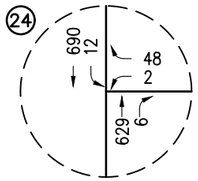
REDONDO AVE @ SPRING ST



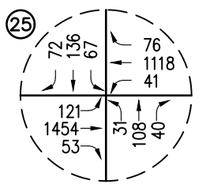
KILROY AIRPORT WAY @ SPRING ST



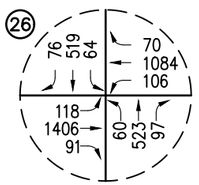
LAKEWOOD BLVD @ SPRING ST



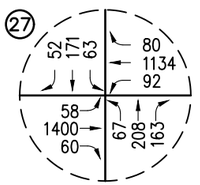
ORANGE AVE @ 29TH ST



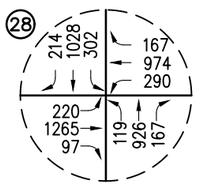
CALIFORNIA AVE @ WILLOW ST



ORANGE AVE @ WILLOW ST



WALNUT AVE @ WILLOW ST



CHERRY AVE @ WILLOW ST

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

# FIGURE 10

## EXISTING (YEAR 2018) PM PEAK HOUR TRAFFIC VOLUMES

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

***Appendix A*** contains the detailed peak hour count sheets for the key intersections evaluated in this report.

## 3.6 Existing Intersection Peak Hour LOS

Pursuant to the City of Long Beach, City of Signal Hill, and City of Lakewood guidelines, existing AM and PM peak hour operating conditions for the key signalized study intersections were evaluated using the *Intersection Capacity Utilization* (ICU) methodology for signalized intersections and the *Highway Capacity Manual* (HCM) methodology for unsignalized intersections.

### 3.6.1 *Intersection Capacity Utilization (ICU) Method of Analysis*

In conformance with City of Long Beach, City of Signal Hill, City of Lakewood and LA County CMP requirements, existing weekday peak hour operating conditions for the key signalized study intersections were evaluated using the Intersection Capacity Utilization (ICU) method. The ICU technique is intended for signalized intersection analysis and estimates the volume to capacity (V/C) relationship for an intersection based on the individual V/C ratios for key conflicting traffic movements. The ICU numerical value represents the percent signal (green) time, and thus capacity, required by existing and/or future traffic. It should be noted that the ICU methodology assumes uniform traffic distribution per intersection approach lane and optimal signal timing.

Per City of Long Beach, City of Signal Hill, City of Lakewood and LA County CMP requirements, the ICU calculations use a lane capacity of 1,600 vehicles per hour (vph) for left-turn, through, and right-turn lanes, and dual left turn capacity of 2,880 vph. A clearance interval of 0.10 is also added to each Level of Service calculation.

The ICU value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The six qualitative categories of Level of Service have been defined along with the corresponding ICU value range and are shown in ***Table 1***. The ICU value is the sum of the critical volume to capacity ratios at an intersection; it is not intended to be indicative of the LOS of each of the individual turning movements.

### 3.6.1 *Highway Capacity Manual (HCM) Method of Analysis (Unsignalized Intersections)*

The HCM unsignalized methodology for stop-controlled intersections was utilized for the analysis of the unsignalized intersections. This methodology estimates the average control delay for each of the subject movements and determines the level of service for each movement. For all-way stop controlled intersections, the overall average control delay measured in seconds per vehicle, and level of service is then calculated for the entire intersection. For one-way and two-way stop-controlled (minor street stop-controlled) intersections, this methodology estimates the worst side street delay, measured in seconds per vehicle and determines the level of service for that approach. The HCM control delay value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The six qualitative categories of Level of Service have been defined along with the corresponding HCM control delay value range, as shown in ***Table 2***.

### 3.6.2 *Level of Service Criteria*

According to the City of Long Beach, City of Signal Hill, and City of Lakewood, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours, or the current LOS if the existing LOS is worse than LOS D (i.e. LOS E of F).

## 3.7 Existing Level of Service Results

***Table 3*** summarizes the existing peak hour service level calculations for the twenty-eight (28) key study intersections based on existing traffic volumes and current street geometrics. Review of *Table 3* indicates that the intersection of Orange Avenue/I-405 SB Ramps currently operates at unacceptable LOS F in the AM and PM peak hour. The remaining twenty-seven (27) key study intersections currently operate at LOS D or better during the weekday AM and PM peak hours. ***Appendix B*** contains the detailed peak hour level of service worksheets for the key intersections evaluated in this report.

## TABLE 1

### LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS [2]

| Level of Service (LOS) | Intersection Capacity Utilization Value (ICU) | Level of Service Description |
|---|---|---|
| A | ≤ 0.600 | EXCELLENT. No vehicle waits longer than one red light, and no approach phase is fully used. |
| B | 0.601 – 0.700 | VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles. |
| C | 0.701 – 0.800 | GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles. |
| D | 0.801 – 0.900 | FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups. |
| E | 0.901 – 1.000 | POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles. |
| F | > 1.000 | FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Potentially very long delays with continuously increasing queue lengths. |

[2] Source: *Transportation Research Board Circular 212 - Interim Materials on Highway Capacity.*

**TABLE 2**

**LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS (HCM)** [3]

| Level of Service (LOS) | Average Control Delay (sec/veh) | Level of Service Description |
|---|---|---|
| A | ≤ 10.0 | Little or no delay |
| B | > 10.0 and ≤ 15.0 | Short traffic delays |
| C | > 15.0 and ≤ 25.0 | Average traffic delays |
| D | > 25.0 and ≤ 35.0 | Long traffic delays |
| E | > 35.0 and ≤ 50.0 | Very long traffic delays |
| F | > 50.0 | Severe congestion |

[3] Source: *Highway Capacity Manual 6th Edition,* Chapter 20 (Two-Way Stop Control).

## TABLE 3
## EXISTING (2018) INTERSECTION PEAK HOUR LEVELS OF SERVICE

| # | Key Intersection | Time Period | ICU | Delay (s/v) | LOS | Deficient LOS? |
|---|---|---|---|---|---|---|
| 1 | Cherry Avenue at | AM | 0.706 | -- | C | No |
| | Carson Street (Long Beach) | PM | 0.807 | -- | D | No |
| 2 | Shopping Center at | AM | 0.401 | -- | A | No |
| | Carson Street (Long Beach) | PM | 0.609 | -- | B | No |
| 3 | Cherry Avenue at | AM | 0.544 | -- | A | No |
| | Cover Street (Long Beach/Lakewood) | PM | 0.790 | -- | C | No |
| 4 | Cherry Avenue at | AM | 0.602 | -- | B | No |
| | Bixby Road (Long Beach/Lakewood) | PM | 0.625 | -- | B | No |
| 5 | Cherry Avenue at | AM | 0.640 | -- | B | No |
| | 36th Street (Long Beach/Lakewood) | PM | 0.748 | -- | C | No |
| 6 | Industry Avenue at | AM | 0.369 | -- | A | No |
| | 36th Street (Lakewood) | PM | 0.513 | -- | A | No |
| 7 | Cherry Avenue at | AM | 0.766 | -- | C | No |
| | Wardlow Road (Long Beach) | PM | 0.857 | -- | D | No |
| 8 | Boeing at | AM | 0.117 | -- | A | No |
| | Wardlow Road (Long Beach) | PM | 0.114 | -- | A | No |
| 9 | Orange Avenue at | AM | 0.719 | -- | C | No |
| | 32nd Street (Signal Hill) | PM | 0.856 | -- | D | No |
| 10 | I-405 Northbound Ramps at | AM | -- | 11.2 | B | No |
| | 32nd Street (Signal Hill/Caltrans) | PM | -- | 19.7 | C | No |
| **11** | **Orange Avenue at** | AM | -- | **94.9** | **F** | **Yes** |
| | **I-405 Southbound Ramps (Long Beach/Caltrans)** | PM | -- | **188.0** | **F** | **Yes** |
| 12 | Atlantic Avenue at | AM | 0.732 | -- | C | No |
| | Spring Street (Signal Hill/Long Beach) | PM | 0.828 | -- | D | No |
| 13 | Olive Avenue at | AM | 0.454 | -- | A | No |
| | Spring Street (Signal Hill) | PM | 0.519 | -- | A | No |
| 14 | California Avenue at | AM | 0.590 | -- | A | No |
| | Spring Street (Signal Hill/Long Beach) | PM | 0.714 | -- | C | No |
| 15 | Orange Avenue at | AM | 0.826 | -- | D | No |
| | Spring Street (Signal Hill/Long Beach) | PM | 0.833 | -- | D | No |
| 16 | Walnut Avenue at | AM | 0.584 | -- | A | No |
| | Spring Street (Signal Hill/Long Beach) | PM | 0.717 | -- | C | No |
| 17 | Cherry Avenue at | AM | 0.690 | -- | B | No |
| | Spring Street (Signal Hill/Long Beach) | PM | 0.738 | -- | C | No |
| 18 | I-405 Southbound Off-Ramp at | AM | 0.732 | -- | C | No |
| | Spring Street (Signal Hill/Long Beach/Caltrans) | PM | 0.719 | -- | C | No |
| 19 | Temple Avenue at | AM | 0.644 | -- | B | No |
| | Spring Street (Long Beach) | PM | 0.668 | -- | B | No |

## TABLE 3 (CONTINUED)
## EXISTING (2018) INTERSECTION PEAK HOUR LEVELS OF SERVICE

| # | Key Intersection | Time Period | ICU | Delay (s/v) | LOS | Deficient LOS? |
|---|---|---|---|---|---|---|
| 20 | Temple Avenue at | AM | 0.375 | -- | A | No |
| | I-405 Northbound Off-Ramp (Long Beach/Caltrans) | PM | 0.458 | -- | A | No |
| 21 | Redondo Avenue at | AM | 0.631 | -- | B | No |
| | Spring Street (Long Beach) | PM | 0.720 | -- | C | No |
| 22 | Kilroy Airport Way at | AM | 0.612 | -- | B | No |
| | Spring Street (Long Beach) | PM | 0.815 | -- | D | No |
| 23 | Lakewood Boulevard at | AM | 0.818 | -- | D | No |
| | Spring Street (Long Beach) | PM | 0.849 | -- | D | No |
| 24 | Orange Avenue at | AM | -- | 14.5 | B | No |
| | 29th Street (Signal Hill/Long Beach) | PM | -- | 14.9 | B | No |
| 25 | California Avenue at | AM | 0.613 | -- | B | No |
| | Willow Street (Signal Hill/Long Beach) | PM | 0.593 | -- | A | No |
| 26 | Orange Avenue at | AM | 0.736 | -- | C | No |
| | Willow Street (Signal Hill/Long Beach) | PM | 0.845 | -- | D | No |
| 27 | Walnut Avenue at | AM | 0.510 | -- | A | No |
| | Willow Street (Signal Hill) | PM | 0.617 | -- | B | No |
| 28 | Cherry Avenue at | AM | 0.687 | -- | B | No |
| | Willow Street (Signal Hill) | PM | 0.818 | -- | D | No |

Notes:

LOS = Level of Service, please refer to *Tables 1* and *2* for the LOS definitions

ICU = Intersection Capacity Utilization

s/v = seconds per vehicle (delay)

= Deficient LOS based on City's LOS standards.

# 4.0 TRAFFIC FORECASTS

In order to determine potential traffic impacts of the Project, a multi-step process has been utilized. The first step is traffic generation, which estimates the total arriving and departing traffic on a peak hour and daily basis. The traffic generation potential is estimated by applying the appropriate vehicle trip generation equations or rates to the Project development tabulation with applicable trip adjustments/credits to account for the existing land uses on site, internal capture, and/or alternative modes of transportation.

The second step of the forecasting process is traffic distribution, which identifies the origins and destinations of inbound and outbound project traffic. These origins and destinations are typically based on demographics and existing/expected future travel patterns in the study area.

The third step is traffic assignment, which involves the allocation of project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway links and intersection turning movements throughout the study area.

With the forecasting process complete and project traffic assignments developed, the impact of the proposed project is isolated by comparing levels of service at selected key intersections using expected future traffic volumes with and without project-generated traffic. The significance of the Project's impacts, and the need for site-specific and/or cumulative local area traffic improvements, can then be determined.

## 4.1 Project Traffic Generation

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Generation equations and/or rates used in the traffic forecasting procedure are found in the 10th Edition of *Trip Generation*, published by the Institute of Transportation Engineers (ITE) [Washington D.C., 2017]. ***Table 4*** summarizes the trip generation rates for the various land use categories specified within the GCSP area.

Traffic Analysis Zones (TAZs) were developed for this study due to the Project's land use designations across approximately 437 acres and to facilitate in assigning net Project-related trips to the key study intersections analyzed in this report. ***Figure 11*** illustrates the resulting TAZ map, showing the 17 TAZs that have been identified within the GCSP area.

The existing square footage for each TAZ, existing land use types by TAZ, and future land use designations for each TAZ as contemplated in the Globemaster Corridor Specific Plan has been provided by *Dudek*.

The trip generation rates presented in *Table 4* were applied to the existing and future (Project) square footage for each land use by TAZ.

It was necessary to account for the "internal" tripmaking characteristics among the various land uses within the City. The ITE trip generation rates and equations were derived from single-use, stand-alone sites, and do not reflect the potential for interaction among uses within an expansive study area. Since internal trips are not made on the external street system, it was necessary to apply internal trip reductions to the gross trip generation for the project. The methodology used in estimating internal trips for the project is documented in the Third Edition of ITE's *Trip Generation Handbook* [Washington, D.C., 2017]. Further, the City and GCSP area has existing and future multimodal facilities that result in trip reductions due to transit use and TDM strategies. As a result, an overall, area-wide trip reduction factor of 20% was applied to gross project-generated trips to account for internal trip, transit, and TDM tripmaking characteristics inherent to the City. The 20% reduction in gross trips is generally conservative when compared to the following studies in the area. The *Midtown Specific Plan Transportation Impact Analysis* dated October 2015 and *Southeast Area Specific Plan (SEASP) Transportation Impact Analysis* both prepared by Fehr and Peers utilized the mixed-use development (MXD) model which had total reductions higher than 20% (ranging from 22% to 31% reductions). *The Douglas Park Rezone Project Traffic Study* prepared by Crain & Associates in 2008, assumed a 20% TDM trip reduction for commercial/office park uses. Please note the Downtown Long Beach TIA applies a 26% transit mode share adjustment, and on top of that, a pass-by reduction of 50% was applied to retail commercial uses, 20% - 43% pass-by reduction was applied to restaurant uses and a 10% walk/bike adjustment was applied to office/work trips. Based on the aforementioned Midtown Specific Plan, SEASP Specific Plan, and Douglas Park Rezone Project, the 20% area-wide trip reduction factor utilized is conservative and appropriate to the Globemaster Corridor Specific Plan.

Additionally, because of the retail and restaurant zones, "pass-by" reductions were applied to the adjusted project-generated trips (after application of the 20% internal/transit/TDM trip reduction factor) for corresponding uses. This is typically done to account for instances when the total number of trips generated by a retail development is different from the amount of new traffic added to the external street system serving the project. Retail-oriented sites attract a portion of their trips from traffic passing by the site, on the way from an origin to an ultimate destination. These retail trips do not add new traffic to the surrounding street system. The methodology used in estimating pass-by trips for the project is also contained in the most current ITE's *Trip Generation Handbook*. It should be noted that the Retail Pass-by Trips sources the Shopping Center (ITE 820) Pass-by rates contained in the ITE's *Trip Generation Handbook*, which indicate a PM Peak Hour pass-by reduction of 34%. The High-Turnover (Sit-down) Restaurant (ITE 932) Pass-by rates also come directly from the ITE's *Trip Generation Handbook*, which indicate a PM Peak Hour pass-by reduction of 43%. In order to provide a conservative assessment, it was assumed that a 10% pass-by reduction was applied to the Retail and High-turnover (Sit-down) Restaurant uses for the Daily and AM Peak Hour. This approach is consistent with various approved traffic studies within the City of Long Beach.

For the industrial zones, the vehicle mix and enter/exit splits are based on the *City of Fontana Truck Trip Generation Study* for Manufacturing land uses and South Coast Air Quality Management for Warehousing land uses. A Passenger Car Equivalent (PCE) factor of 2.0 was then applied to the

resultant truck trips, which is consistent with the information provided within the *City of Long Beach Draft Traffic Impact Analysis Guidelines*, dated October 2018.

***Appendix C*** contains detailed existing (Year 2018) and future Project buildout trip generation tables for the GCSP area.

***Table 5*** presents a summary of the existing net trip generation estimates for the GCSP, corresponding to 18,138 daily trips on a typical weekday, 1,462 AM peak hour trips, and 1,903 PM peak hour trips (see *Appendix C* for a more refined breakdown).

To forecast future traffic generation, the existing trips per TAZ were maintained and applied as trip credits to develop the "net" proposed Project trips for each TAZ within the GCSP area.

***Table 6*** summarizes Proposed Project "gross" trip generation, totaling 59,437 daily trips on a typical weekday, 4,023 AM peak hour trips, and 4,975 PM peak hour trips (see *Appendix C* for the detailed breakdown by land use and by TAZ).

*Table 6* also indicates that, based on a comparison of Proposed Project "gross" trips against the existing trips, the "net" increase in trips attributable to the Proposed Project corresponds to 41,299 daily trips on a typical weekday, 2,561 AM peak hour trips, and 3,072 PM peak hour trips (*Appendix C* contains the more refined trip generation tables). These incremental trips were assigned to the surrounding street system and evaluated for potential traffic impacts during the AM and PM peak hours.

Based upon the Proposed Project land use assumptions, the TAZs expected to generate the most number of trips are TAZ 9, 10 and 12 (GCSP parcels previously occupied by Boeing site and the GSCP parcel northeast of Temple Avenue/Spring Street, as *Figure 11* shows).

# TABLE 4
## PROJECT TRIP GENERATION RATES

| ITE Code: Land Use | Daily (2-Way) | AM Peak Hour In% | AM Peak Hour Out% | AM Peak Hour Total | PM Peak Hour In% | PM Peak Hour Out% | PM Peak Hour Total |
|---|---|---|---|---|---|---|---|
| 140: Manufacturing (trips per KSF) [a] | | | | | | | |
| ❑ Passenger Cars – 61.3% (trips per KSF) | 2.409 | 0.264 | 0.116 | 0.380 | 0.117 | 0.294 | 0.411 |
| ❑ 2-Axle Trucks – 6.1% (trips per KSF) | 0.240 | 0.026 | 0.012 | 0.038 | 0.012 | 0.029 | 0.041 |
| ❑ 3-Axle Trucks- 12.7% (trips per KSF) | 0.499 | 0.055 | 0.024 | 0.079 | 0.024 | 0.061 | 0.085 |
| ❑ 4+ Axle Trucks – 19.9% (trips per KSF) | 0.782 | 0.085 | 0.038 | 0.123 | 0.037 | 0.096 | 0.133 |
| 150: Warehousing (trips per KSF) [b] | | | | | | | |
| ❑ Passenger Cars – 69.0% (trips per KSF) | 1.201 | 0.060 | 0.057 | 0.117 | 0.040 | 0.091 | 0.131 |
| ❑ 2-Axle Trucks – 6.8% (trips per KSF) | 0.118 | 0.006 | 0.006 | 0.012 | 0.004 | 0.009 | 0.013 |
| ❑ 3-Axle Trucks- 5.5% (trips per KSF) | 0.096 | 0.005 | 0.004 | 0.009 | 0.003 | 0.007 | 0.010 |
| ❑ 4+ Axle Trucks – 18.7% (trips per KSF) | 0.325 | 0.016 | 0.016 | 0.032 | 0.011 | 0.025 | 0.036 |
| 151: Mini-Warehouse (trips per KSF) [b] | | | | | | | |
| ❑ Passenger Cars – 69.0% (trips per KSF) | 1.042 | 0.035 | 0.034 | 0.069 | 0.036 | 0.081 | 0.117 |
| ❑ 2-Axle Trucks – 6.8% (trips per KSF) | 0.103 | 0.004 | 0.003 | 0.007 | 0.004 | 0.008 | 0.012 |
| ❑ 3-Axle Trucks- 5.5% (trips per KSF) | 0.083 | 0.003 | 0.003 | 0.006 | 0.003 | 0.006 | 0.009 |
| ❑ 4+ Axle Trucks – 18.7% (trips per KSF) | 0.282 | 0.009 | 0.009 | 0.018 | 0.009 | 0.023 | 0.032 |
| 157: High-Cube Cold Storage Warehouse (trips per KSF) [b] | | | | | | | |
| ❑ Passenger Cars – 69.0% (trips per KSF) | 1.463 | 0.039 | 0.037 | 0.076 | 0.025 | 0.058 | 0.083 |
| ❑ 2-Axle Trucks – 6.8% (trips per KSF) | 0.144 | 0.004 | 0.003 | 0.007 | 0.002 | 0.006 | 0.008 |
| ❑ 3-Axle Trucks- 5.5% (trips per KSF) | 0.117 | 0.003 | 0.003 | 0.006 | 0.002 | 0.005 | 0.007 |
| ❑ 4+ Axle Trucks – 18.7% (trips per KSF) | 0.396 | 0.010 | 0.011 | 0.021 | 0.008 | 0.014 | 0.022 |
| 310: Hotel (trips per Room) | 8.36 | 59% | 41% | 0.47 | 51% | 49% | 0.60 |
| 495: Recreational Community Center (trips per KSF) | 28.82 | 66% | 34% | 1.76 | 47% | 53% | 2.31 |
| 640: Animal Hospital Veterinary Clinic (trips per KSF) | 21.50 | 67% | 33% | 3.64 | 40% | 60% | 3.53 |
| 710: General Office Building (trips per KSF) [c] | 9.74 | 86% | 14% | 1.16 | 16% | 84% | 1.15 |
| 720: Medical Dental Office Building (trips per KSF) | 34.80 | 78% | 22% | 2.78 | 28% | 72% | 3.46 |
| 760: Research and Development Center (trips per KSF) | 11.26 | 75% | 25% | 0.42 | 15% | 85% | 0.49 |
| 811: Construction Equipment Rental Store (trips per KSF) | 9.90 | -- | -- | -- | 28% | 72% | 0.99 |
| 820: Shopping Center (trips per KSF) [d] | 37.75 | 62% | 38% | 0.94 | 48% | 52% | 3.81 |
| 840: Automobile Sales New (trips per KSF) | 27.84 | 73% | 27% | 1.87 | 40% | 60% | 2.43 |
| 841: Automobile Sales Used (trips per KSF) | 27.06 | 76% | 24% | 2.13 | 47% | 53% | 3.75 |
| 843: Automobile Parts Sales (trips per KSF) | 55.34 | 55% | 45% | 2.59 | 48% | 52% | 4.91 |
| 912: Drive in Bank (trips per KSF) | 100.03 | 58% | 42% | 9.50 | 50% | 50% | 20.45 |
| 930: Fast Casual Restaurant (trips per KSF) | 315.17 | 67% | 33% | 2.07 | 55% | 45% | 14.13 |
| 931: Quality Restaurant (trips per KSF) | 83.84 | 90% | 10% | 0.73 | 67% | 33% | 7.80 |
| 932: High-Turnover Sit Down Restaurant (trips per KSF) | 112.18 | 55% | 45% | 9.94 | 62% | 38% | 9.77 |
| 934: Fast-Food Restaurant with Drive Through Window (trips per KSF) | 470.95 | 51% | 49% | 40.19 | 52% | 48% | 32.67 |
| 942: Automobile Care Center (trips per KSF) | 31.10 | 66% | 34% | 2.25 | 48% | 52% | 3.11 |
| 943: Automobile Parts and Service Center (trips per KSF) | 16.28 | 73% | 27% | 1.96 | 40% | 60% | 2.26 |
| 948: Automated Car Wash (trips per KSF) | 142.00 | -- | -- | -- | 50% | 50% | 14.20 |

Source: *Trip Generation* (10th Edition), Institute of Transportation Engineers (ITE), 2017

Notes:

KSF = 1,000 Square Feet

Ln = Natural logarithm

T = Two-way volume of traffic (total trip ends)

X = Area in 1,000 gross square feet of leasable area

[a] The Daily, total AM peak hour, and total PM peak hour rates are from *ITE Trip Generation, 10th Edition*. The vehicle mix and enter/exit splits are based on the *City of Fontana Truck Trip Generation Study*, dated August 2003.

[b] The Daily, total AM peak hour, and total PM peak hour rates are from *ITE Trip Generation, 10th Edition*. The vehicle mix and enter/exit splits are provided by South Coast Air Quality Management District.

[c] Trip generation for general office building was calculated using the following equations for uses larger than 100 KSF:

Weekday Daily: Ln(T) = 0.97Ln(X) + 2.50

Weekday AM Peak Hour: T = 0.94(X) + 26.49

Weekday PM Peak Hour: Ln(T) = 0.95Ln(X) + 0.36

[d] Trip generation for shopping center was calculated using the following equations for uses larger than 100 KSF:

Weekday Daily: Ln(T) = 0.68Ln(X) + 5.57

Weekday AM Peak Hour: T = 0.50(X) + 151.78

Weekday PM Peak Hour: Ln(T) = 0.74Ln(X) + 2.89

## TABLE 5
## EXISTING (YEAR 2018) PROJECT TRIP GENERATION

| Traffic Analysis Zones [a], [b], [c] | Daily (2-Way) | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | | In | Out | Total | In | Out | Total |
| TAZ 1 | 2,867 | 109 | 77 | 186 | 121 | 147 | 268 |
| TAZ 2 | 6,515 | 199 | 108 | 307 | 240 | 294 | 534 |
| TAZ 3 | 581 | 38 | 17 | 55 | 29 | 40 | 69 |
| TAZ 4 | 701 | 71 | 27 | 98 | 32 | 74 | 106 |
| TAZ 5 | 255 | 25 | 11 | 36 | 12 | 27 | 39 |
| TAZ 6 | 360 | 22 | 16 | 38 | 14 | 15 | 29 |
| TAZ 7 | 875 | 27 | 9 | 36 | 41 | 60 | 101 |
| TAZ 8 | 88 | 11 | 3 | 14 | 4 | 12 | 16 |
| TAZ 9 [d] | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TAZ 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TAZ 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TAZ 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TAZ 13 | 2,873 | 255 | 107 | 362 | 109 | 289 | 398 |
| TAZ 14 | 192 | 6 | 2 | 8 | 6 | 16 | 22 |
| TAZ 15 | 401 | 37 | 11 | 48 | 13 | 42 | 55 |
| TAZ 16 | 973 | 85 | 41 | 126 | 46 | 92 | 138 |
| TAZ 17 | 1,457 | 96 | 52 | 148 | 54 | 74 | 128 |
| **EXISTING TOTAL** | **18,138** | **981** | **481** | **1,462** | **721** | **1,182** | **1,903** |

Notes:

[a] An internal trip reduction of 20% was applied to account for internal trips, transit use, and TDM strategies.

[b] Of the total trip generation for Manufacturing and Warehousing/Mini-warehousing, the Daily, total AM peak hour, and total PM peak hour rates are from *ITE Trip Generation, 10th Edition*. The vehicle mx and enter/exit splits are based on the *City of Fontana Truck Trip Generation Study* for Manufacturing land uses and South Coast Air Quality Management for Warehousing land uses. A Passenger Car Equivalent (PCE) factor of 2.0 was applied to truck trips.

[c] Retail Pass-by trips consist of 10%, 10%, and 34% for Daily, AM peak hour, and PM peak hour, respectively. High-turnover (Sit-down) Restaurant Pass-by trips consist of 10%, 10%, and 43% for Daily, AM peak hour, and PM peak hour, respectively. Drive-in Bank Pass-by trips consist of 10%, 29%, and 35% for Daily, AM peak hour, and PM peak hour, respectively.

[d] Existing Boeing site.

## TABLE 6
## PROPOSED PROJECT TRIP GENERATION

| Traffic Analysis Zones [a], [b], [c] | Daily (2-Way) | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | | In | Out | Total | In | Out | Total |
| **TAZ 1** | | | | | | | |
| PROJECT TAZ 1 Total: | 2,692 | 53 | 36 | 89 | 77 | 73 | 150 |
| EXISTING TAZ 1 Total: | 2,867 | 109 | 77 | 186 | 121 | 147 | 268 |
| PROJECT MINUS EXISTING: | (175) | (56) | (41) | (97) | (44) | (74) | (118) |
| **TAZ 2** | | | | | | | |
| PROJECT TAZ 2 Total: | 6,946 | 215 | 112 | 327 | 206 | 270 | 476 |
| EXISTING TAZ 2 Total: | 6,515 | 199 | 108 | 307 | 240 | 294 | 534 |
| PROJECT MINUS EXISTING: | 431 | 16 | 4 | 20 | (34) | (24) | (58) |
| **TAZ 3** | | | | | | | |
| PROJECT TAZ 3 Total: | 2,748 | 90 | 63 | 153 | 75 | 68 | 143 |
| EXISTING TAZ 3 Total: | 581 | 38 | 17 | 55 | 29 | 40 | 69 |
| PROJECT MINUS EXISTING: | 2,167 | 52 | 46 | 98 | 46 | 28 | 74 |
| **TAZ 4** | | | | | | | |
| PROJECT TAZ 4 Total: | 4,033 | 98 | 58 | 156 | 99 | 128 | 227 |
| EXISTING TAZ 4 Total: | 701 | 71 | 27 | 98 | 32 | 74 | 106 |
| PROJECT MINUS EXISTING: | 3,332 | 27 | 31 | 58 | 67 | 54 | 121 |
| **TAZ 5** | | | | | | | |
| PROJECT TAZ 5 Total: | 845 | 32 | 18 | 50 | 31 | 49 | 80 |
| EXISTING TAZ 5 Total: | 255 | 25 | 11 | 36 | 12 | 27 | 39 |
| PROJECT MINUS EXISTING: | 590 | 7 | 7 | 14 | 19 | 22 | 41 |
| **TAZ 6** | | | | | | | |
| PROJECT TAZ 6 Total: | 895 | 46 | 10 | 56 | 31 | 48 | 79 |
| EXISTING TAZ 6 Total: | 360 | 22 | 16 | 38 | 14 | 15 | 29 |
| PROJECT MINUS EXISTING: | 535 | 24 | (6) | 18 | 17 | 33 | 50 |
| **TAZ 7** | | | | | | | |
| PROJECT TAZ 7 Total: | 3,133 | 254 | 62 | 316 | 69 | 271 | 340 |
| EXISTING TAZ 7 Total: | 875 | 27 | 9 | 36 | 41 | 60 | 101 |
| PROJECT MINUS EXISTING: | 2,258 | 227 | 53 | 280 | 28 | 211 | 239 |
| **TAZ 8** | | | | | | | |
| PROJECT TAZ 8 Total: | 2,629 | 173 | 53 | 226 | 72 | 196 | 268 |
| EXISTING TAZ 8 Total: | 88 | 11 | 3 | 14 | 4 | 12 | 16 |
| PROJECT MINUS EXISTING: | 2,541 | 162 | 50 | 212 | 68 | 184 | 252 |
| **TAZ 9** | | | | | | | |
| PROJECT TAZ 9 Total: | 16,037 | 1,138 | 272 | 1,410 | 304 | 1,232 | 1,536 |
| EXISTING TAZ 9 Total: | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PROJECT MINUS EXISTING: | 16,037 | 1,138 | 272 | 1,410 | 304 | 1,232 | 1,536 |
| **TAZ 10** | | | | | | | |
| PROJECT TAZ 10 Total: | 3,414 | 114 | 77 | 191 | 124 | 187 | 311 |
| EXISTING TAZ 10 Total: | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PROJECT MINUS EXISTING: | 3,414 | 114 | 77 | 191 | 124 | 187 | 311 |
| **TAZ 11** | | | | | | | |
| PROJECT TAZ 11 Total: | 1,522 | 43 | 28 | 71 | 45 | 66 | 111 |
| EXISTING TAZ 11 Total: | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PROJECT MINUS EXISTING: | 1,522 | 43 | 28 | 71 | 45 | 66 | 111 |

## TABLE 6 (CONTINUED)
## PROPOSED PROJECT TRIP GENERATION

| Traffic Analysis Zones [a], [b], [c] | Daily (2-Way) | AM Peak Hour | | | PM Peak Hour | | |
|---|---|---|---|---|---|---|---|
| | | In | Out | Total | In | Out | Total |
| **TAZ 12** | | | | | | | |
| PROJECT TAZ 12 Total: | 4,292 | 199 | 135 | 334 | 153 | 253 | 406 |
| EXISTING TAZ 12 Total: | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PROJECT MINUS EXISTING: | 4,292 | 199 | 135 | 334 | 153 | 253 | 406 |
| **TAZ 13** | | | | | | | |
| PROJECT TAZ 13 Total: | 2,768 | 151 | 85 | 236 | 96 | 168 | 264 |
| EXISTING TAZ 13 Total: | 2,873 | 255 | 107 | 362 | 109 | 289 | 398 |
| PROJECT MINUS EXISTING: | (105) | (104) | (22) | (126) | (13) | (121) | (134) |
| **TAZ 14** | | | | | | | |
| PROJECT TAZ 14 Total: | 1,663 | 66 | 38 | 104 | 63 | 100 | 163 |
| EXISTING TAZ 14 Total: | 192 | 6 | 2 | 8 | 6 | 16 | 22 |
| PROJECT MINUS EXISTING: | 1,471 | 60 | 36 | 96 | 57 | 84 | 141 |
| **TAZ 15** | | | | | | | |
| PROJECT TAZ 15 Total: | 2,182 | 97 | 50 | 147 | 84 | 139 | 223 |
| EXISTING TAZ 15 Total: | 401 | 37 | 11 | 48 | 13 | 42 | 55 |
| PROJECT MINUS EXISTING: | 1,781 | 60 | 39 | 99 | 71 | 97 | 168 |
| **TAZ 16** | | | | | | | |
| PROJECT TAZ 16 Total: | 2,249 | 66 | 46 | 112 | 62 | 75 | 137 |
| EXISTING TAZ 16 Total: | 973 | 85 | 41 | 126 | 46 | 92 | 138 |
| PROJECT MINUS EXISTING: | 1,276 | (19) | 5 | (14) | 16 | (17) | (1) |
| **TAZ 17** | | | | | | | |
| PROJECT TAZ 17 Total: | 1,389 | 28 | 17 | 45 | 28 | 33 | 61 |
| EXISTING TAZ 17 Total: | 1,457 | 96 | 52 | 148 | 54 | 74 | 128 |
| PROJECT MINUS EXISTING: | (68) | (68) | (35) | (103) | (26) | (41) | (67) |
| **PROJECT TOTAL (7,011,195 SF)** | **59,437** | **2,863** | **1,160** | **4,023** | **1,619** | **3,356** | **4,975** |
| **EXISTING TOTAL (2,094,175 SF) [d]** | **18,138** | **981** | **481** | **1,462** | **721** | **1,182** | **1,903** |
| ***PROJECT TOTAL MINUS EXISTING TOTAL (4,107,020 SF NET INCREASE)*** | ***41,299*** | ***1,882*** | ***679*** | ***2,561*** | ***898*** | ***2,174*** | ***3,072*** |

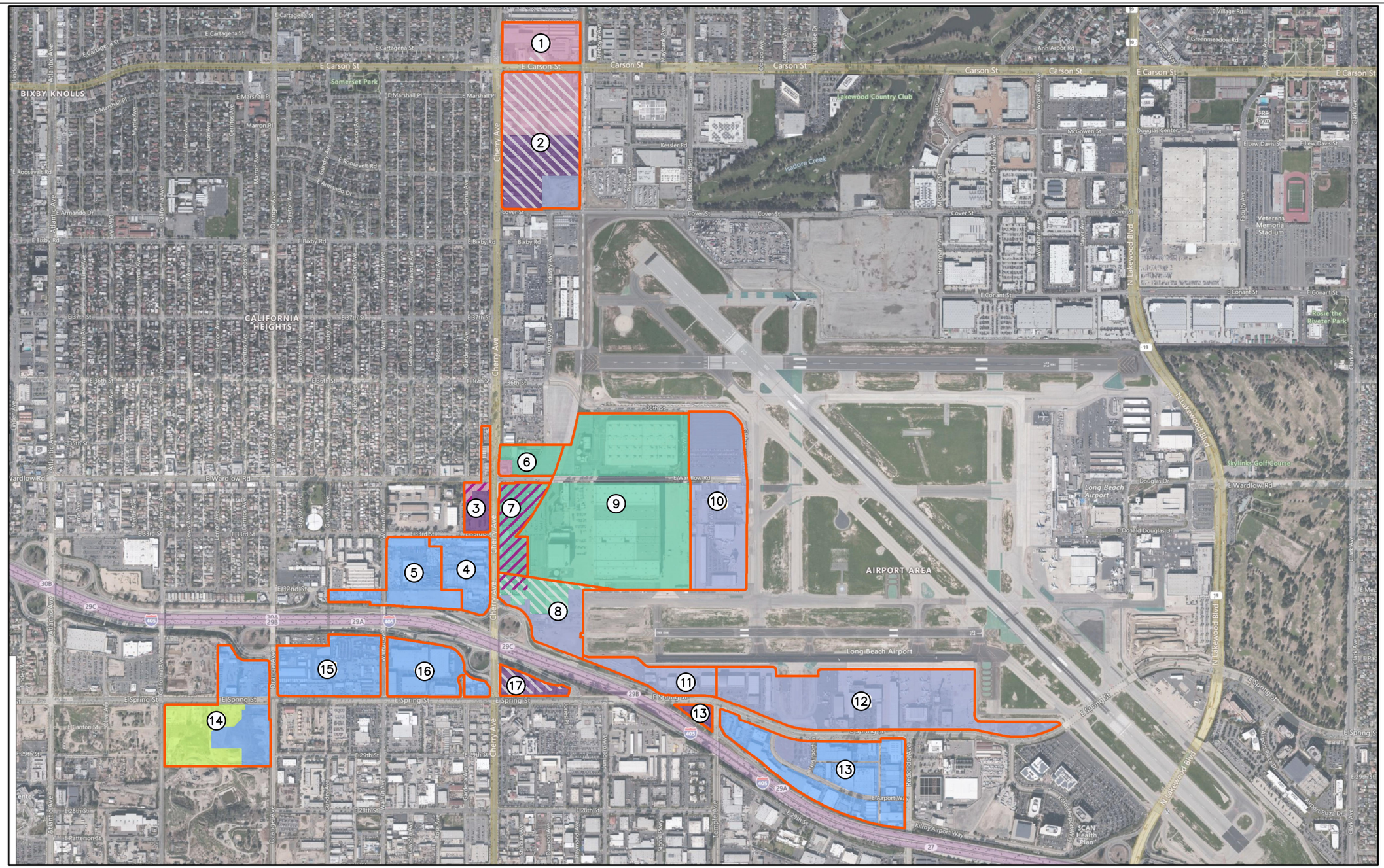
Notes:

[a] An internal trip reduction of 20% was applied to account for internal trips, transit use, and TDM strategies.

[b] Of the total trip generation for Manufacturing and Warehousing/Mini-warehousing, the Daily, total AM peak hour, and total PM peak hour rates are from *ITE Trip Generation, 10th Edition* . The vehicle mx and enter/exit splits are based on the *City of Fontana Truck Trip Generation Study* for Manufacturing land uses and South Coast Air Quality Management for Warehousing land uses. A Passenger Car Equivalent (PCE) factor of 2.0 was applied to truck trips.

[c] Retail Pass-by trips consist of 10%, 10%, and 34% for Daily, AM peak hour, and PM peak hour, respectively.
High-turnover (Sit-down) Restaurant Pass-by trips consist of 10%, 10%, and 43% for Daily, AM peak hour, and PM peak hour, respectively.
Fast Casual and Fast-Food Restaurant with Drive-through window Pass-by trips consist of 25%, 49%, and 50% for Daily, AM peak hour, and PM peak hour, respectively. Quality Restaurant Pass-by trips consist of 10%, 10%, and 44% for Daily, AM peak hour, and PM peak hour, respectively.

[d] Existing square footage total reported excludes 1,409,441 SF of existing vacant industrial uses located within TAZ 9 (Boeing Site).

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

SOURCE: DUDEK

KEY

(#) = TRAFFIC ANALYSIS ZONE (TAZ)

# FIGURE 11

**GLOBEMASTER CORRIDOR SPECIFIC PLAN TAZ MAP**

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

## 4.2 Project Traffic Distribution and Assignment

The geographic distribution of traffic generated by developments such as the Project is dependent upon the following factors:

- the Project's market/service area
- location of site access points in relation to the surrounding street system
- location of parking areas, and ingress/egress availability at the parking areas
- the site's proximity to major traffic carriers and regional access routes
- physical characteristics of the circulation system such as lane channelization and presence of traffic signals that affect travel patterns
- presence of traffic congestion in the surrounding vicinity

Select zone assignments from the Year 2040 SCAG traffic model, provided by LSA Associates, (contained in ***Appendix D*** of this report) was used as a starting point, and further refined to reflect the factors listed above. Based on these considerations, two overall traffic distribution patterns, one for passenger cars and one for trucks, were developed for this study. ***Figure 12A*** illustrates the overall passenger car traffic distribution pattern developed for the proposed Project. ***Figure 12B*** illustrates the overall truck traffic distribution pattern developed for the proposed Project.

The traffic expected to be generated by the project was assigned to the local street network using the net trip generation estimates summarized in *Table 6*, and the area-wide distribution pattern illustrated in *Figures 12A* and *12B*. ***Figures 13*** and ***14*** illustrates the anticipated AM and PM peak hour traffic volumes associated with the proposed Project, respectively.

## 4.3 Existing (2018) Plus Project Traffic Forecasts

The Existing (2018) plus Project analysis adds project-generated forecasts to existing conditions. ***Figures 15*** and ***16*** present the Existing (2018) Plus Project traffic volumes at the 28 key intersections for the weekday AM and PM peak hours, respectively.

## 4.4 Year 2040 Baseline Traffic Forecasts

The anticipated buildout year for the Globemaster Corridor Specific Plan (GCSP) area is Year 2040.

The Year 2040 Baseline traffic projections account for an increase in the existing traffic volumes due to overall regional growth, based on the historical rates identified in the most current *2010 Congestion Management Program (CMP) for Los Angeles County*. In addition, planned improvements identified by the City of Long Beach are detailed in the following section.

### 4.4.1 *Year 2040 Planned Improvements*

Based on direction from City staff, the City of Long Beach has planned improvements which include a signalized intersection at Orange Avenue/I-405 Southbound Ramps and protected bikeway facilities along Orange Avenue and Spring Street, which reduces intersection capacity at the intersections of Atlantic Ave/Spring St, California Ave/Spring St, Orange Ave/Spring St, Temple Ave/Spring St, Redondo Ave/Spring St and Orange Ave/Willow St. These planned improvements

have been assumed under Year 2040 Baseline and Year 2040 Plus Project traffic conditions, and include the following:

- **Intersection 11 – Orange Avenue at I-405 SB Ramps (Long Beach/Caltrans):** Install a three-phase traffic signal. These improvements are subject to the approval of Caltrans.

- **Intersection 12 – Atlantic Avenue at Spring Street (Signal Hill/Long Beach):** Modify and restripe the eastbound and westbound approaches to include a left-turn lane, a through lane, and shared through-right turn lane. Modify the existing traffic signal accordingly. With implementation of improvements associated with the Spring Street Class IV Bikeway, this study intersection would be designed to include protected bike lanes (i.e. on-street bike lanes and a median buffer to separate bicycle traffic from vehicular traffic), which requires the removal of the existing exclusive westbound right-turn lane and eastbound right-turn lane.

- **Intersection 14 – California Avenue at Spring Street (Signal Hill/Long Beach):** Modify and restripe the eastbound and westbound approaches to include a left-turn lane, a through lane, and shared through-right turn lane. Modify the existing traffic signal accordingly. With implementation of improvements associated with the Spring Street Class IV Bikeway, this study intersection would be designed to include protected bike lanes (i.e. on-street bike lanes and a median buffer to separate bicycle traffic from vehicular traffic), which requires the removal of the existing exclusive westbound right-turn lane and eastbound right-turn lane.

- **Intersection 15 – Orange Avenue at Spring Street (Signal Hill/Long Beach):** Modify and restripe the northbound approach to include a left-turn lane, a through lane, and right turn lane. Modify the existing traffic signal accordingly. With implementation of improvements associated with the Orange Avenue Class IV Bikeway, this study intersection would be designed to include protected bike lanes (i.e. on-street bike lanes and a median buffer to separate bicycle traffic from vehicular traffic), which requires the removal of one existing northbound through lane.

- **Intersection 19 – Temple Avenue at Spring Street (Long Beach):** Modify and restripe the eastbound and westbound approaches to include a left-turn lane, a through lane, and shared through-right turn lane. Modify the existing traffic signal accordingly. With implementation of improvements associated with the Spring Street Class IV Bikeway, this study intersection would be designed to include protected bike lanes (i.e. on-street bike lanes and a median buffer to separate bicycle traffic from vehicular traffic), which requires the removal of one existing eastbound through lane and one existing westbound through lane.

- **Intersection 21 – Redondo Avenue at Spring Street (Long Beach):** Modify and restripe the eastbound and westbound approaches to include a left-turn lane, a through lane, and shared through-right turn lane. Modify the existing traffic signal accordingly. With implementation of improvements associated with the Spring Street Class IV Bikeway, this study intersection would be designed to include protected bike lanes (i.e. on-street bike lanes and a median buffer to separate bicycle traffic from vehicular traffic), which requires the removal of one existing eastbound through lane, one existing westbound through lane and one existing westbound left-turn lane.

- **Intersection 26 – Orange Avenue at Willow Street (Signal Hill/Long Beach):** Restripe the southbound approach to include a left-turn lane and a shared through-right turn lane. Modify the existing traffic signal accordingly. With implementation of improvements associated with the Orange Avenue Class IV Bikeway, the existing southbound right-turn lane would be removed to allow for the installation of on-street bike lanes and a buffer to separate bicycle traffic from vehicular traffic.

### 4.4.2 *Ambient Growth*

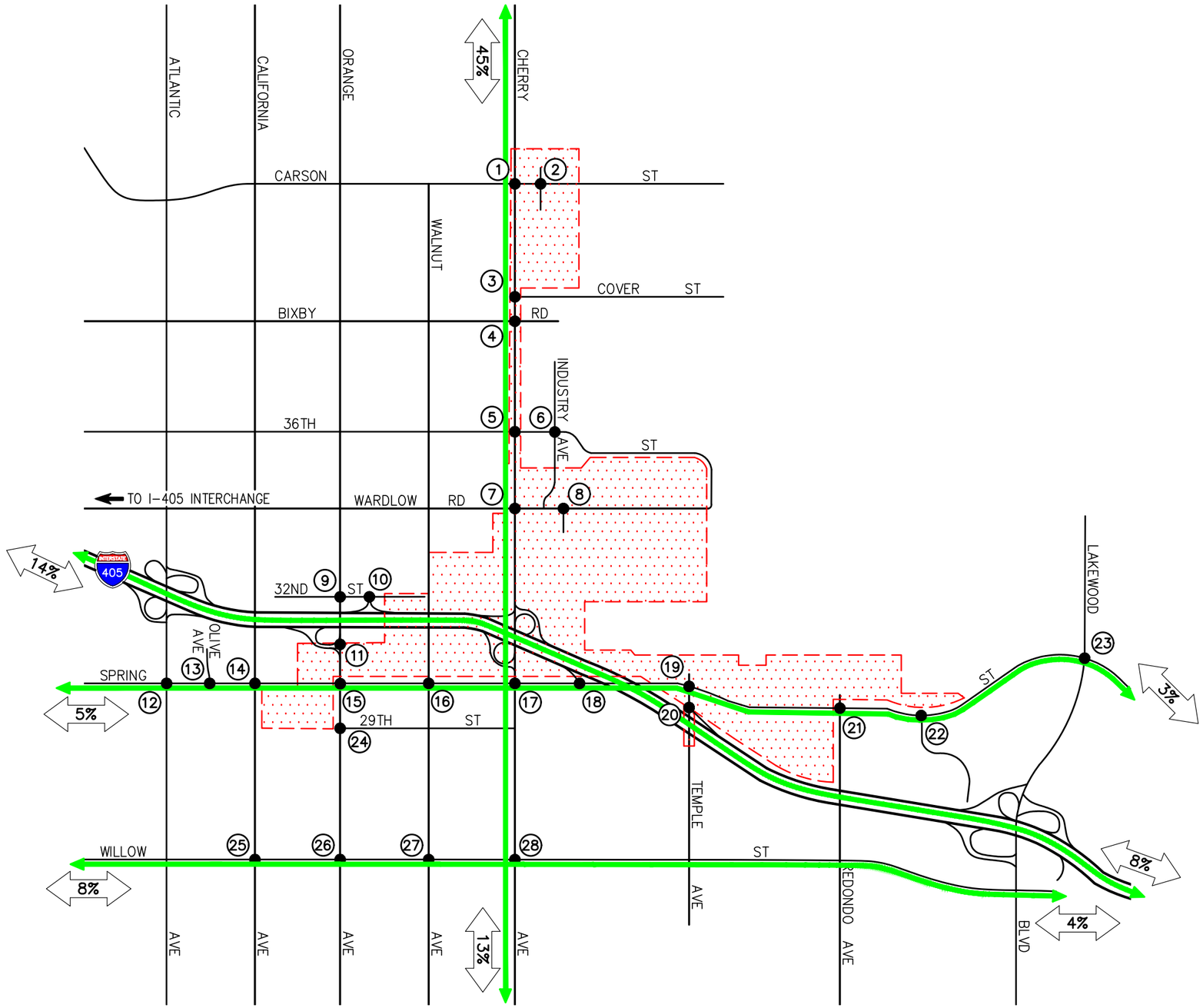
The ambient traffic growth factor is intended to include unknown and future related projects in the study area, as well as account for regular growth in traffic volumes due to the development of projects outside the study area from existing (Year 2018) to anticipated future Project Buildout in Year 2040. The ambient traffic growth was applied to existing (Year 2018) traffic conditions based on a two-step process. First, based on the ambient growth rates contained in the 2010 CMP for Los Angeles County for the City of Long Beach between Year 2015 and Year 2020, the ambient growth factor of 1.52% per year was applied to Year 2018 to develop Year 2020 baseline traffic volumes. Second, based on the ambient growth rates contained in the 2010 CMP for Los Angeles County for the City of Long Beach between Year 2020 and Year 2040, the ambient growth rate of 0.17% per year was applied to the Year 2020 baseline traffic volumes to develop the Year 2040 Baseline traffic volumes.

### 4.4.3 *Year 2040 Baseline Traffic Volumes*

***Figures 17*** and ***18*** present the Year 2040 Baseline traffic volumes at the 28 key intersections during the weekday AM and PM peak hours, respectively.

## 4.5 Year 2040 Plus Project Traffic Volumes

***Figures 19*** and ***20*** illustrate the Year 2040 Plus Project traffic volumes at the 28 key intersections during the weekday AM and PM peak hours, respectively.

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

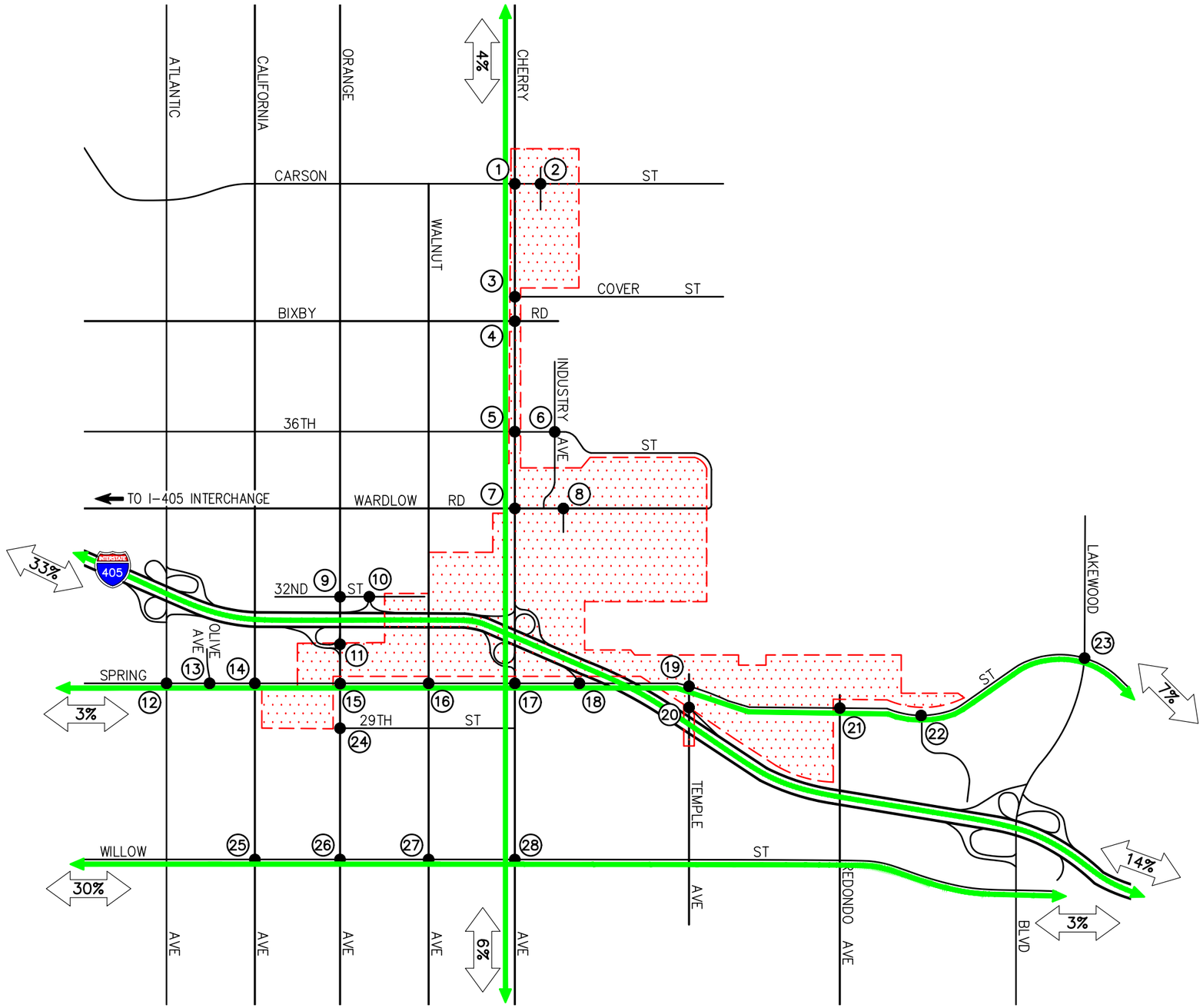
(#) = STUDY INTERSECTION

= PROJECT SITE

# FIGURE 12A

**PROJECT TRIP DISTRIBUTION PATTERN (PASSENGER CARS)**

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

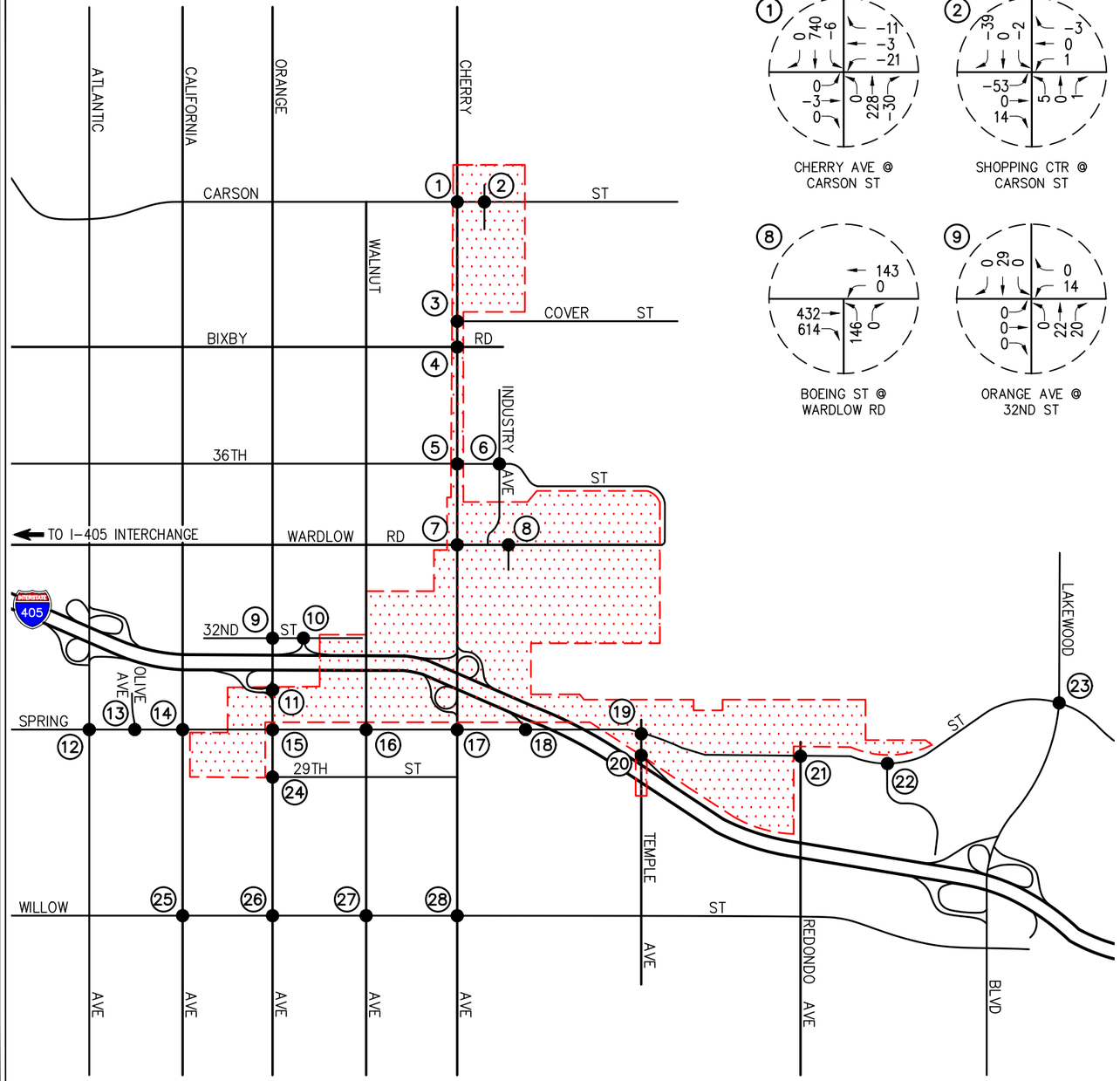
(#) = STUDY INTERSECTION

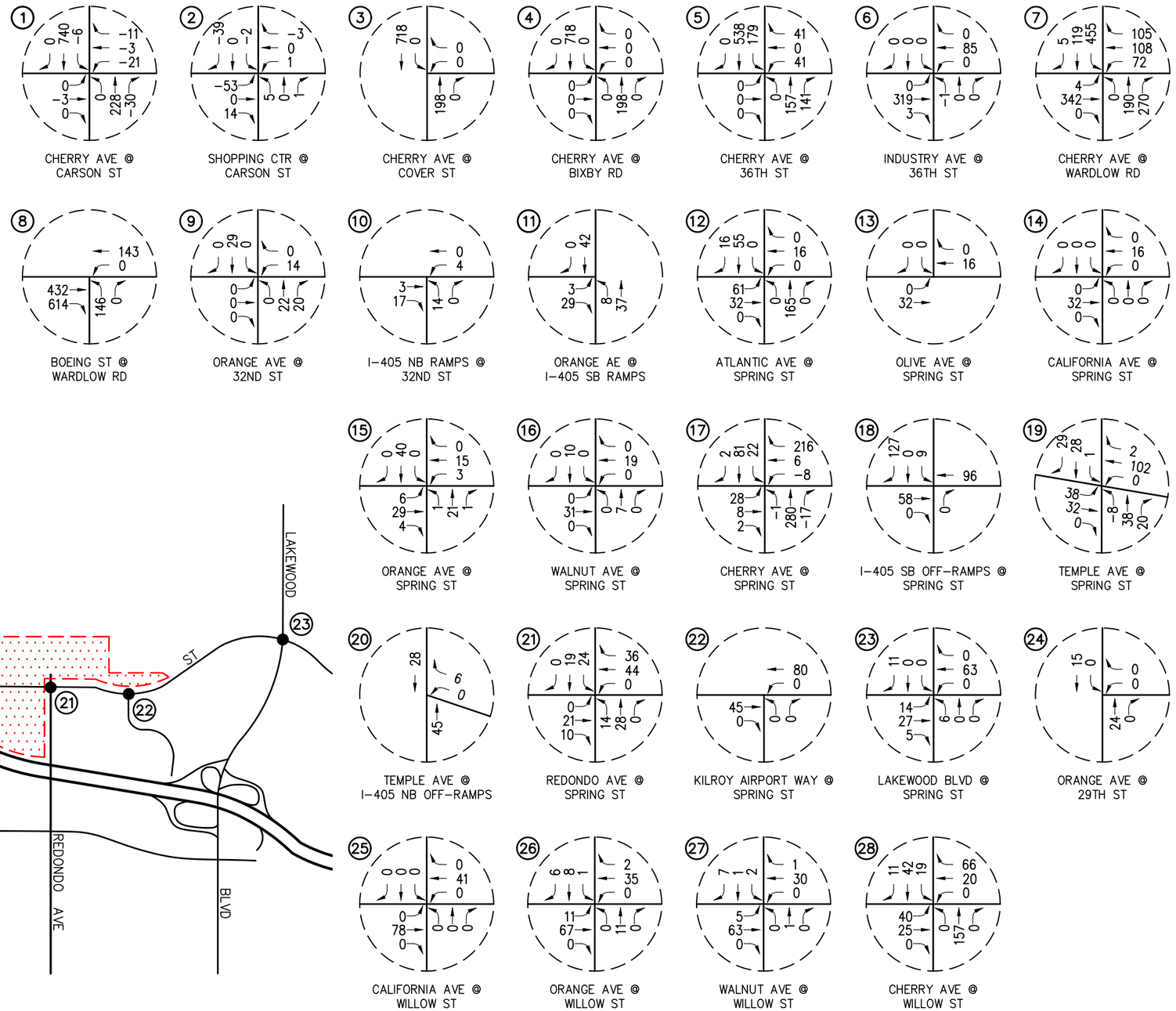
= PROJECT SITE

# FIGURE 12B

## PROJECT TRIP DISTRIBUTION PATTERN (TRUCKS)

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

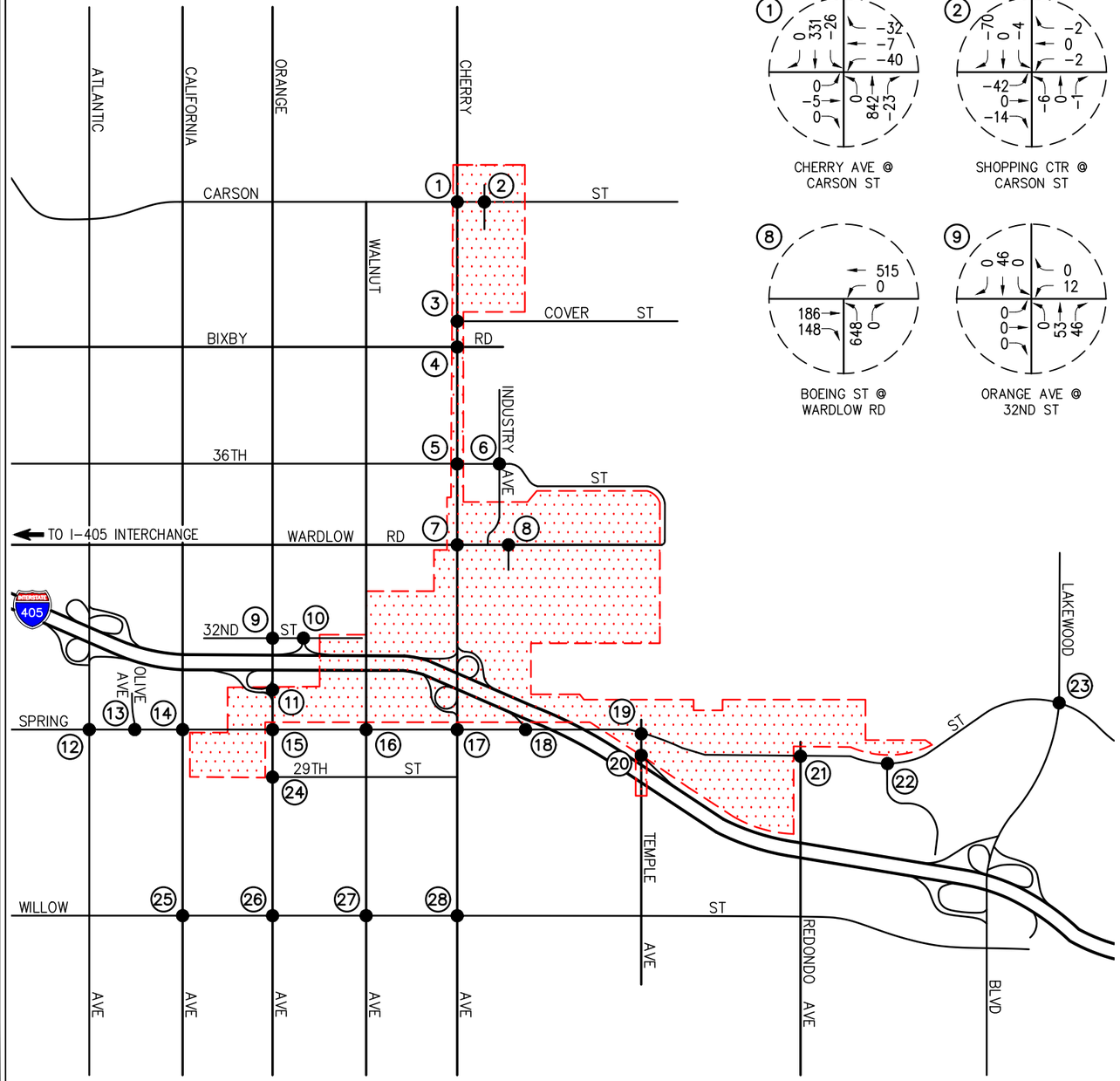
(#) = STUDY INTERSECTION

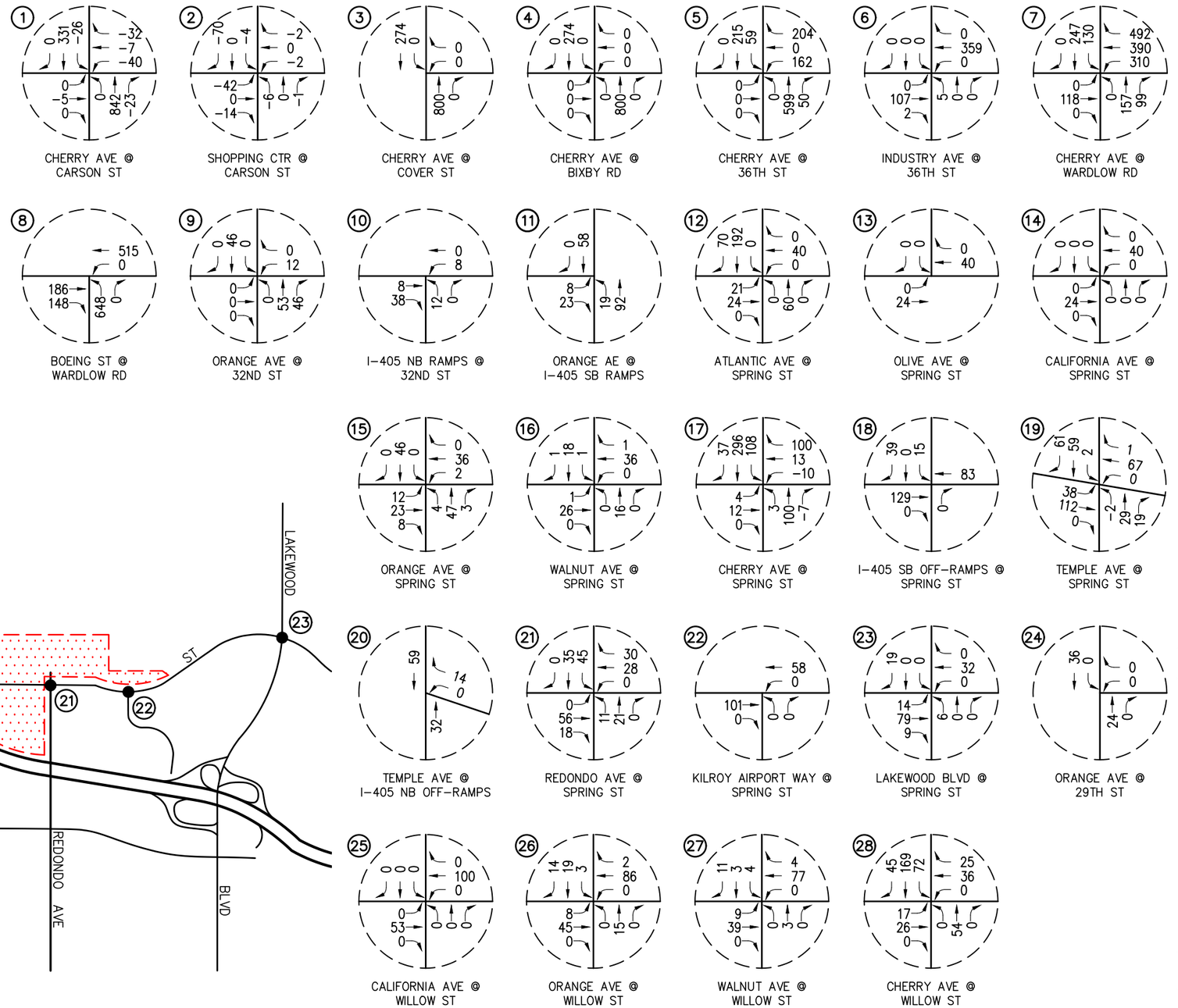
= PROJECT SITE

# FIGURE 13

## AM PEAK HOUR PROJECT ONLY TRAFFIC VOLUMES

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

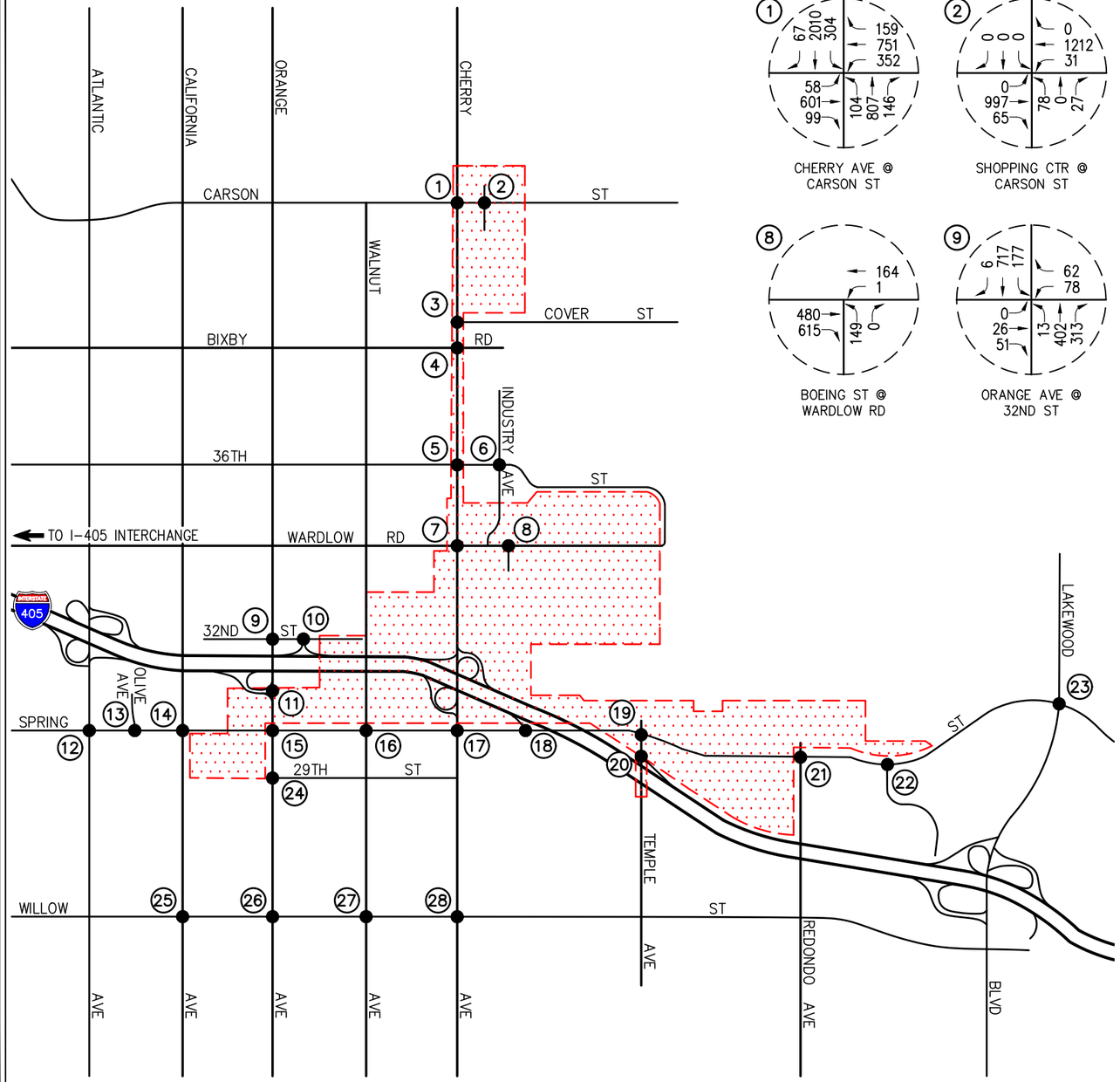
(#) = STUDY INTERSECTION

= PROJECT SITE

# FIGURE 14

## PM PEAK HOUR PROJECT ONLY TRAFFIC VOLUMES

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH




LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

# FIGURE 15

## EXISTING (2018) + PROJECT AM PEAK HOUR TRAFFIC VOLUMES

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

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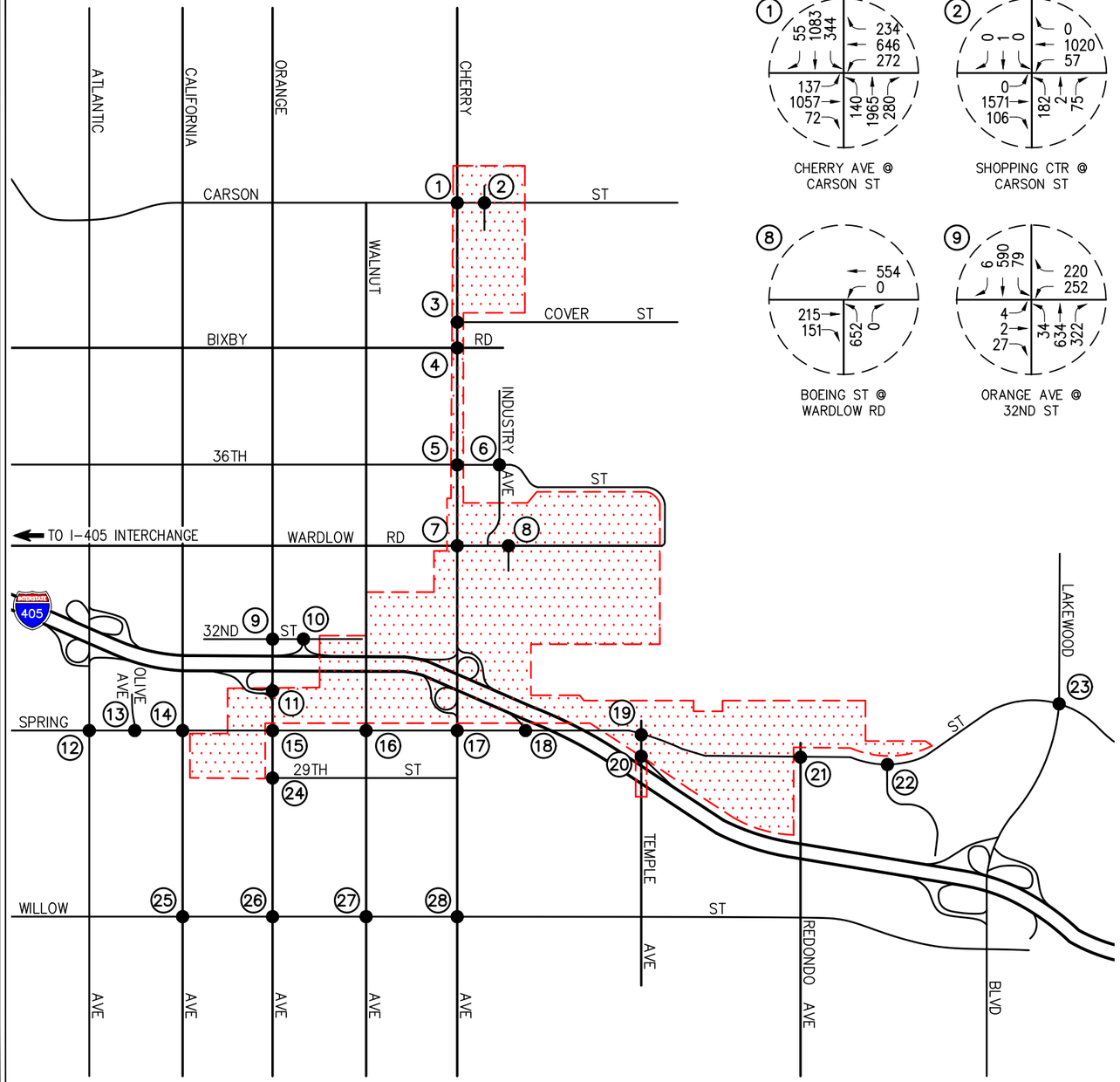


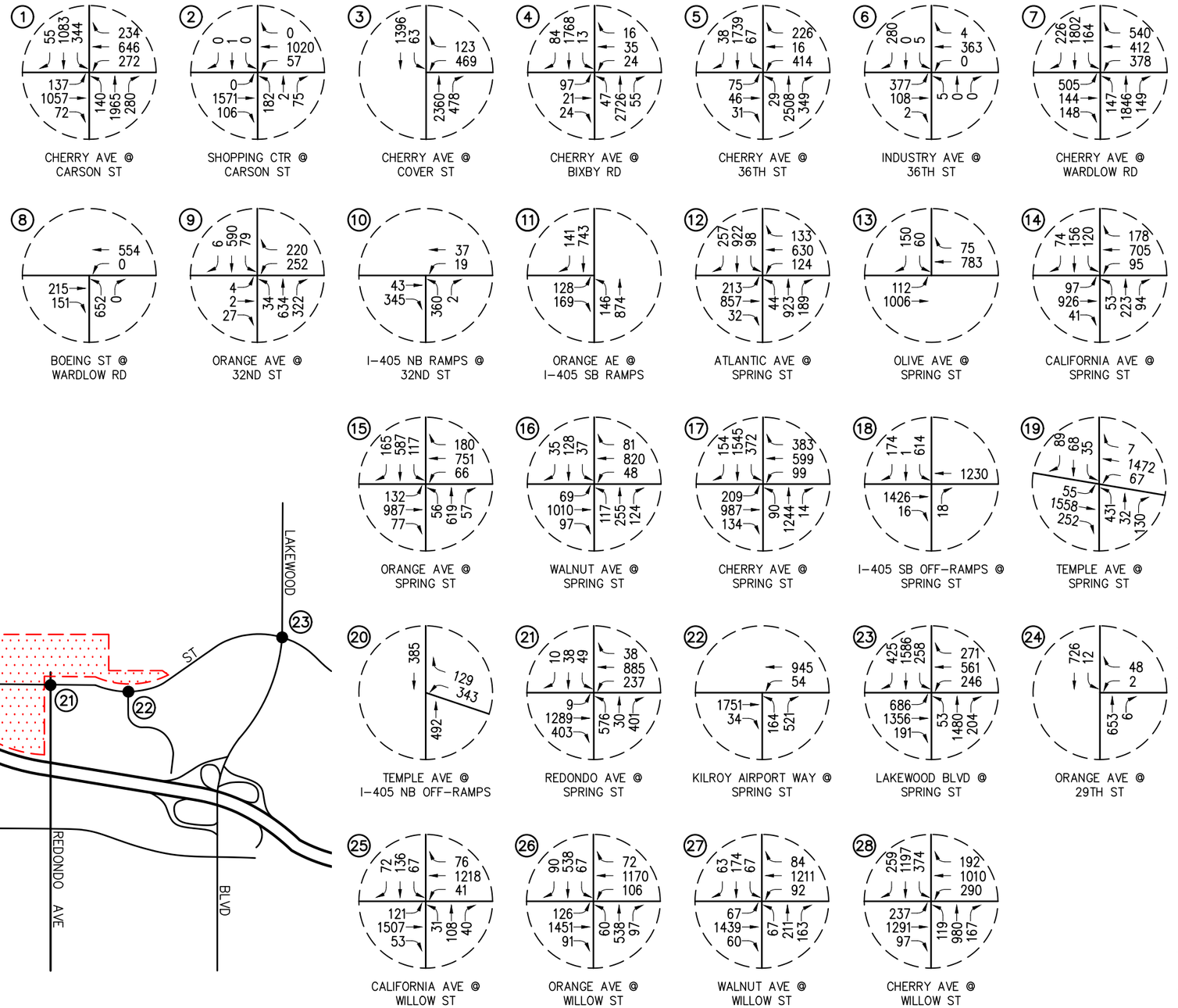


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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

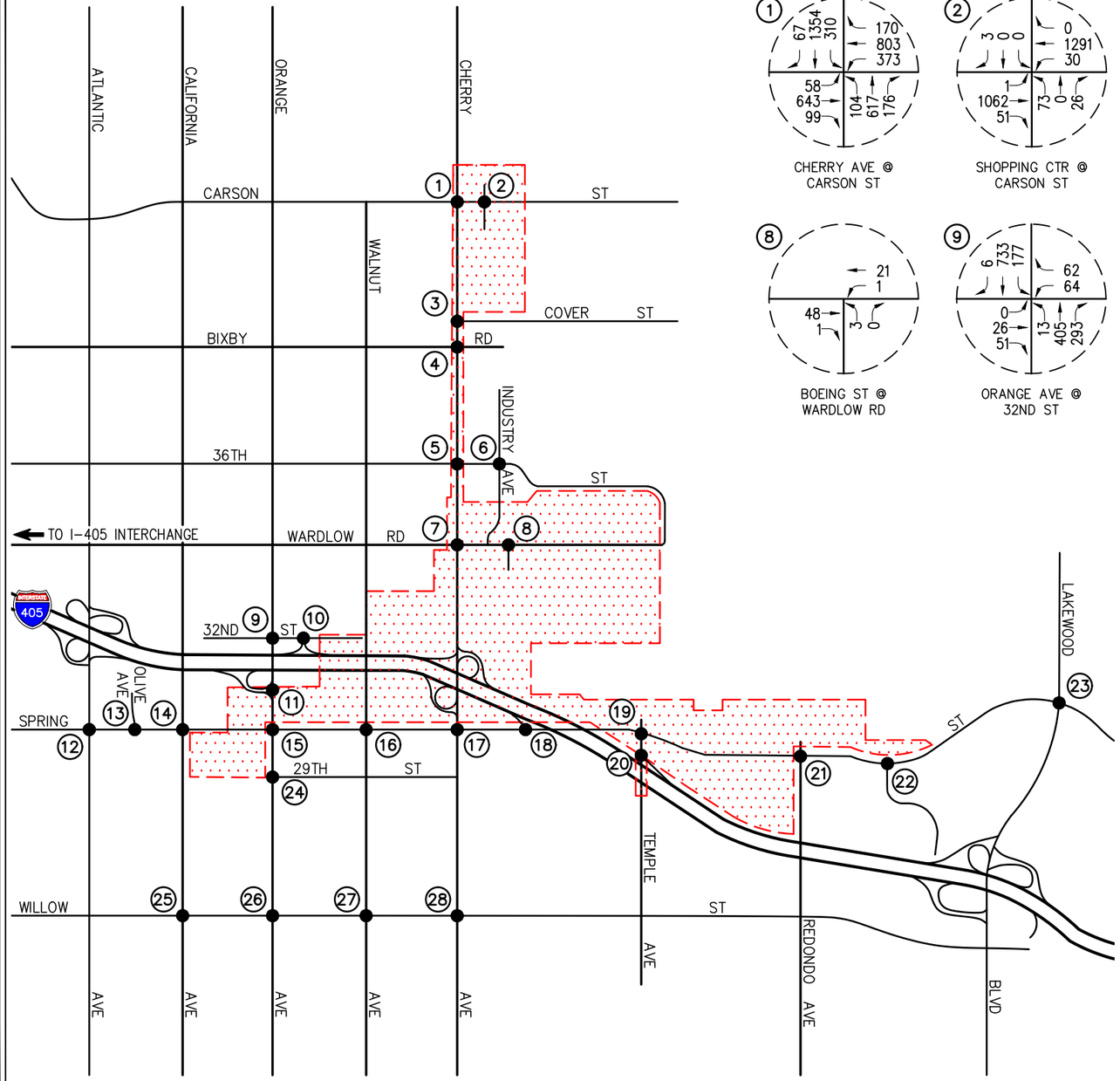
(#) = STUDY INTERSECTION

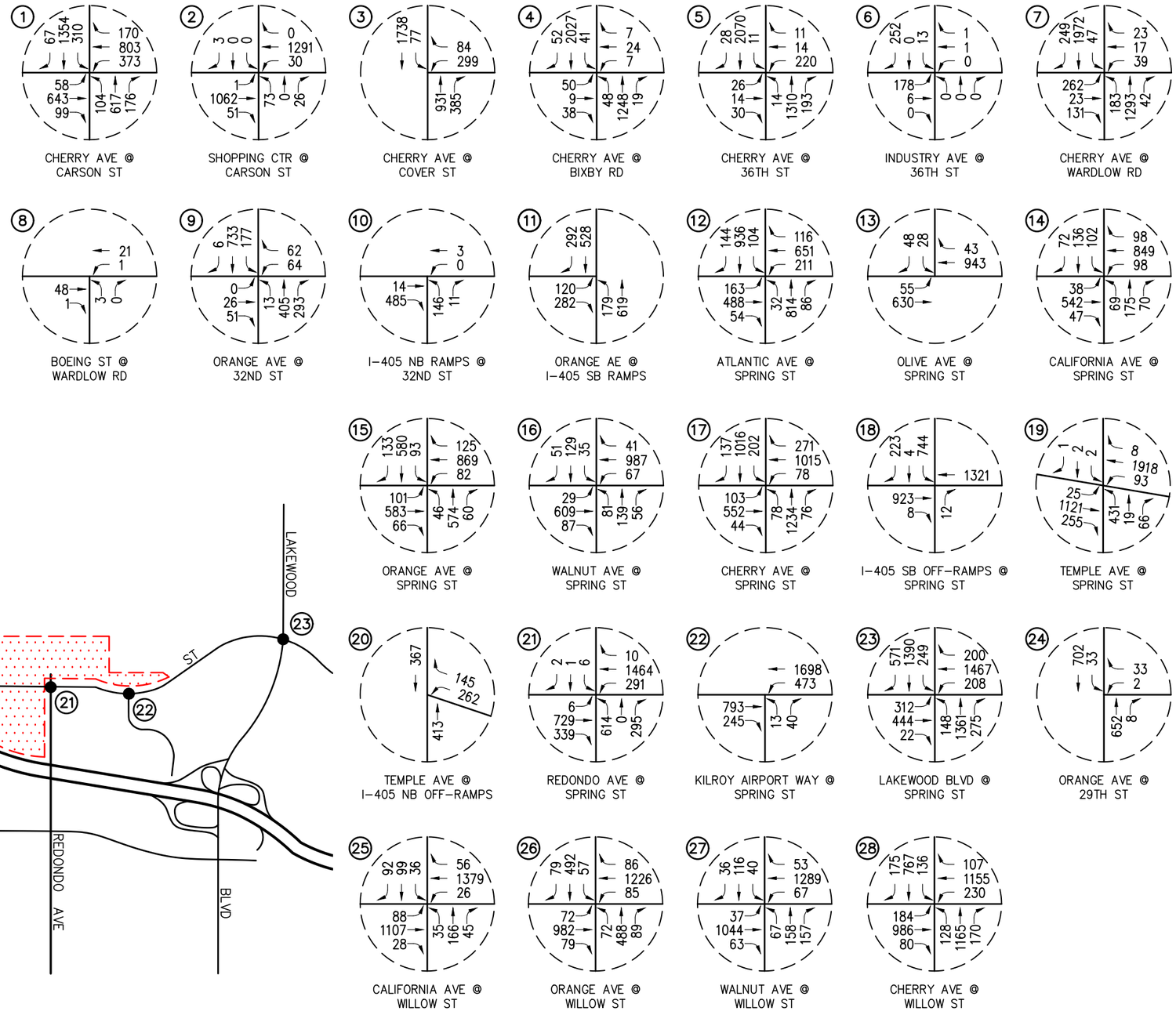
= PROJECT SITE

# FIGURE 16

## EXISTING (2018) + PROJECT PM PEAK HOUR TRAFFIC VOLUMES

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

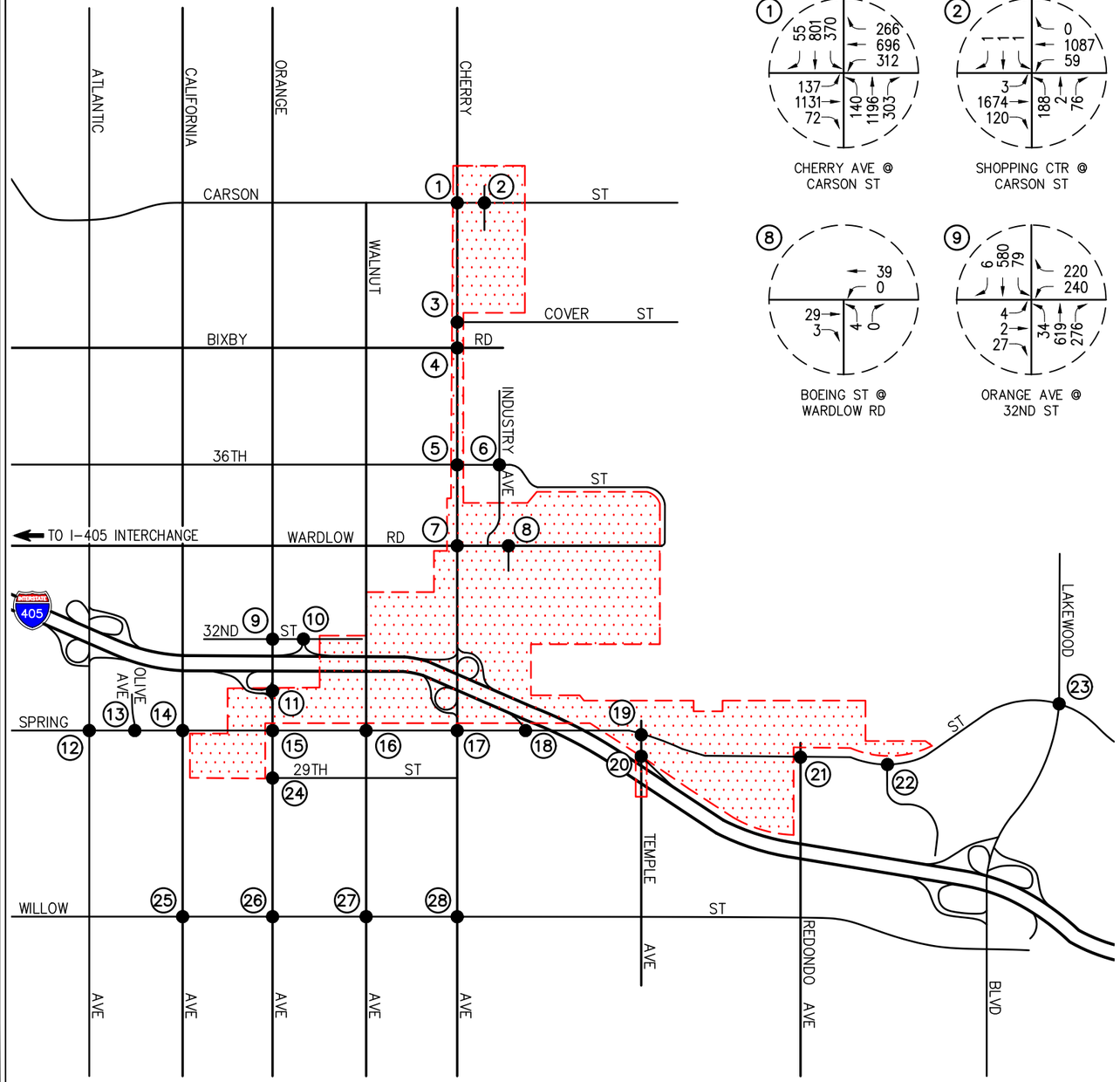
(#) = STUDY INTERSECTION

= PROJECT SITE

# FIGURE 17

## YEAR 2040 BASELINE AM PEAK HOUR TRAFFIC VOLUMES

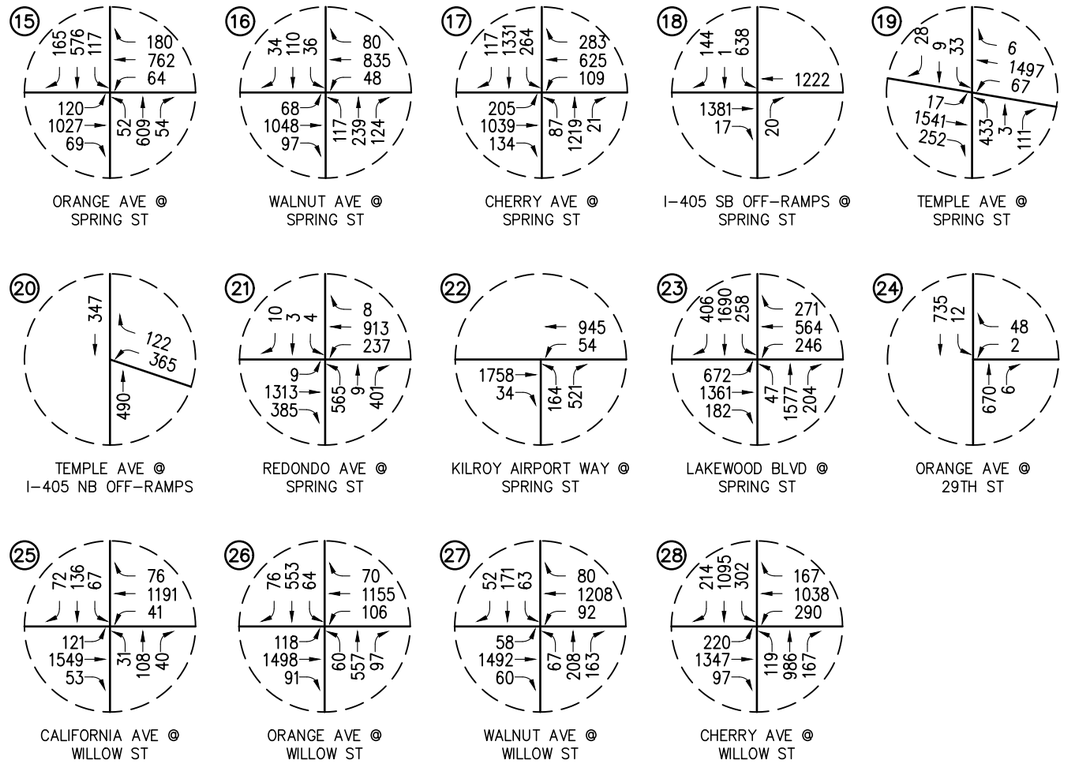
GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH







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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

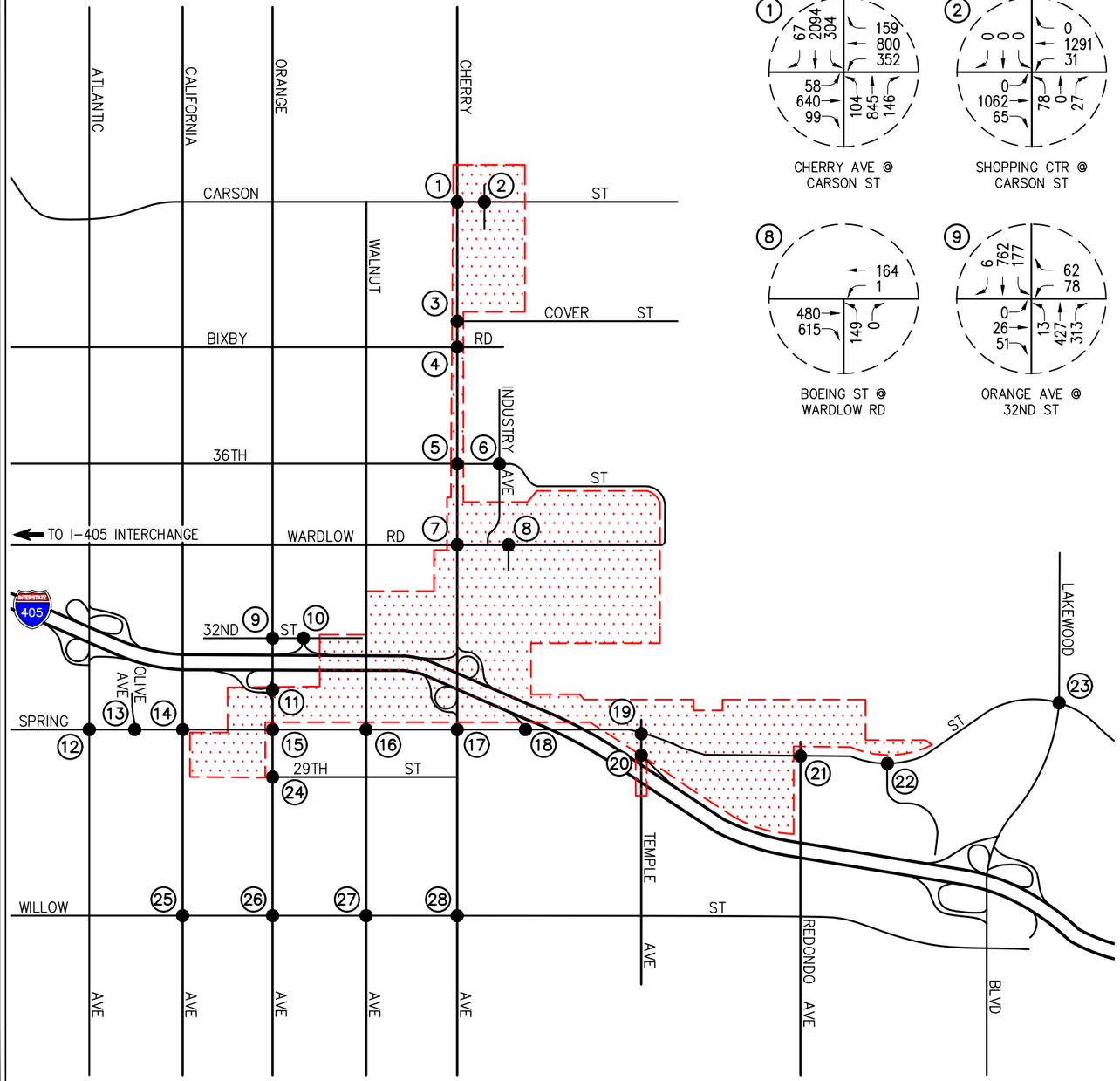
(#) = STUDY INTERSECTION

= PROJECT SITE

# FIGURE 18

## YEAR 2040 BASELINE PM PEAK HOUR TRAFFIC VOLUMES

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

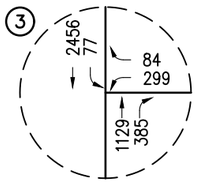




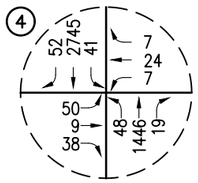

CHERRY AVE @ CARSON ST



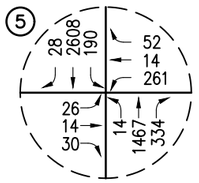
SHOPPING CTR @ CARSON ST



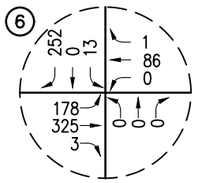
CHERRY AVE @ COVER ST



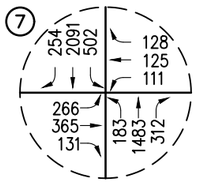
CHERRY AVE @ BIXBY RD



CHERRY AVE @ 36TH ST



INDUSTRY AVE @ 36TH ST



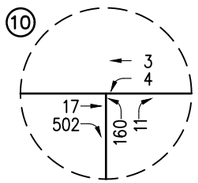
CHERRY AVE @ WARDLOW RD



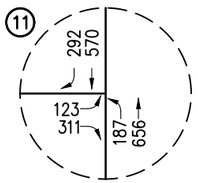
BOEING ST @ WARDLOW RD



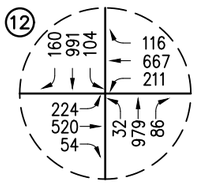
ORANGE AVE @ 32ND ST



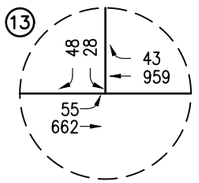
I-405 NB RAMPS @ 32ND ST



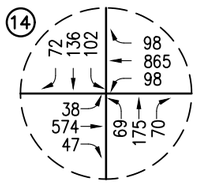
ORANGE AE @ I-405 SB RAMPS



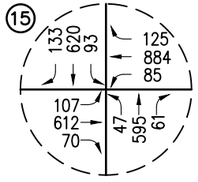
ATLANTIC AVE @ SPRING ST



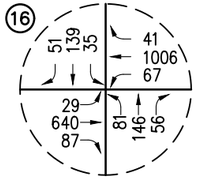
OLIVE AVE @ SPRING ST



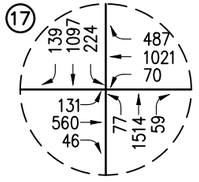
CALIFORNIA AVE @ SPRING ST



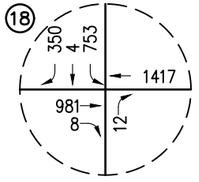
ORANGE AVE @ SPRING ST



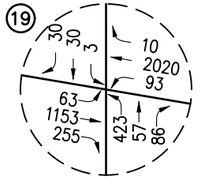
WALNUT AVE @ SPRING ST



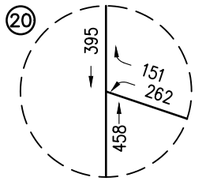
CHERRY AVE @ SPRING ST



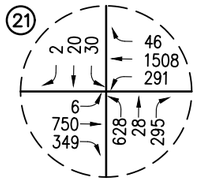
I-405 SB OFF-RAMPS @ SPRING ST



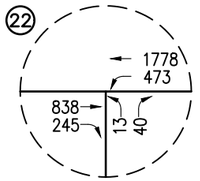
TEMPLE AVE @ SPRING ST



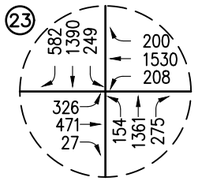
TEMPLE AVE @ I-405 NB OFF-RAMPS



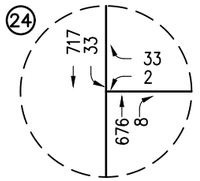
REDONDO AVE @ SPRING ST



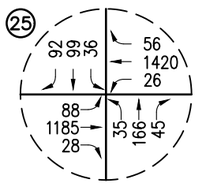
KILROY AIRPORT WAY @ SPRING ST



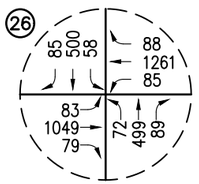
LAKEWOOD BLVD @ SPRING ST



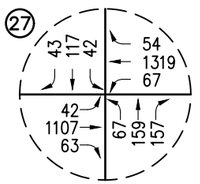
ORANGE AVE @ 29TH ST



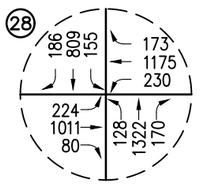
CALIFORNIA AVE @ WILLOW ST



ORANGE AVE @ WILLOW ST



WALNUT AVE @ WILLOW ST



CHERRY AVE @ WILLOW ST

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

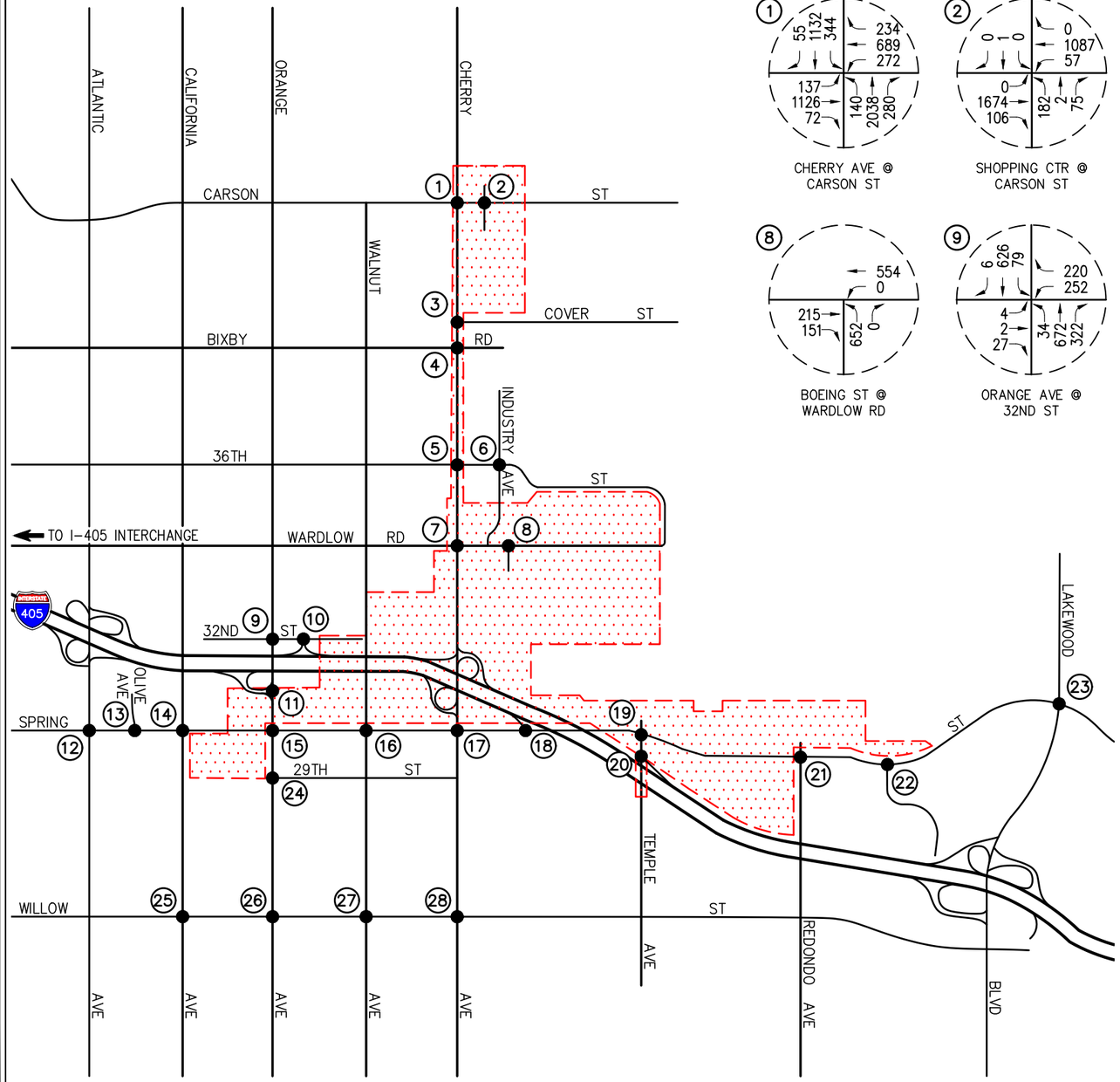
(#) = STUDY INTERSECTION

= PROJECT SITE

# FIGURE 19

## YEAR 2040 + PROJECT AM PEAK HOUR TRAFFIC VOLUMES

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH







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N NO SCALE

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

# FIGURE 20

## YEAR 2040 + PROJECT PM PEAK HOUR TRAFFIC VOLUMES

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

# 5.0 TRAFFIC IMPACT ANALYSIS

The relative impact of the Project during the weekday AM and PM peak hours was evaluated based on analysis of future operating conditions at the 28 key intersections, without, then with, the Project. The previously discussed capacity analysis procedures were utilized to investigate the delay/volume-to-capacity relationships and service level characteristics at each study intersection. The significance of the potential impacts of the Project at each key intersection was then evaluated using the significant traffic impact criteria described below.

## 5.1 Significant Impact Criteria

City of Long Beach, City of Signal Hill and City of Lakewood Intersections:

According to the City of Long Beach, City of Signal Hill and City of Lakewood significant impact criteria, impacts to local and regional transportation systems are considered significant if:

*Signalized Intersections:*

- The project causes a study intersection to deteriorate from Level of Service (LOS) D to LOS E or F. The City of Long Beach, City of Signal Hill, and City of Lakewood considers LOS D (ICU = 0.801 - 0.900) to be the minimum acceptable LOS for all intersections; or

- The project increases traffic demand at the study intersection by 2% of capacity (ICU increase ≥ 0.020), causing or worsening LOS E or F (ICU > 0.901) when an intersection is operating at LOS E or F in the baseline condition.

*Unsignalized Intersections:*

For unsignalized intersections, an impact is defined to be significant if:

- The project causes an intersection operating at LOS D or better to degrade to LOS E or F, and the traffic signal warrant analysis determines that a traffic signal is justified.

State of California (Caltrans) Intersections (further discussed in *Section 6.0*):

Caltrans "endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities"; it does not require that LOS "D" (shall) be maintained. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. For this analysis, LOS D is the target level of service standard and will be utilized to assess the project impacts at the state-controlled study intersections.

The Caltrans *Guide for the Preparation of Traffic Impact Studies, dated December 2002* states that if an existing State-owned facility operates at less than the target LOS (i.e. LOS D); the existing service level should be maintained. Based on Caltrans Criteria, a Project's impact is considered significant if the Project causes the LOS to change from an acceptable LOS (i.e., LOS D or better) to a deficient LOS (i.e. LOS E or F).

CMP Freeway Mainline Segments (further discussed in *Section 8.0*):

For purposes of the CMP, a significant impact occurs when the proposed Project increases traffic demand on a CMP facility by two percent of capacity (V/C ≥ 0.02), causing LOS F (V/C > 1.00). If the facility is already at LOS F, a significant impact occurs when the proposed Project increases traffic demand on a CMP facility by two percent of capacity (V/C ≥ 0.02).

## 5.2 Existing (2018) Plus Project Traffic Conditions

***Table 7*** summarizes the peak hour Level of Service results at the 28 key study intersections for existing (2018) plus project traffic conditions. The first column (1) of ICU/Delay/LOS values in *Table 7* presents a summary of existing AM and PM peak hour traffic conditions (which were also presented in *Table 3*). The second column (2) lists existing (2018) plus project traffic conditions with current intersection geometry/lane configurations and shows the increase in ICU/Delay value due to the added peak hour project trips and indicates whether the traffic associated with the Project will have a significant impact based on the significant impact criteria defined in this report. The third column (3) indicates the anticipated level of service with potential mitigation measures, if any.

### 5.2.1 *Existing Traffic Conditions*

As previously presented in *Table 3*, the intersection of Orange Avenue/I-405 SB Ramps currently operates at unacceptable LOS F in the AM and PM peak hour. The remaining 27 key study intersections currently operate at LOS D or better during the weekday AM and PM peak hours. ***Figure 21*** illustrates the deficient location under Existing (2018) conditions.

### 5.2.2 *Existing Plus Project Traffic Conditions*

Review of Column 2 of *Table 7* indicates that six (6) of the key study intersections are forecast to operate adversely with the addition of project traffic. The remaining twenty-two (22) intersections are forecast to operate at acceptable LOS D or better during the weekday AM and PM peak hours with the addition of project traffic. The intersections operating adversely are as follows:

| | AM Peak Hour | | PM Peak Hour | |
|---|---|---|---|---|
| **Key Intersection** | **ICU/Delay** | **LOS** | **ICU/Delay** | **LOS** |
| 1. Cherry Avenue at Carson Street | -- | -- | 0.958 | E |
| 3. Cherry Avenue at Cover Street | -- | -- | 1.040 | F |
| 5. Cherry Avenue at 36th Street | -- | -- | 0.983 | E |
| 7. Cherry Avenue at Wardlow Road | 1.116 | F | 1.294 | F |
| 9. Orange Avenue at 32nd Street | -- | -- | 0.925 | E |
| 11. Orange Avenue at I-405 SB Ramps | 126.8 s/v | F | 321.5 s/v | F |

Review of Column 2 indicates that five (5) of the six (6) intersections operating adversely are considered significantly impacted when compared to the LOS standards and significant impact criteria specified in this report. ***Figure 22*** illustrates the deficient and significantly impacted locations under Existing (2018) plus Project traffic conditions.

Review of Column 3 indicates that the implementation of potential mitigation measures at the significantly impacted intersections will completely offset the project's impact and improve the LOS to acceptable conditions (detailed in *Section 7* of this report).

Although the intersection of Orange Avenue/I-405 SB Ramps is forecast to operate at unacceptable LOS F in the AM and PM peak hour, the intersection is not considered significantly impacted when compared to the LOS standards and significant impact criteria specified in this report. Since the study intersection currently operates at an adverse LOS under existing traffic conditions, the Project's impact is not considered to be a significant impact.

*Appendix B* presents the existing plus project weekday ICU/Delay LOS calculations for the key study intersections.

## TABLE 7
## EXISTING (2018) PLUS PROJECT INTERSECTION PEAK HOUR LEVELS OF SERVICE

| # | Key Intersection | Time Period | (1) Existing (Year 2018) ICU | Delay (s/v) | LOS | Deficient? | (2) Existing plus Project (Year 2018) ICU | Delay (s/v) | LOS | ICU or Delay Change (2) - (1) | Significant Impact? | (3) Existing plus Project (Year 2018) With Potential Mitigation Measures ICU | Delay (s/v) | LOS | ICU or Delay Change (3) - (2) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **Cherry Avenue at** | AM | 0.706 | -- | C | No | 0.852 | -- | D | 0.146 | No | 0.852 | -- | D | 0.000 |
| | **Carson Street (Long Beach)** | PM | 0.807 | -- | D | No | **0.958** | -- | **E** | **0.151** | **Yes** | 0.900 | -- | D | -0.058 |
| 2 | Shopping Center at | AM | 0.401 | -- | A | No | 0.401 | -- | A | 0.000 | No | -- | -- | -- | -- |
| | Carson Street (Long Beach) | PM | 0.609 | -- | B | No | 0.600 | -- | B | -0.009 | No | -- | -- | -- | -- |
| **3** | **Cherry Avenue at** | AM | 0.544 | -- | A | No | 0.693 | -- | B | 0.149 | No | 0.693 | -- | B | 0.000 |
| | **Cover Street (Long Beach/Lakewood)** | PM | 0.790 | -- | C | No | **1.040** | -- | **F** | **0.250** | **Yes** | 0.893 | -- | D | -0.147 |
| 4 | Cherry Avenue at | AM | 0.602 | -- | B | No | 0.752 | -- | C | 0.150 | No | -- | -- | -- | -- |
| | Bixby Road (Long Beach/Lakewood) | PM | 0.625 | -- | B | No | 0.791 | -- | C | 0.166 | No | -- | -- | -- | -- |
| **5** | **Cherry Avenue at** | AM | 0.640 | -- | B | No | 0.766 | -- | C | 0.126 | No | 0.750 | -- | C | -0.016 |
| | **36th Street (Long Beach/Lakewood)** | PM | 0.748 | -- | C | No | **0.983** | -- | **E** | **0.235** | **Yes** | 0.881 | -- | D | -0.102 |
| 6 | Industry Avenue at | AM | 0.369 | -- | A | No | 0.516 | -- | A | 0.147 | No | -- | -- | -- | -- |
| | 36th Street (Lakewood) | PM | 0.513 | -- | A | No | 0.741 | -- | C | 0.228 | No | -- | -- | -- | -- |
| **7** | **Cherry Avenue at** | AM | 0.766 | -- | C | No | **1.116** | -- | **F** | **0.350** | **Yes** | 0.832 | -- | D | -0.284 |
| | **Wardlow Road (Long Beach)** | PM | 0.857 | -- | D | No | **1.294** | -- | **F** | **0.437** | **Yes** | 0.854 | -- | D | -0.440 |
| 8 | Boeing at | AM | 0.117 | -- | A | No | 0.495 | -- | A | 0.378 | No | -- | -- | -- | -- |
| | Wardlow Road (Long Beach) | PM | 0.114 | -- | A | No | 0.500 | -- | A | 0.386 | No | -- | -- | -- | -- |
| **9** | **Orange Avenue at** | AM | 0.719 | -- | C | No | 0.754 | -- | C | 0.035 | No | 0.657 | -- | B | -0.097 |
| | **32nd Street (Signal Hill)** | PM | 0.856 | -- | D | No | **0.925** | -- | **E** | **0.069** | **Yes** | 0.724 | -- | C | -0.201 |
| 10 | I-405 Northbound Ramps at | AM | -- | 11.2 | B | No | -- | 11.6 | B | 0.4 | No | -- | -- | -- | -- |
| | 32nd Street (Signal Hill/Caltrans) | PM | -- | 19.7 | C | No | -- | 24.7 | C | 5.0 | No | -- | -- | -- | -- |
| **11** | **Orange Avenue at** | AM | -- | **94.9** | **F** | **Yes** | -- | **126.8** | **F** | **31.9** | No [a] | -- | -- | -- | -- |
| | **I-405 Southbound Ramps (Long Beach/Caltrans)** | PM | -- | **188.0** | **F** | **Yes** | -- | **321.5** | **F** | **133.5** | No [a] | -- | -- | -- | -- |
| 12 | Atlantic Avenue at | AM | 0.732 | -- | C | No | 0.818 | -- | D | 0.086 | No | -- | -- | -- | -- |
| | Spring Street (Signal Hill/Long Beach) | PM | 0.828 | -- | D | No | 0.854 | -- | D | 0.026 | No | -- | -- | -- | -- |

## TABLE 7 (CONTINUED)
## EXISTING (2018) PLUS PROJECT INTERSECTION PEAK HOUR LEVELS OF SERVICE

| # | Key Intersection | Time Period | (1) Existing (Year 2018) ICU | Delay (s/v) | LOS | Deficient? | (2) Existing plus Project (Year 2018) ICU | Delay (s/v) | LOS | ICU or Delay Change (2) - (1) | Significant Impact? | (3) Existing plus Project (Year 2018) With Potential Mitigation Measures ICU | Delay (s/v) | LOS | ICU or Delay Change (3) - (2) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | Olive Avenue at | AM | 0.454 | -- | A | No | 0.459 | -- | A | 0.005 | No | -- | -- | -- | -- |
| | Spring Street (Signal Hill) | PM | 0.519 | -- | A | No | 0.532 | -- | A | 0.013 | No | -- | -- | -- | -- |
| 14 | California Avenue at | AM | 0.590 | -- | A | No | 0.595 | -- | A | 0.005 | No | -- | -- | -- | -- |
| | Spring Street (Signal Hill/Long Beach) | PM | 0.714 | -- | C | No | 0.722 | -- | C | 0.008 | No | -- | -- | -- | -- |
| 15 | Orange Avenue at | AM | 0.826 | -- | D | No | 0.860 | -- | D | 0.034 | No | -- | -- | -- | -- |
| | Spring Street (Signal Hill/Long Beach) | PM | 0.833 | -- | D | No | 0.876 | -- | D | 0.043 | No | -- | -- | -- | -- |
| 16 | Walnut Avenue at | AM | 0.584 | -- | A | No | 0.596 | -- | A | 0.012 | No | -- | -- | -- | -- |
| | Spring Street (Signal Hill/Long Beach) | PM | 0.717 | -- | C | No | 0.736 | -- | C | 0.019 | No | -- | -- | -- | -- |
| 17 | Cherry Avenue at | AM | 0.690 | -- | B | No | 0.797 | -- | C | 0.107 | No | -- | -- | -- | -- |
| | Spring Street (Signal Hill/Long Beach) | PM | 0.738 | -- | C | No | 0.806 | -- | D | 0.068 | No | -- | -- | -- | -- |
| 18 | I-405 Southbound Off-Ramp at | AM | 0.732 | -- | C | No | 0.765 | -- | C | 0.033 | No | -- | -- | -- | -- |
| | Spring Street (Signal Hill/Long Beach/Caltrans) | PM | 0.719 | -- | C | No | 0.764 | -- | C | 0.045 | No | -- | -- | -- | -- |
| 19 | Temple Avenue at | AM | 0.644 | -- | B | No | 0.704 | -- | C | 0.060 | No | -- | -- | -- | -- |
| | Spring Street (Long Beach) | PM | 0.668 | -- | B | No | 0.729 | -- | C | 0.061 | No | -- | -- | -- | -- |
| 20 | Temple Avenue at | AM | 0.375 | -- | A | No | 0.389 | -- | A | 0.014 | No | -- | -- | -- | -- |
| | I-405 Northbound Off-Ramp (Long Beach/Caltrans) | PM | 0.458 | -- | A | No | 0.468 | -- | A | 0.010 | No | -- | -- | -- | -- |
| 21 | Redondo Avenue at | AM | 0.631 | -- | B | No | 0.657 | -- | B | 0.026 | No | -- | -- | -- | -- |
| | Spring Street (Long Beach) | PM | 0.720 | -- | C | No | 0.765 | -- | C | 0.045 | No | -- | -- | -- | -- |
| 22 | Kilroy Airport Way at | AM | 0.612 | -- | B | No | 0.637 | -- | B | 0.025 | No | -- | -- | -- | -- |
| | Spring Street (Long Beach) | PM | 0.815 | -- | D | No | 0.847 | -- | D | 0.032 | No | -- | -- | -- | -- |
| 23 | Lakewood Boulevard at | AM | 0.818 | -- | D | No | 0.838 | -- | D | 0.020 | No | -- | -- | -- | -- |
| | Spring Street (Long Beach) | PM | 0.849 | -- | D | No | 0.857 | -- | D | 0.008 | No | -- | -- | -- | -- |
| 24 | Orange Avenue at | AM | -- | 14.5 | B | No | -- | 14.9 | B | 0.4 | No | -- | -- | -- | -- |
| | 29th Street (Signal Hill/Long Beach) | PM | -- | 14.9 | B | No | -- | 15.4 | C | 0.5 | No | -- | -- | -- | -- |

## TABLE 7 (CONTINUED)
## EXISTING (2018) PLUS PROJECT INTERSECTION PEAK HOUR LEVELS OF SERVICE

| # | Key Intersection | Time Period | (1) Existing (Year 2018) | | | | (2) Existing plus Project (Year 2018) | | | | | (3) Existing plus Project (Year 2018) With Potential Mitigation Measures | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | ICU | Delay (s/v) | LOS | Deficient? | ICU | Delay (s/v) | LOS | ICU or Delay Change (2) - (1) | Significant Impact? | ICU | Delay (s/v) | LOS | ICU or Delay Change (3) - (2) |
| 25 | California Avenue at | AM | 0.613 | -- | B | No | 0.621 | -- | B | 0.008 | No | -- | -- | -- | -- |
| | Willow Street (Signal Hill/Long Beach) | PM | 0.593 | -- | A | No | 0.604 | -- | B | 0.011 | No | -- | -- | -- | -- |
| 26 | Orange Avenue at | AM | 0.736 | -- | C | No | 0.756 | -- | C | 0.020 | No | -- | -- | -- | -- |
| | Willow Street (Signal Hill/Long Beach) | PM | 0.845 | -- | D | No | 0.866 | -- | D | 0.021 | No | -- | -- | -- | -- |
| 27 | Walnut Avenue at | AM | 0.510 | -- | A | No | 0.521 | -- | A | 0.011 | No | -- | -- | -- | -- |
| | Willow Street (Signal Hill) | PM | 0.617 | -- | B | No | 0.629 | -- | B | 0.012 | No | -- | -- | -- | -- |
| 28 | Cherry Avenue at | AM | 0.687 | -- | B | No | 0.758 | -- | C | 0.071 | No | -- | -- | -- | -- |
| | Willow Street (Signal Hill) | PM | 0.818 | -- | D | No | 0.868 | -- | D | 0.050 | No | -- | -- | -- | -- |

Notes:

LOS = Level of Service, please refer to *Tables 1* and *2* for the LOS definitions

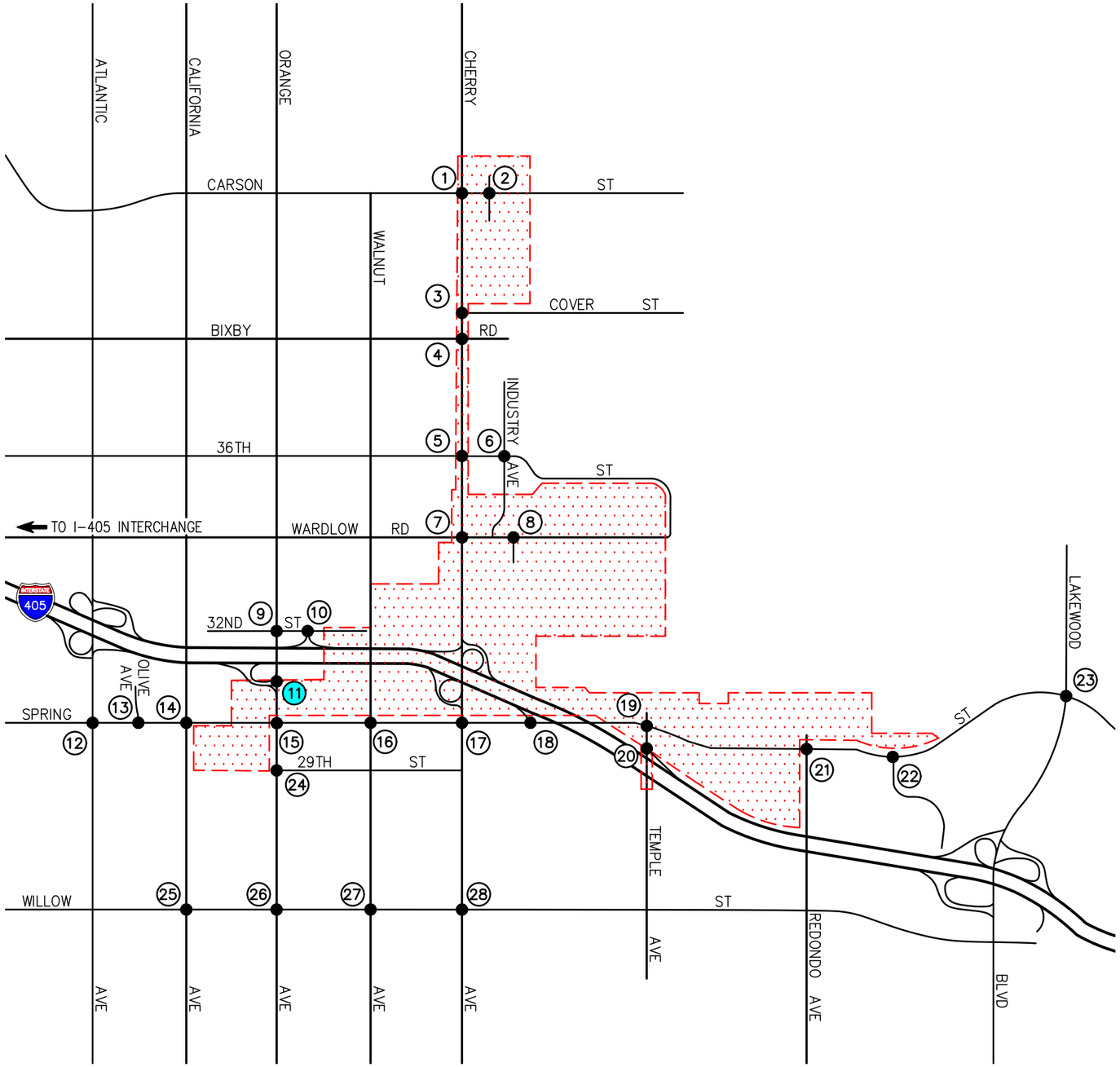
ICU = Intersection Capacity Utilization

s/v = seconds per vehicle (delay)

= Deficient LOS based on City's LOS standards.

= Deficient LOS and Significant Impact based on City's LOS standards.

[a] An unsignalized intersection impact is considered to be significant if the project causes an intersection at LOS D or better to degrade to LOS E or F, and the traffic signal warrant analysis determines that a signal is justified.

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KEY

(#) = STUDY INTERSECTION

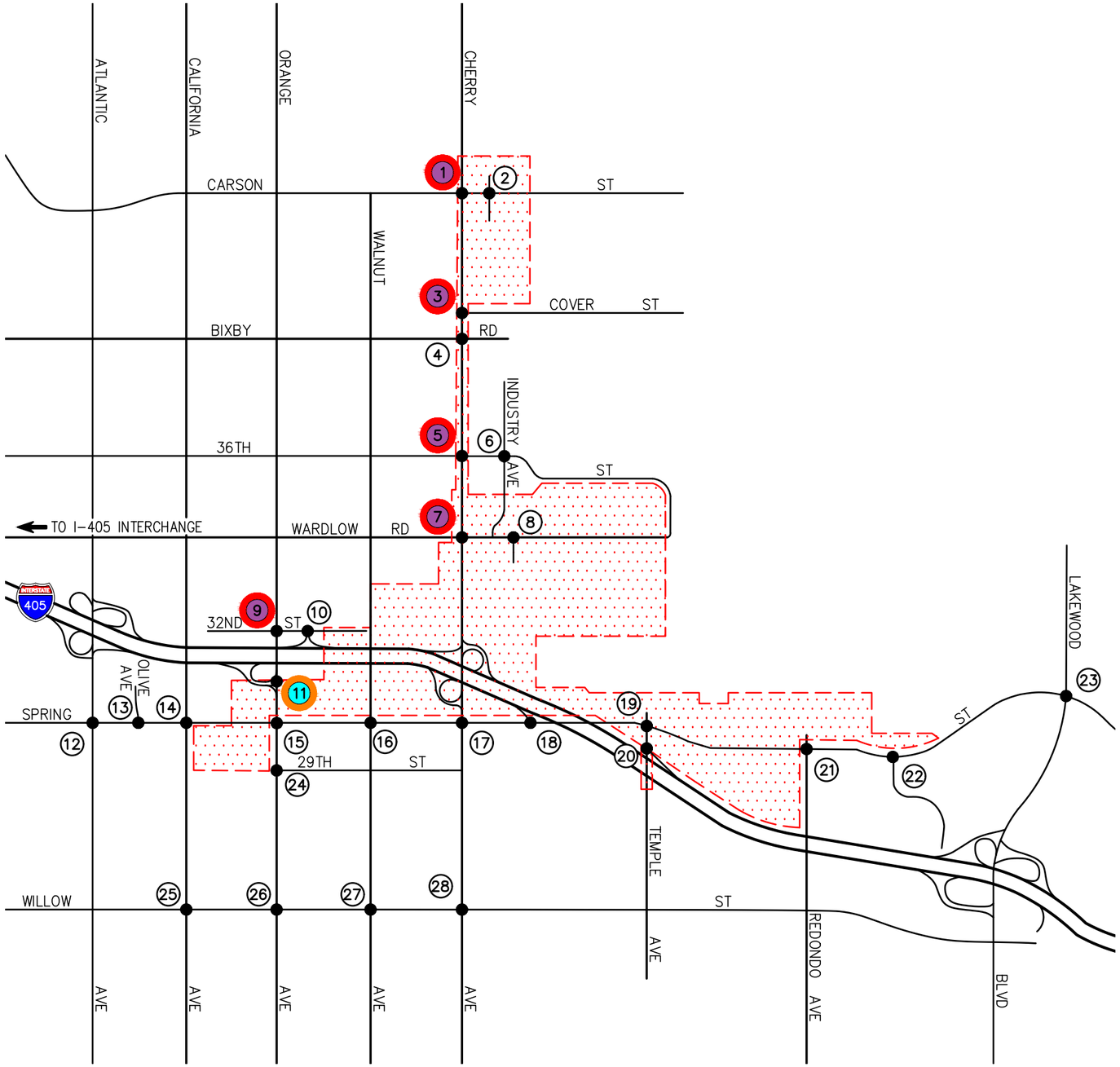
(#) = DEFICIENT LOS UNDER EXISTING (2018)

= PROJECT SITE

# FIGURE 21

## EXISTING (2018) DEFICIENT LOS SUMMARY

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

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N NO SCALE

KEY

- = PROJECT SITE
- (#) = STUDY IDENTIFICATION NUMBER
- (#) = DEFICIENT LOS UNDER EXISTING (2018)
- (#) = DEFICIENT LOS UNDER EXISTING (2018) + PROJECT
- (#) = DEFICIENT LOS UNDER EXISTING (2018) + PROJECT AND IMPACTED INTERSECTION

# FIGURE 22

## EXISTING (2018) + PROJECT DEFICIENT LOS SUMMARY

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

## 5.3 Year 2040 Baseline Traffic Conditions

***Table 8*** summarizes the peak hour Level of Service results at the 28 key study intersections for the Year 2040 Baseline traffic conditions. The first column (1) of ICU/Delay/LOS values in *Table 8* presents a summary of existing AM and PM peak hour traffic conditions (which were also presented in *Tables 3 and 7*). The second column (2) lists future Year 2040 Baseline traffic conditions, with planned improvements implemented identified by the City, without any traffic generated by the proposed Project. The third column (3) presents future forecast traffic conditions with the addition of traffic generated by the proposed Project and shows the increase in ICU/Delay value due to the added peak hour project trips and indicates whether the traffic associated with the Project will have a significant impact based on the LOS standards and significant impact criteria defined in this report. The fourth column (4) indicates the anticipated level of service with potential mitigation measures, if any.

### 5.3.1 *Year 2040 Baseline Traffic Conditions*

Review of Column 2 of *Table 8* indicates that three (3) of the key study intersections are forecast to operate at unacceptable LOS E during the PM peak hour in Year 2040 Baseline traffic conditions. The remaining 25 key study intersections are forecast to operate at acceptable LOS D or better during the AM and PM peak hours for Year 2040 Baseline traffic conditions. ***Figure 23*** illustrates the deficient location under Year 2040 Baseline conditions. The intersections operating adversely are as follows:

| | AM Peak Hour | | PM Peak Hour | |
|---|---|---|---|---|
| **Key Intersection** | **ICU/Delay** | **LOS** | **ICU/Delay** | **LOS** |
| 15. Orange Avenue at Spring Street | -- | -- | 0.936 | E |
| 21. Redondo Avenue at Spring Street | -- | -- | 0.979 | E |
| 26. Orange Avenue at Willow Street | -- | -- | 0.928 | E |

### 5.3.2 *Year 2040 Plus Project Traffic Conditions*

Review of Column 3 of *Table 8* indicates that ten (10) of the key study intersections are forecast to operate adversely with the addition of project traffic. The remaining eighteen (18) intersections are forecast to operate at acceptable LOS D or better during the weekday AM and PM peak hours with the addition of project traffic. The intersections operating adversely are as follows:

| | AM Peak Hour | | PM Peak Hour | |
|---|---|---|---|---|
| **Key Intersection** | **ICU/Delay** | **LOS** | **ICU/Delay** | **LOS** |
| 1. Cherry Avenue at Carson Street | -- | -- | 0.988 | E |
| 3. Cherry Avenue at Cover Street | -- | -- | 1.072 | F |
| 5. Cherry Avenue at 36th Street | -- | -- | 1.009 | F |
| 7. Cherry Avenue at Wardlow Road | 1.141 | F | 1.329 | F |
| 9. Orange Avenue at 32nd Street | -- | -- | 0.949 | E |
| 12. Atlantic Avenue at Spring Street | -- | -- | 0.910 | E |
| 15. Orange Avenue at Spring Street | 0.912 | E | 0.977 | E |
| 19. Temple Avenue at Spring Street | 0.940 | E | 0.947 | E |
| 21. Redondo Avenue at Spring Street | -- | -- | 1.033 | F |
| 26. Orange Avenue at Willow Street | -- | -- | 0.958 | E |

Review of Column 3 indicates that the ten (10) intersections operating adversely are considered significantly impacted when compared to the LOS standards and significant impact criteria specified in this report. ***Figure 24*** illustrates the deficient and significantly impacted locations under Year 2040 plus Project traffic conditions.

Review of Column 4 indicates that the implementation of potential mitigation measures at the significantly impacted intersections will completely offset the project's impact and improve the LOS to acceptable conditions (detailed in *Section 7* of this report).

*Appendix B* presents the Year 2040 plus project weekday ICU/Delay LOS calculations for the key study intersections.

## TABLE 8
## YEAR 2040 PLUS PROJECT INTERSECTION PEAK HOUR LEVELS OF SERVICE

| # | Key Intersection | Time Period | (1) Existing (Year 2018) ICU | Delay (s/v) | LOS | Deficient? | (2) Year 2040 Baseline ICU | Delay (s/v) | LOS | Deficient? | (3) Year 2040 plus Project ICU | Delay (s/v) | LOS | ICU or Delay Change (3) - (2) | Significant Impact? | (4) Year 2040 plus Project With Potential Mitigation Measures ICU | Delay (s/v) | LOS | ICU or Delay Change (4) - (3) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | **Cherry Avenue at** | AM | 0.706 | -- | C | No | 0.731 | -- | C | No | 0.877 | -- | D | 0.146 | No | 0.839 | -- | D | -0.038 |
| | **Carson Street (Long Beach)** | PM | 0.807 | -- | D | No | 0.837 | -- | D | No | **0.988** | -- | **E** | **0.151** | **Yes** | 0.863 | -- | D | -0.125 |
| 2 | Shopping Center at | AM | 0.401 | -- | A | No | 0.417 | -- | A | No | 0.418 | -- | A | 0.001 | No | -- | -- | -- | -- |
| | Carson Street (Long Beach) | PM | 0.609 | -- | B | No | 0.630 | -- | B | No | 0.621 | -- | B | -0.009 | No | -- | -- | -- | -- |
| **3** | **Cherry Avenue at** | AM | 0.544 | -- | A | No | 0.566 | -- | A | No | 0.715 | -- | C | 0.149 | No | 0.715 | -- | C | 0.000 |
| | **Cover Street (Long Beach/Lakewood)** | PM | 0.790 | -- | C | No | 0.822 | -- | D | No | **1.072** | -- | **F** | **0.250** | **Yes** | 0.815 | -- | D | -0.257 |
| 4 | Cherry Avenue at | AM | 0.602 | -- | B | No | 0.628 | -- | B | No | 0.778 | -- | C | 0.150 | No | -- | -- | -- | -- |
| | Bixby Road (Long Beach/Lakewood) | PM | 0.625 | -- | B | No | 0.651 | -- | B | No | 0.818 | -- | D | 0.167 | No | -- | -- | -- | -- |
| **5** | **Cherry Avenue at** | AM | 0.640 | -- | B | No | 0.666 | -- | B | No | 0.792 | -- | C | 0.126 | No | 0.776 | -- | C | -0.016 |
| | **36th Street (Long Beach/Lakewood)** | PM | 0.748 | -- | C | No | 0.774 | -- | C | No | **1.009** | -- | **F** | **0.235** | **Yes** | 0.889 | -- | D | -0.120 |
| 6 | Industry Avenue at | AM | 0.369 | -- | A | No | 0.369 | -- | A | No | 0.516 | -- | A | 0.147 | No | -- | -- | -- | -- |
| | 36th Street (Lakewood) | PM | 0.513 | -- | A | No | 0.513 | -- | A | No | 0.741 | -- | C | 0.228 | No | -- | -- | -- | -- |
| **7** | **Cherry Avenue at** | AM | 0.766 | -- | C | No | 0.792 | -- | C | No | **1.141** | -- | **F** | **0.349** | **Yes** | 0.845 | -- | D | -0.296 |
| | **Wardlow Road (Long Beach)** | PM | 0.857 | -- | D | No | 0.891 | -- | D | No | **1.329** | -- | **F** | **0.438** | **Yes** | 0.871 | -- | D | -0.458 |
| 8 | Boeing at | AM | 0.117 | -- | A | No | 0.117 | -- | A | No | 0.495 | -- | A | 0.378 | No | -- | -- | -- | -- |
| | Wardlow Road (Long Beach) | PM | 0.114 | -- | A | No | 0.114 | -- | A | No | 0.500 | -- | A | 0.386 | No | -- | -- | -- | -- |
| **9** | **Orange Avenue at** | AM | 0.719 | -- | C | No | 0.735 | -- | C | No | 0.770 | -- | C | 0.035 | No | 0.685 | -- | B | -0.085 |
| | **32nd Street (Signal Hill)** | PM | 0.856 | -- | D | No | 0.879 | -- | D | No | **0.949** | -- | **E** | **0.070** | **Yes** | 0.748 | -- | C | -0.201 |
| 10 | I-405 Northbound Ramps at | AM | -- | 11.2 | B | No | -- | 11.5 | B | No | -- | 11.9 | B | 0.4 | No | -- | -- | -- | -- |
| | 32nd Street (Signal Hill/Caltrans) | PM | -- | 19.7 | C | No | -- | 22.6 | C | No | -- | 29.9 | D | 7.3 | No | -- | -- | -- | -- |
| **11** | **Orange Avenue at** | AM | -- | **94.9** | **F** | **Yes** | 0.644 | -- | B | No | 0.681 | -- | B | 0.037 | No | -- | -- | -- | -- |
| | **I-405 Southbound Ramps (Long Beach/Caltrans) [a]** | PM | -- | **188.0** | **F** | **Yes** | 0.556 | -- | A | No | 0.601 | -- | B | 0.045 | No | -- | -- | -- | -- |
| **12** | **Atlantic Avenue at** | AM | 0.732 | -- | C | No | 0.799 | -- | C | No | 0.883 | -- | D | 0.084 | No | 0.801 | -- | D | -0.082 |
| | **Spring Street (Signal Hill/Long Beach) [a]** | PM | 0.828 | -- | D | No | 0.872 | -- | D | No | **0.910** | -- | **E** | **0.038** | **Yes** | 0.826 | -- | D | -0.084 |
| 13 | Olive Avenue at | AM | 0.454 | -- | A | No | 0.473 | -- | A | No | 0.478 | -- | A | 0.005 | No | -- | -- | -- | -- |
| | Spring Street (Signal Hill) | PM | 0.519 | -- | A | No | 0.535 | -- | A | No | 0.547 | -- | A | 0.012 | No | -- | -- | -- | -- |
| 14 | California Avenue at | AM | 0.590 | -- | A | No | 0.637 | -- | B | No | 0.642 | -- | B | 0.005 | No | -- | -- | -- | -- |
| | Spring Street (Signal Hill/Long Beach) [a] | PM | 0.714 | -- | C | No | 0.746 | -- | C | No | 0.753 | -- | C | 0.007 | No | -- | -- | -- | -- |
| **15** | **Orange Avenue at** | AM | 0.826 | -- | D | No | 0.891 | -- | D | No | **0.912** | -- | **E** | **0.021** | **Yes** | 0.747 | -- | C | -0.165 |
| | **Spring Street (Signal Hill/Long Beach) [a]** | PM | 0.833 | -- | D | No | **0.936** | -- | **E** | **Yes** | **0.977** | -- | **E** | **0.041** | **Yes** | 0.789 | -- | C | -0.188 |
| 16 | Walnut Avenue at | AM | 0.584 | -- | A | No | 0.603 | -- | B | No | 0.615 | -- | B | 0.012 | No | -- | -- | -- | -- |
| | Spring Street (Signal Hill/Long Beach) | PM | 0.717 | -- | C | No | 0.737 | -- | C | No | 0.756 | -- | C | 0.019 | No | -- | -- | -- | -- |
| 17 | Cherry Avenue at | AM | 0.690 | -- | B | No | 0.719 | -- | C | No | 0.823 | -- | D | 0.104 | No | -- | -- | -- | -- |
| | Spring Street (Signal Hill/Long Beach) | PM | 0.738 | -- | C | No | 0.769 | -- | C | No | 0.836 | -- | D | 0.067 | No | -- | -- | -- | -- |

## TABLE 8 (CONTINUED)
## YEAR 2040 PLUS PROJECT INTERSECTION PEAK HOUR LEVELS OF SERVICE

| # | Key Intersection | Time Period | (1) Existing (Year 2018) ICU | Delay (s/v) | LOS | Deficient? | (2) Year 2040 Baseline ICU | Delay (s/v) | LOS | Deficient? | (3) Year 2040 plus Project ICU | Delay (s/v) | LOS | ICU or Delay Change (3) - (2) | Significant Impact? | (4) Year 2040 plus Project With Potential Mitigation Measures ICU | Delay (s/v) | LOS | ICU or Delay Change (4) - (3) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 18 | I-405 Southbound Off-Ramp at | AM | 0.732 | -- | C | No | 0.773 | -- | C | No | 0.806 | -- | D | 0.033 | No | -- | -- | -- | -- |
| | Spring Street (Signal Hill/Long Beach/Caltrans) | PM | 0.719 | -- | C | No | 0.759 | -- | C | No | 0.804 | -- | D | 0.045 | No | -- | -- | -- | -- |
| **19** | **Temple Avenue at** | AM | 0.644 | -- | B | No | 0.869 | -- | D | No | **0.940** | -- | **E** | **0.071** | **Yes** | 0.729 | -- | C | -0.211 |
| | **Spring Street (Long Beach) [a]** | PM | 0.668 | -- | B | No | 0.874 | -- | D | No | **0.947** | -- | **E** | **0.073** | **Yes** | 0.873 | -- | D | -0.074 |
| 20 | Temple Avenue at | AM | 0.375 | -- | A | No | 0.393 | -- | A | No | 0.407 | -- | A | 0.014 | No | -- | -- | -- | -- |
| | I-405 Northbound Off-Ramp (Long Beach/Caltrans) | PM | 0.458 | -- | A | No | 0.481 | -- | A | No | 0.491 | -- | A | 0.010 | No | -- | -- | -- | -- |
| **21** | **Redondo Avenue at** | AM | 0.631 | -- | B | No | 0.833 | -- | D | No | 0.862 | -- | D | 0.029 | No | 0.826 | -- | D | -0.036 |
| | **Spring Street (Long Beach) [a]** | PM | 0.720 | -- | C | No | **0.979** | -- | **E** | **Yes** | **1.033** | -- | **F** | **0.054** | **Yes** | 0.848 | -- | D | -0.185 |
| 22 | Kilroy Airport Way at | AM | 0.612 | -- | B | No | 0.645 | -- | B | No | 0.670 | -- | B | 0.025 | No | -- | -- | -- | -- |
| | Spring Street (Long Beach) | PM | 0.815 | -- | D | No | 0.849 | -- | D | No | 0.881 | -- | D | 0.032 | No | -- | -- | -- | -- |
| 23 | Lakewood Boulevard at | AM | 0.818 | -- | D | No | 0.855 | -- | D | No | 0.875 | -- | D | 0.020 | No | -- | -- | -- | -- |
| | Spring Street (Long Beach) | PM | 0.849 | -- | D | No | 0.875 | -- | D | No | 0.896 | -- | D | 0.021 | No | -- | -- | -- | -- |
| 24 | Orange Avenue at | AM | -- | 14.5 | B | No | -- | 15.3 | C | No | -- | 15.7 | C | 0.4 | No | -- | -- | -- | -- |
| | 29th Street (Signal Hill/Long Beach) | PM | -- | 14.9 | B | No | -- | 15.7 | C | No | -- | 16.2 | C | 0.5 | No | -- | -- | -- | -- |
| 25 | California Avenue at | AM | 0.613 | -- | B | No | 0.630 | -- | B | No | 0.639 | -- | B | 0.009 | No | -- | -- | -- | -- |
| | Willow Street (Signal Hill/Long Beach) | PM | 0.593 | -- | A | No | 0.613 | -- | B | No | 0.624 | -- | B | 0.011 | No | -- | -- | -- | -- |
| **26** | **Orange Avenue at** | AM | 0.736 | -- | C | No | 0.820 | -- | D | No | 0.844 | -- | D | 0.024 | No | 0.661 | -- | B | -0.183 |
| | **Willow Street (Signal Hill/Long Beach) [a]** | PM | 0.845 | -- | D | No | **0.928** | -- | **E** | **Yes** | **0.958** | -- | **E** | **0.030** | **Yes** | 0.751 | -- | C | -0.207 |
| 27 | Walnut Avenue at | AM | 0.510 | -- | A | No | 0.526 | -- | A | No | 0.537 | -- | A | 0.011 | No | -- | -- | -- | -- |
| | Willow Street (Signal Hill) | PM | 0.617 | -- | B | No | 0.636 | -- | B | No | 0.648 | -- | B | 0.012 | No | -- | -- | -- | -- |
| 28 | Cherry Avenue at | AM | 0.687 | -- | B | No | 0.717 | -- | C | No | 0.788 | -- | C | 0.071 | No | -- | -- | -- | -- |
| | Willow Street (Signal Hill) | PM | 0.818 | -- | D | No | 0.849 | -- | D | No | 0.899 | -- | D | 0.050 | No | -- | -- | -- | -- |

Notes:

LOS = Level of Service, please refer to *Tables 1* and *2* for the LOS definitions

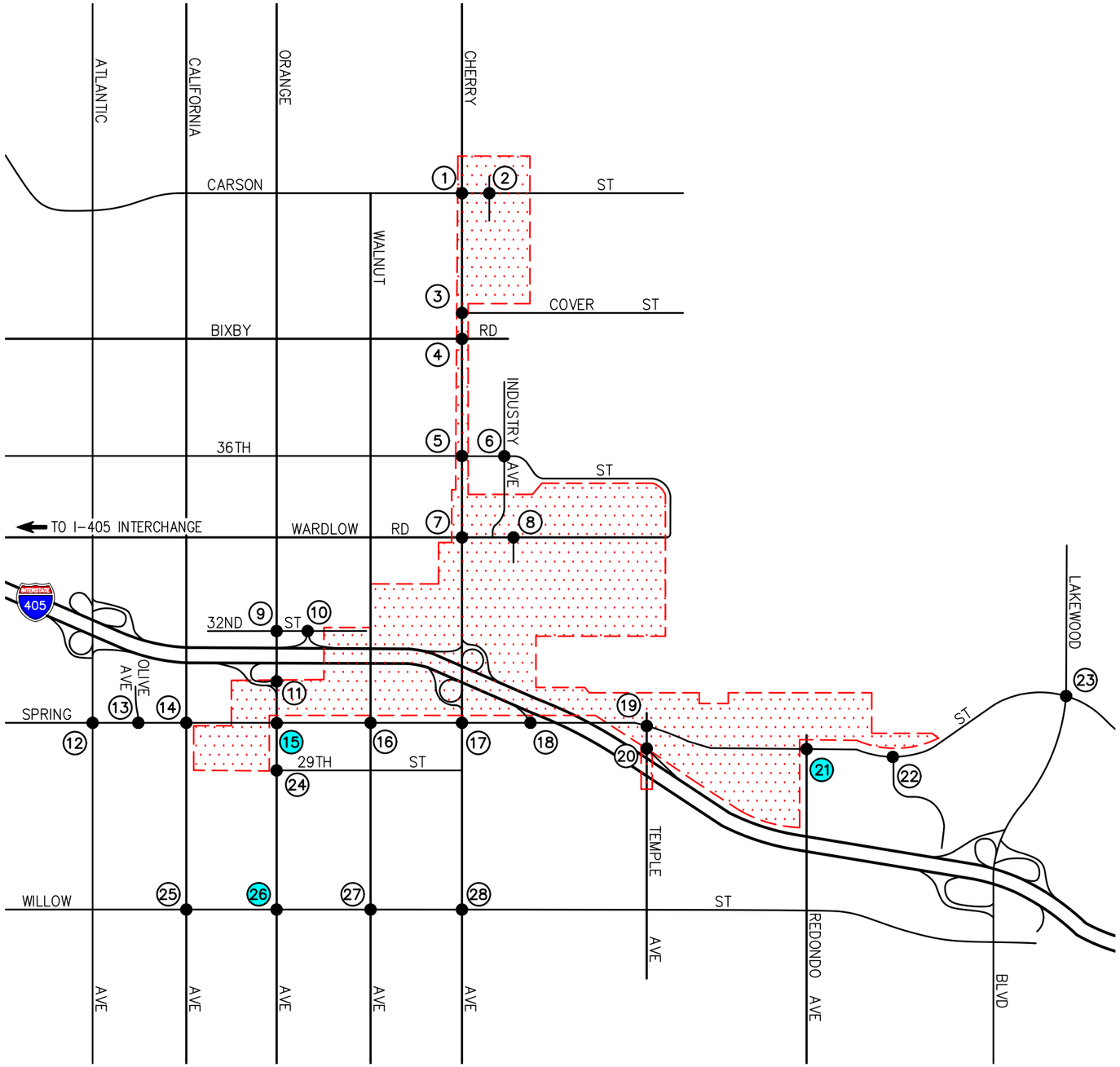
ICU = Intersection Capacity Utilization

s/v = seconds per vehicle (delay)

= Deficient LOS based on City's LOS standards.

= Deficient LOS and Significant Impact based on City's LOS standards.

[a] Based on direction from City staff, the City of Long Beach has planned improvements which include a signalized intersection at Orange Avenue/I-405 Southbound Ramps and protected bikeway facilities along Orange Avenue and Spring Street, which reduces intersection capacity at the intersections of Atlantic Ave/Spring St, California Ave/Spring St, Orange Ave/Spring St, Temple Ave/Spring St, Redondo Ave/Spring St and Orange Ave/Willow St. These planned improvements have been assumed under Year 2040 Baseline and Year 2040 Plus Project traffic conditions.

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

(#) = STUDY INTERSECTION

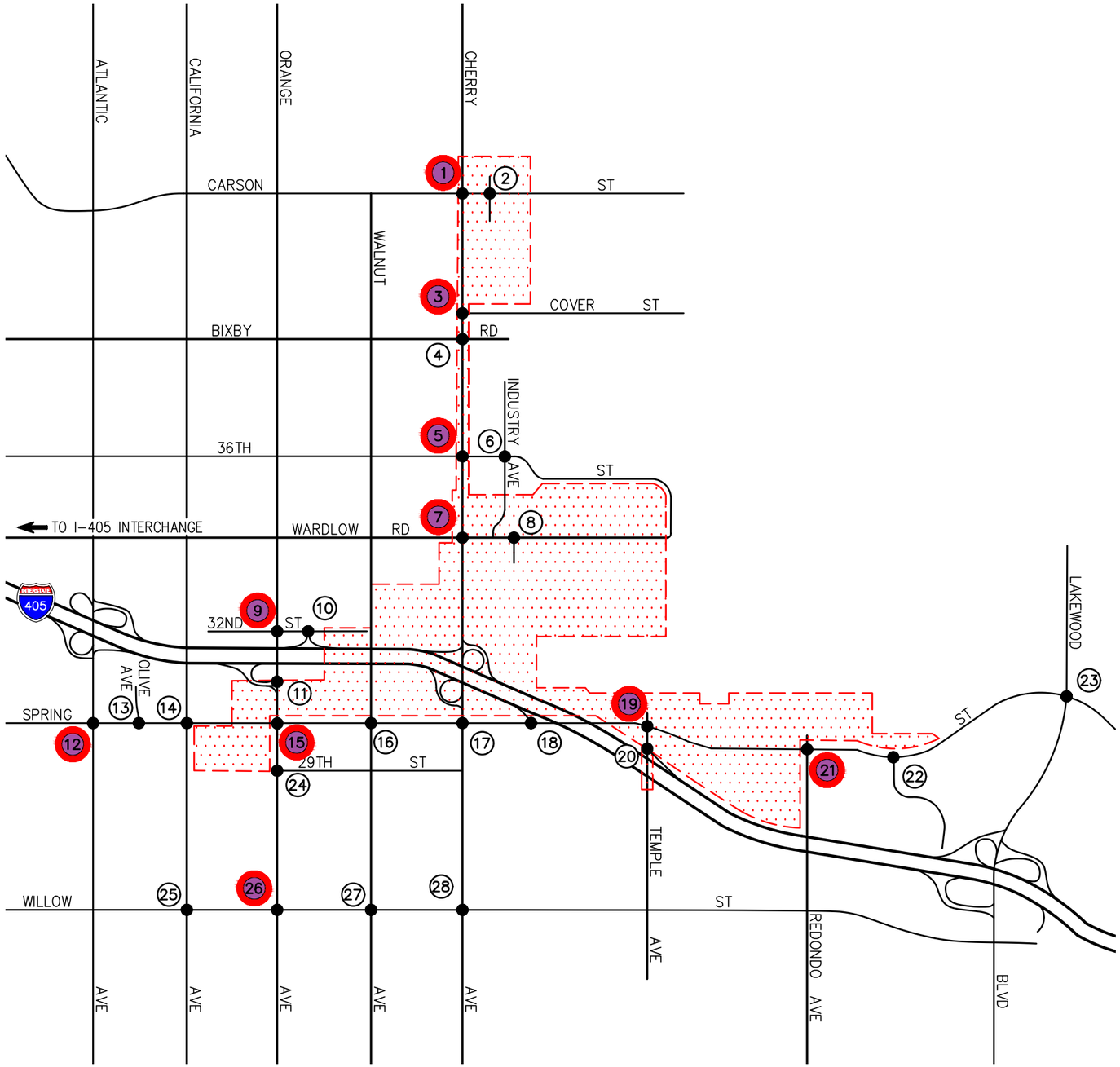
(#) = DEFICIENT LOS UNDER YEAR 2040 BASELINE

= PROJECT SITE

# FIGURE 23

## YEAR 2040 BASELINE DEFICIENT LOS SUMMARY

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH




LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

= PROJECT SITE

(#) = STUDY IDENTIFICATION NUMBER

(#) = DEFICIENT LOS UNDER YEAR 2040 BASELINE

(#) = DEFICIENT LOS UNDER YEAR 2040 + PROJECT

(#) = DEFICIENT LOS UNDER YEAR 2040 + PROJECT AND IMPACTED INTERSECTION

# FIGURE 24

## YEAR 2040 + PROJECT DEFICIENT LOS SUMMARY

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

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# 6.0 STATE OF CALIFORNIA (CALTRANS) ANALYSIS

In conformance with the current Caltrans *Guide for the Preparation of Traffic Impact Studies, dated December 2002*, existing and projected peak hour operating conditions at the four (4) state-controlled study intersections within the study area have been evaluated using the *Highway Capacity Manual* operations method of analysis. These state-controlled locations include the following study intersections:

10. I-405 Northbound Ramps at 32nd Street
11. Orange Avenue at I-405 Southbound Ramps
18. I-405 Southbound Off-Ramp at Spring Street
20. Temple Avenue at I-405 Northbound Off-Ramp

Caltrans "endeavors to maintain a target LOS at the transition between LOS "C" and LOS "D" on State highway facilities"; it does not require that LOS "D" (shall) be maintained. However, Caltrans acknowledges that this may not always be feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. For this analysis, LOS D is the target level of service standard and will be utilized to assess the project impacts at the state-controlled study intersections.

The Caltrans *Guide for the Preparation of Traffic Impact Studies, dated December 2002* states that if an existing State-owned facility operates at less than the target LOS (i.e. LOS D); the existing service level should be maintained. Based on Caltrans Criteria, a Project's impact is considered significant if the Project causes the LOS to change from an acceptable LOS (i.e., LOS D or better) to a deficient LOS (i.e. LOS E or F)

## 6.1 Highway Capacity Manual (HCM) Method of Analysis (Signalized Intersections)

Based on the HCM 6th Edition operations method of analysis, level of service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption and lost travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometries, traffic and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during ideal conditions: in the absence of traffic control, in the absence of geometric delay, in the absence of any incidents and when there are no other vehicles on the road.

In the HCM, only the portion of total delay attributed to the control facility is quantified. This delay is called *control delay*. Control delay includes initial deceleration delay, queue move-up time, stopped delay and final acceleration delay. Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle. The six qualitative categories of Level of Service that have been defined along with the corresponding HCM control delay value range for signalized intersections are shown in ***Table 9***.

## TABLE 9
## LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS (HCM)[4]

| Level of Service (LOS) | Control Delay Per Vehicle (seconds/vehicle) | Level of Service Description |
|---|---|---|
| A | $\leq$ 10.0 | This level of service occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay. |
| B | > 10.0 and $\leq$ 20.0 | This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of average delay. |
| C | > 20.0 and $\leq$ 35.0 | Average traffic delays. These higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping. |
| D | > 35.0 and $\leq$ 55.0 | Long traffic delays. At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high *v/c* ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable. |
| E | > 55.0 and $\leq$ 80.0 | Very long traffic delays. This level is considered by many agencies (i.e. SANBAG) to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high *v/c* ratios. Individual cycle failures are frequent occurrences. |
| F | $\geq$ 80.0 | Severe congestion. This level, considered to be unacceptable to most drivers, often occurs with over saturation, that is, when arrival flow rates exceed the capacity of the intersection. It may also occur at high *v/c* ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors to such delay levels. |

[4] Source: *Highway Capacity Manual* (Signalized Intersections).

## 6.2 Existing Plus Project Traffic Conditions

***Table 10*** summarizes the peak hour Level of Service results at the four (4) state-controlled study intersections for existing plus project traffic conditions. The first column (1) of Delay/LOS values in *Table 10* presents a summary of existing AM and PM peak hour traffic. The second column (2) lists existing plus project traffic conditions with current intersection geometry/lane configurations and shows the increase in delay value due to the added peak hour project trips and indicates whether the traffic associated with the Project will have a significant impact based on the significant impact criteria defined in this report. The third column (3) indicates the anticipated level of service with potential mitigation measures, if any.

### 6.2.1 *Existing Traffic Conditions*

Review of Column 1 of *Table 10* indicates that the intersection of Orange Avenue/I-405 SB Ramps currently operates at unacceptable LOS F in the AM and PM peak hours (Similar to the results presented in *Tables 3* and *7*). The remaining state-controlled study intersections currently operate at LOS C or better during the weekday AM and PM peak hours.

### 6.2.2 *Existing Plus Project Traffic Conditions*

Review of Column 2 of *Table 10* indicates that the intersection of Orange Avenue/I-405 SB Ramps is forecasted to operate at unacceptable LOS F in the AM and PM peak hour with the addition of project traffic (Similar to the results presented in *Tables 3* and *7*). The remaining state-controlled study intersections are forecast to operate at acceptable LOS D or better during the weekday AM and PM peak hours, with the addition of project traffic.

Although the intersection of Orange Avenue/I-405 SB Ramps is forecast to operate at unacceptable LOS F in the AM and PM peak hours, the intersection is not considered significantly impacted when compared to the LOS standards and significant impact criteria specified in this report.

***Appendix D*** presents the existing plus project HCM/LOS calculations for the state-controlled study intersections.

## TABLE 10
## EXISTING (2018) PLUS PROJECT INTERSECTION PEAK HOUR LEVELS OF SERVICE – CALTRANS

| # | Key Intersection | Time Period | (1) Existing (Year 2018) Delay (s/v) | LOS | Deficient? | (2) Existing plus Project (Year 2018) Delay (s/v) | LOS | ICU or Delay Change (2) - (1) | Significant Impact? | (3) Existing plus Project (Year 2018) With Potential Mitigation Measures Delay (s/v) | LOS | ICU or Delay Change (3) - (2) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | I-405 Northbound Ramps at | AM | 11.2 | B | No | 11.6 | B | 0.4 | No | -- | -- | -- |
| | 32nd Street (Signal Hill/Caltrans) | PM | 19.7 | C | No | 24.7 | C | 5.0 | No | -- | -- | -- |
| **11** | **Orange Avenue at** | AM | **94.9** | **F** | **Yes** | **126.8** | **F** | **31.9** | No [a] | -- | -- | -- |
| | **I-405 Southbound Ramps (Long Beach/Caltrans)** | PM | **188.0** | **F** | **Yes** | **321.5** | **F** | **133.5** | No [a] | -- | -- | -- |
| 18 | I-405 Southbound Off-Ramp at | AM | 34.3 | C | No | 48.4 | D | 14.1 | No | -- | -- | -- |
| | Spring Street (Signal Hill/Long Beach/Caltrans) | PM | 24.9 | C | No | 23.9 | C | -1.0 | No | -- | -- | -- |
| 20 | Temple Avenue at | AM | 13.4 | B | No | 12.8 | B | -0.6 | No | -- | -- | -- |
| | I-405 Northbound Off-Ramp (Long Beach/Caltrans) | PM | 15.9 | B | No | 15.1 | B | -0.8 | No | -- | -- | -- |

Notes:

LOS = Level of Service, please refer to *Tables 2* and *9* for the LOS definitions

ICU = Intersection Capacity Utilization

s/v = seconds per vehicle (delay)

= Deficient LOS based on City's LOS standards.

= Deficient LOS and Significant Impact based on Caltrans LOS standards.

[a] An unsignalized intersection impact is considered to be significant if the project causes an intersection at LOS D or better to degrade to LOS E or F.

## 6.3 Year 2040 Traffic Conditions

***Table 11*** summarizes the peak hour Level of Service results at the four (4) state-controlled study intersections for Year 2040 plus project traffic conditions. The first column (1) of HCM/LOS values in *Table 11* presents a summary of existing AM and PM peak hour traffic. The second column (2) lists future Year 2040 traffic conditions, with planned improvements implemented identified by the City, without any traffic generated by the proposed Project. The third column (3) presents future Year 2040 traffic conditions with the addition of traffic generated by the proposed Project and shows the increase in delay value due to the added peak hour project trips and indicates whether the traffic associated with the Project will have a significant impact based on the LOS standards and significant impact criteria defined in this report. The fourth column (4) indicates the anticipated level of service with potential mitigation measures, if any.

### 6.3.1 *Year 2040 Baseline Traffic Conditions*

Review of Column 2 of *Table 11* indicates that all four (4) state-controlled study intersections are forecast to operate at LOS D or better during the weekday AM and PM peak hours in Year 2040 Baseline Traffic Conditions.

### 6.3.2 *Year 2040 Plus Project Traffic Conditions*

Review of Column 3 of *Table 11* indicates that the intersection of I-405 Southbound Off-Ramp at Spring Street is forecasted to operate at an unacceptable LOS E in the AM peak hour with the addition of project traffic (Similar to the results presented in *Table 8*). The remaining state-controlled study intersections are forecast to operate at acceptable LOS D or better during the weekday AM and PM peak hours, with the addition of project traffic.

Review of Columns 3 and 4 of *Table 11* indicates that the intersection of I-405 Southbound Off-Ramp at Spring Street is considered significantly impacted when compared to the LOS standards and significant impact criteria specified in this report. The implementation of potential mitigation measures at this location will completely offset the project's impact and improve the LOS to acceptable conditions (detailed in *Section 7* of this report).

*Appendix D* presents the Year 2040 plus project HCM/LOS calculations for the state-controlled study intersections.

## TABLE 11
## YEAR 2040 PLUS PROJECT INTERSECTION PEAK HOUR LEVELS OF SERVICE – CALTRANS

| # | Key Intersection | Time Period | (1) Existing (Year 2018) Delay (s/v) | LOS | Deficient? | (2) Year 2040 Baseline Delay (s/v) | LOS | Deficient? | (3) Year 2040 plus Project Delay (s/v) | LOS | ICU or Delay Change (3) - (2) | Significant Impact? | (4) Year 2040 Baseline plus Project With Potential Mitigation Measures Delay (s/v) | LOS | ICU or Delay Change (4) - (3) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | I-405 Northbound Ramps at | AM | 11.2 | B | No | 11.5 | B | No | 11.9 | B | 0.4 | No | -- | -- | -- |
| | 32nd Street (Signal Hill/Caltrans) | PM | 19.7 | C | No | 22.6 | C | No | 29.9 | D | 7.3 | No | -- | -- | -- |
| **11** | **Orange Avenue at** | AM | **94.9** | **F** | **Yes** | 18.9 | B | No | 19.7 | B | 0.8 | No | -- | -- | -- |
| | **I-405 Southbound Ramps (Long Beach/Caltrans) [a]** | PM | **188.0** | **F** | **Yes** | 13.3 | B | No | 14.6 | B | 1.3 | No | -- | -- | -- |
| **18** | **I-405 Southbound Off-Ramp at** | AM | 34.3 | C | No | 46.1 | D | No | **61.0** | **E** | **14.9** | **Yes** | 25.4 | C | -35.6 |
| | **Spring Street (Signal Hill/Long Beach/Caltrans)** | PM | 24.9 | C | No | 24.4 | C | No | 23.9 | C | -0.5 | No | 22.8 | C | -1.1 |
| 20 | Temple Avenue at | AM | 13.4 | B | No | 13.5 | B | No | 12.9 | B | -0.6 | No | -- | -- | -- |
| | I-405 Northbound Off-Ramp (Long Beach/Caltrans) | PM | 15.9 | B | No | 16.0 | B | No | 15.3 | B | -0.7 | No | -- | -- | -- |

Notes:

LOS = Level of Service, please refer to *Tables 2* and *9* for the LOS definitions

ICU = Intersection Capacity Utilization

s/v = seconds per vehicle (delay)

= Deficient LOS based on City's LOS standards.

= Deficient LOS and Significant Impact based on Caltrans LOS standards.

[a] Based on direction from City staff, the City of Long Beach has planned improvements which include a signalized intersection at Orange Avenue/I-405 Southbound Ramps. These planned improvements have been assumed under Year 2040 Baseline and Year 2040 Plus Project traffic conditions.

# 7.0 INTERSECTION MITIGATION MEASURES

For those intersections where projected traffic volumes are expected to result in poor operating conditions, this report identifies roadway improvements that are expected to:

- Mitigate the impact of existing traffic, Project traffic and future non-project (ambient growth) traffic; and
- Improve Levels of Service to an acceptable range and/or to pre-project conditions.

Implementation of mitigation measures that would alleviate significant traffic impacts attributable to the Project, address future deficiencies, and achieve satisfactory levels based on the thresholds of significance and performance standards per the City of Long Beach, City of Signal Hill, and Caltrans, will have to be identified by conducting focused traffic impact studies for specific development projects within the Specific Plan area as they materialize. As the Specific Plan is implemented, and new development occurs over time, the City will need to undertake targeted physical improvements to maintain desired levels of service. It will be necessary to develop a prioritization and phasing program for new and improved roadway facilities.

The timing of necessary improvements is difficult to predict for the Specific Plan's buildout that may take 21 years or more to fully materialize. Most cities with a formalized Trip Fee Program identify the timing for constructing programmed area-wide improvements based on the following:

1. **Looking to the Past:** A city implements an improvement based on "known" or past deficiencies, which may have been identified based on prior General Plan studies, accident history, and previously completed traffic studies.

2. **Looking to the Present:** A city requires the preparation of a traffic study for each development project that is inconsistent with its General Plan Land Use Element and/or add 50 peak hour trips to one intersection. The projects that are commonly subjected to the requirement includes proposed developments with 100 or more residential dwelling units, 25,000 SF or more of office, 1,000 SF or more of retail, or 100,000 SF or more of industrial. The traffic study would be the basis for identifying potential traffic impacts/deficiencies that could then trigger the implementation of intersection or roadway improvements specified in the General Plan. Therefore, the mitigation measures are appropriately phased to respond to anticipated significant impacts as they arise.

3. **Looking to the Future:** A city employs an incremental approach by conducting a phased analysis of significant traffic impacts in the future. For example, detailed level of service and impact analyses could be conducted for a series of horizon years, such as in 5-year increments. The anticipated growth is distributed proportionately to each phase of the study. The mitigation measures are then targeted for implementation according to which future year the deficiencies are projected to occur in and warrant the improvement. In other words, mitigation measures are staged to reduce impacts at the time they are anticipated to become

significant impacts. Establishing a mitigation monitoring program that would be conducted in timely increments could supplement and validate the results of the phased analyses.

4. **Specific Development Project Triggers:** There are also cases wherein a specific development project would drive the construction of an improvement, whether it be a project-specific mitigation measure or a city's programmed/background improvement.

5. **Combination of the Above Triggers:** It may be that an improvement is put on the fast track for completion based on any combination of the above factors, and because of available funding, and/or it may be very desirable to the city based on social and economic factors that go beyond traffic operational benefits.

These intersection improvements are ultimately subject to the review, approval, rejection, modification, and implementation of the City of Long Beach and any other respective jurisdiction (if applicable, to maintain design consistency across jurisdictional boundaries). While the City has complete authority to determine the desirability and ultimate fate of its transportation system and road network, implementation of these potential mitigation measures may impact adjoining land use, require costly right-of-way acquisition, compromise accessibility to fronting land use, result in conflicts between different modes of travel, require the removal of on-street parking and bus stops, etc. The City may find the proposed mitigation undesirable, and choose not to implement them and/or implement alternate mitigation measures. It should be recognized that further environmental review may be required on a project-specific basis.

### 7.1.1 *Existing Plus Project Traffic Conditions*

The results of the intersection capacity analysis presented previously in *Table 7* shows that the proposed Project will significantly impact five (5) key study intersections under the "Existing Plus Project" traffic scenario. The potential mitigation measures are as follows:

- **Intersection 1 – Cherry Avenue at Carson Street (Long Beach):** Widen and/or restripe the existing exclusive northbound right-turn lane to a shared through-right turn lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach and would require right-of-way acquisition from the City of Long Beach. Additionally, the City of Long Beach has identified potential planned improvements along Cherry Avenue consisting of proposed bicycle facilities, which would require additional right-of-way acquisition from the City of Long Beach. Therefore, the impact at this location is considered ***significant and unavoidable***.

- **Intersection 3 – Cherry Avenue at Cover Street (Long Beach/Lakewood):** Widen and/or restripe the existing exclusive northbound right-turn lane to a shared through-right turn lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach and would require right-of-way acquisition only from the City of Long Beach (due to the nature of these improvements, right-of-way acquisition from the City of Lakewood would not be required). Additionally, the City of Long Beach has

identified potential planned improvements along Cherry Avenue consisting of proposed bicycle facilities, which would require additional right-of-way acquisition from both the City of Long Beach and City of Lakewood. Therefore, the impact at this location is considered ***significant and unavoidable***.

- **Intersection 5 – Cherry Avenue at 36th Street (Long Beach/Lakewood):** Restripe the eastbound approach to provide an exclusive left-turn lane. Construct an exclusive northbound right-turn lane. These improvements are subject to the approval of the City of Long Beach and would require right-of-way acquisition from only the City of Lakewood (due to the nature of these improvements, right-of-way acquisition from the City of Long Beach would not be required). Additionally, the City of Long Beach has identified potential planned improvements consisting of proposed bicycle facilities, which would require additional right-of-way acquisition from both the City of Long Beach and City of Lakewood. Therefore, the impact at this location is considered ***significant and unavoidable***.

- **Intersection 7 – Cherry Avenue at Wardlow Road (Long Beach):** Construct two additional northbound through lanes and an exclusive northbound right-turn lane. Construct two additional southbound through lanes. Restripe the existing eastbound shared through-left turn lane to an exclusive left-turn lane and construct an additional eastbound through lane. Restripe the existing westbound shared through-left turn lane to an exclusive left-turn lane. Construct an additional two westbound through lanes. Restripe the westbound shared through-right turn lane to an exclusive westbound right-turn lane. Construct an additional westbound right-turn lane. These improvements are subject to the approval of the City of Long Beach and would require right-of-way acquisition from the City of Long Beach. Additionally, the City of Long Beach has identified potential planned improvements consisting of proposed bicycle facilities, which would require additional right-of-way acquisition from the City of Long Beach. Therefore, the impact at this location is considered ***significant and unavoidable***.

- **Intersection 9 – Orange Avenue at 32nd Street (Signal Hill):** Restripe the northbound approach to provide an exclusive right-turn lane. These improvements are subject to the approval of the City of Signal Hill. Since these improvements fall under the jurisdiction of another public agency and not the lead agency (City of Long Beach), the impact is considered ***significant and unavoidable***.

***Figures 25A*** *through* ***25C*** graphically illustrate the potential mitigation measures for Existing (2018) plus Project traffic conditions.

### 7.1.2 *Year 2040 Plus Project Traffic Conditions*

The results of the intersection capacity analysis presented previously in *Table 8* shows that the proposed Project will significantly impact ten (10) key study intersections under the "Year 2040 Plus Project" traffic scenario. The potential mitigation measures are identical to the improvements

detailed above in *Section 7.1.1* of this report for Existing (2018) plus Project traffic conditions, with the exception of the following intersections:

- **Intersection 1 – Cherry Avenue at Carson Street (Long Beach):** Widen the eastbound approach to construct a 4th through lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach and would require right-of-way acquisition from the City of Long Beach. Additionally, the City of Long Beach has identified potential planned improvements along Cherry Avenue consisting of proposed bicycle facilities, which would require additional right-of-way acquisition from the City of Long Beach. Therefore, the impact at this location is considered ***significant and unavoidable***.

- **Intersection 3 – Cherry Avenue at Cover Street (Long Beach/Lakewood):** Widen the northbound approach to provide an exclusive right-turn lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach and would require right-of-way acquisition only from both the City of Long Beach and City of Lakewood. Additionally, the City of Long Beach has identified potential planned improvements along Cherry Avenue consisting of proposed bicycle facilities, which would require additional right-of-way acquisition from both the City of Long Beach and City of Lakewood. Therefore, the impact at this location is considered ***significant and unavoidable***.

- **Intersection 5 – Cherry Avenue at 36th Street (Long Beach/Lakewood):** Modify the traffic signal to provide for an 8-phase traffic signal. These improvements are subject to the approval of the City of Long Beach. Additionally, the City of Long Beach has identified potential planned improvements consisting of proposed bicycle facilities, which would require additional right-of-way acquisition from both the City of Long Beach and City of Lakewood. Therefore, the impact at this location is considered ***significant and unavoidable***.

- **Intersection 12 – Atlantic Avenue at Spring Street (Signal Hill/Long Beach):** Construct an additional eastbound through lane and an additional westbound through lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach and would require right-of-way acquisition from both the City of Long Beach and City of Signal Hill. Additionally, the City of Long Beach has identified potential planned improvements consisting of proposed bicycle facilities, which would require additional right-of-way acquisition from both the City of Long Beach and City of Signal Hill. Therefore, the impact at this location is considered ***significant and unavoidable***.

- **Intersection 15 – Orange Avenue at Spring Street (Signal Hill/Long Beach):** Widen and/or restripe the northbound approach to provide a shared through/right-turn lane. Convert the southbound right-turn lane into a shared through/right-turn lane. Widen along the project frontage to accommodate two south bound through lanes. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach and would require right-of-way acquisition from both the City of Long Beach and City of Signal

Hill. Additionally, the City of Long Beach has identified potential planned improvements consisting of proposed bicycle facilities, which would require additional right-of-way acquisition from both the City of Long Beach and City of Signal Hill. Therefore, the impact at this location is considered ***significant and unavoidable***.

- **Intersection 19 – Temple Avenue at Spring Street (Long Beach):** Widen the eastbound approach to provide an exclusive right-turn lane. Widen the westbound approach to provide an additional through lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach and would require right-of-way acquisition from the City of Long Beach. Additionally, the City of Long Beach has identified potential planned improvements consisting of proposed bicycle facilities, which would require additional right-of-way acquisition from the City of Long Beach. Therefore, the impact at this location is considered ***significant and unavoidable***.

- **Intersection 21 – Redondo Avenue at Spring Street (Long Beach):** Widen the eastbound approach to provide an additional through lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Long Beach and would require right-of-way acquisition from the City of Long Beach. Additionally, the City of Long Beach has identified potential planned improvements consisting of proposed bicycle facilities, which would require additional right-of-way acquisition from the City of Long Beach. Therefore, the impact at this location is considered ***significant and unavoidable***.

- **Intersection 26 – Orange Avenue at Willow Street (Signal Hill/Long Beach):** Construct an additional northbound through lane. Construct an additional southbound through lane. Modify the existing traffic signal as necessary. These improvements are subject to the approval of the City of Signal Hill and would require right-of-way acquisition from both the City of Long Beach and City of Signal Hill. Since these improvements fall under the jurisdiction of another public agency and not the lead agency (City of Long Beach), the impact is considered ***significant and unavoidable***.

***Figures 26A*** *through* ***26C*** graphically illustrate the potential mitigation measures for Year 2040 plus Project traffic conditions.

### 7.1.3 *Existing Plus Project Traffic Conditions – Caltrans*

The results of the intersection capacity analysis presented previously in *Table 10* shows that the proposed Project will not significantly impact any of the key Caltrans study intersections under the "Existing Plus Project" traffic scenario.

### 7.1.4 *Year 2040 Plus Project Traffic Conditions – Caltrans*

The results of the intersection capacity analysis presented previously in *Table 11* shows that the proposed Project will significantly impact one (1) key Caltrans study intersection under the "Year 2040 Plus Project" traffic scenario. The potential mitigation measures are as follows:

- **<u>Intersection 18 – I-405 Southbound Off-Ramp at Spring Street (Signal Hill/Long Beach/Caltrans):</u>** Restripe the westbound approach to provide an additional through lane. These improvements are subject to the approval of the City of Long Beach and/or Caltrans. Since these improvements fall under the jurisdiction of another public agency and not the lead agency (Caltrans), the impact is considered ***significant and unavoidable.***

## 7.2 Project-Related Fair Share Contribution

The transportation impacts associated with the development of the Project were determined based on the Existing Plus Project and Year 2040 traffic analyses. As summarized in *Sections 5* and *6*, the development of the Project is anticipated to have an impact at eleven (11) locations in the Year 2040. As such, the Project can be expected to pay its fair share of the improvement costs of the impacted intersections to offset the Project's incremental traffic impact. Please note that the Existing (2018) Plus Project potential mitigation measures are included in the Year 2040 Plus Project potential mitigation measures. Therefore, only a Year 2040 fair-share contribution has been calculated.

In addition, the project's fair share contribution was also estimated for the intersection of Orange Avenue/I-405 SB Ramps. Although this intersection is not considered significantly impacted, it does operate adversely under existing traffic conditions. Also, preliminary review of the existing volumes indicate that the intersection satisfies the criteria for the installation of a traffic signal. Should Caltrans or the City of Long Beach desire to install a traffic signal at this location, the Project may be expected to pay a fair-share of the total cost. For the purposes of this study, the need for signalization is assessed on the basis of the peak-hour traffic signal warrant as described in the *California Manual on Uniform Traffic Control Devices (MUTCD).*

The results of the peak-hour traffic signal warrant analysis (Warrant #3) for Existing traffic conditions are summarized in the table below. The results indicate that the key unsignalized intersection of Orange Avenue/I-405 SB Ramps satisfies the criteria for a traffic signal under Existing traffic conditions. As such, a traffic signal could be installed at this location if desired.

| Key Intersection | Time Period | (1) Existing Traffic Conditions[5] | |
|---|---|---|---|
| | | Part A of Warrant 3 Satisfied? | Part B of Warrant 3 Satisfied? |
| 11. Orange Avenue at I-405 SB Ramps | AM | Yes | Yes |
| | PM | Yes | Yes |

*Appendix B* presents the signal warrant worksheets for the unsignalized study intersection for existing traffic conditions.

[5] Signal warrant checks based on Warrant 3, Part A - Peak-Hour Delay Warrant and Part B - Peak-Hour Volume Warrant are contained in the California MUTCD.

### 7.2.1 *Year 2040 Project-Related Fair Share Contribution*

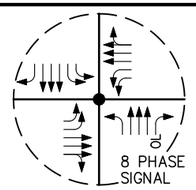
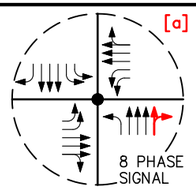
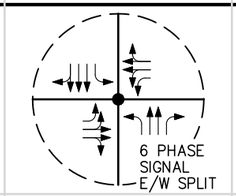
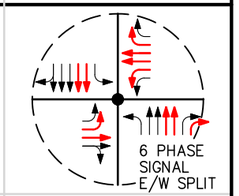
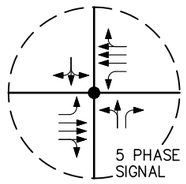
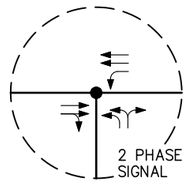
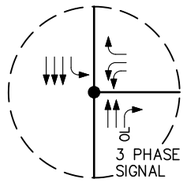
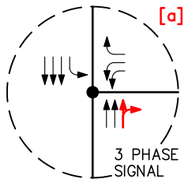
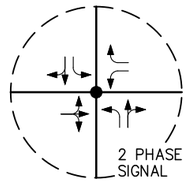
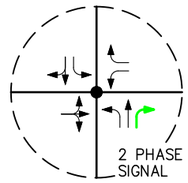
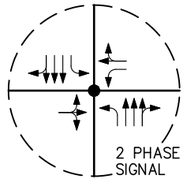
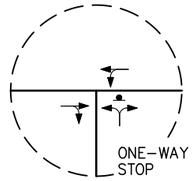
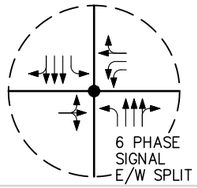
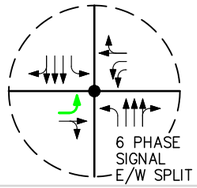
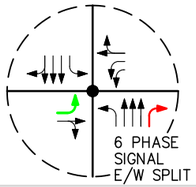
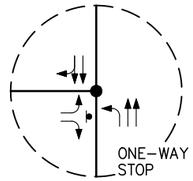
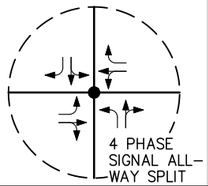
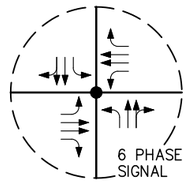
***Table 12*** presents the AM and/or PM peak hour percentage of net traffic impact at the study intersections impacted by the proposed Project for Year 2040 traffic conditions, as well as the intersection of Orange Avenue/I-405 SB Ramps. As presented in this table, the first column (1) presents a total of all intersection peak hour movements for existing traffic conditions. The second column (2) presents project only traffic conditions. The third column (3) presents future 2040 traffic conditions with project traffic. The fourth column (4) represents what percentage of total intersection peak hour traffic is project-related traffic.

**TABLE 12**
**YEAR 2040 PROJECT FAIR SHARE CONTRIBUTION**

| # | Key Intersection | Impacted Time Period | (1) Existing Traffic | (2) Project Only Traffic | (3) Year 2040 Plus Project Traffic | (4) Net Project Percent Increast |
|---|---|---|---|---|---|---|
| 1 | Cherry Avenue at | AM | -- | -- | -- | -- |
| | Carson Street (Long Beach) | PM | 5,245 | 1,040 | 6,519 | **81.63%** |
| 3 | Cherry Avenue at | AM | -- | -- | -- | -- |
| | Cover Street (Long Beach/Lakewood) | PM | 3,815 | 1,074 | 5,064 | **85.99%** |
| 5 | Cherry Avenue at | AM | -- | -- | -- | -- |
| | 36th Street (Long Beach/Lakewood) | PM | 4,249 | 1,289 | 5,762 | **85.19%** |
| 7 | Cherry Avenue at | AM | 4,080 | 1,670 | 5,951 | 89.26% |
| | Wardlow Road (Long Beach) | PM | 4,518 | 1,943 | 6,672 | **90.20%** |
| 9 | Orange Avenue at | AM | -- | -- | -- | -- |
| | 32nd Street (Signal Hill) | PM | 2,013 | 157 | 2,244 | **67.97%** |
| 11 | Orange Avenue at | AM | 1,897 | 119 | 2,139 | 49.17% |
| | I-405 Southbound Ramps (Long Beach/Caltrans) | PM | 2,001 | 200 | 2,331 | **60.61%** |
| 12 | Atlantic Avenue at | AM | -- | -- | -- | -- |
| | Spring Street (Signal Hill/Long Beach) | PM | 4,015 | 407 | 4,619 | **67.38%** |
| 15 | Orange Avenue at | AM | 3,151 | 120 | 3,432 | 42.70% |
| | Spring Street (Signal Hill/Long Beach) | PM | 3,613 | 181 | 3,976 | **49.86%** |
| 18 | I-405 Southbound Off-Ramp at | AM | 3,040 | 290 | 3,525 | **59.79%** |
| | Spring Street (Signal Hill/Long Beach/Caltrans) | PM | -- | -- | -- | -- |
| 19 | Temple Avenue at | AM | 3,754 | 282 | 4,223 | 60.13% |
| | Spring Street (Long Beach) | PM | 3,810 | 386 | 4,383 | **67.36%** |
| 21 | Redondo Avenue at | AM | -- | -- | -- | -- |
| | Spring Street (Long Beach) | PM | 3,721 | 244 | 4,101 | **64.21%** |
| 26 | Orange Avenue at | AM | -- | -- | -- | -- |
| | Willow Street (Signal Hill/Long Beach) | PM | 4,214 | 192 | 4,637 | **45.39%** |

Notes:

Net Project Percent Increase (4) = [Column (2)] / [Column (3) – Column (1)]

| INTERSECTION | EXISTING | POTENTIAL MITIGATION WITHOUT ROW ACQUISITION | POTENTIAL MITIGATION WITH ROW ACQUISITION | INTERSECTION | EXISTING | POTENTIAL MITIGATION WITHOUT ROW ACQUISITION | POTENTIAL MITIGATION WITH ROW ACQUISITION |
|---|---|---|---|---|---|---|---|
| ① CHERRY AVE @ CARSON ST |  | N/A |  | ⑦ CHERRY AVE @ WARDLOW RD |  | N/A |  |
| ② SHOPPING CTR @ CARSON ST |  | N/A | N/A | ⑧ BOEING ST @ WARDLOW RD |  | N/A | N/A |
| ③ CHERRY AVE @ COVER ST |  | N/A |  | ⑨ ORANGE AVE @ 32ND ST |  |  | N/A |
| ④ CHERRY AVE @ BIXBY RD |  | N/A | N/A | ⑩ I-405 NB RAMPS @ 32ND ST |  | N/A | N/A |
| ⑤ CHERRY AVE @ 36TH ST |  |  |  | ⑪ ORANGE AVE @ I-405 SB RAMPS |  | N/A | N/A |
| ⑥ INDUSTRY AVE @ 36TH ST |  | N/A | N/A | ⑫ ATLANTIC AVE @ SPRING ST |  | N/A | N/A |

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

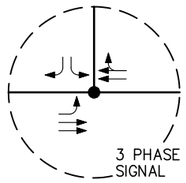
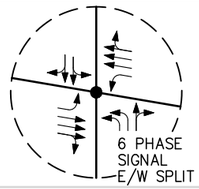
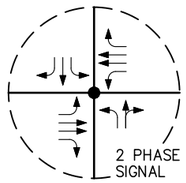
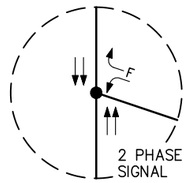
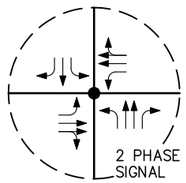
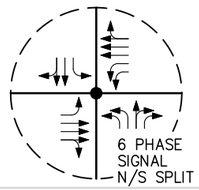
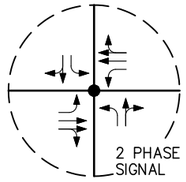
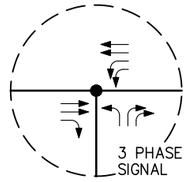
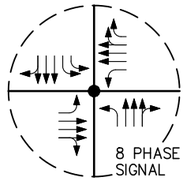
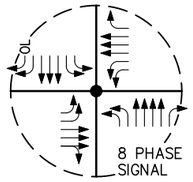
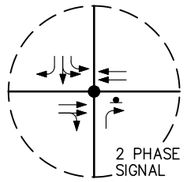
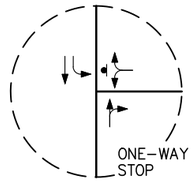
KEY

- ◄— = APPROACH LANE ASSIGNMENT
- ◄— = POTENTIAL MITIGATION WITHOUT R.O.W. ACQUISITION
- ◄— = POTENTIAL MITIGATION WITH R.O.W. ACQUISITION NEEDED
- ● = TRAFFIC SIGNAL, F = FREE RIGHT, OL = OVERLAP
- [a] = POTENTIAL MITIGATION REQUIRES ELIMINATION OF EXISTING NORTHBOUND RIGHT-TURN OVERLAP PHASE

# FIGURE 25A

## EXISTING (2018) + PROJECT POTENTIAL MITIGATION MEASURES (INTERSECTIONS 1-12)

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

| INTERSECTION | EXISTING | POTENTIAL MITIGATION WITHOUT ROW ACQUISITION | POTENTIAL MITIGATION WITH ROW ACQUISITION | INTERSECTION | EXISTING | POTENTIAL MITIGATION WITHOUT ROW ACQUISITION | POTENTIAL MITIGATION WITH ROW ACQUISITION |
|---|---|---|---|---|---|---|---|
| ⑬ OLIVE AVE @ SPRING ST |   | N/A | N/A | ⑲ TEMPLE AVE @ SPRING ST |   | N/A | N/A |
| ⑭ CALIFORNIA AVE @ SPRING ST |   | N/A | N/A | ⑳ TEMPLE AVE @ I-405 NB OFF-RAMPS |   | N/A | N/A |
| ⑮ ORANGE AVE @ SPRING ST |   | N/A | N/A | ㉑ REDONDO AVE @ SPRING ST |   | N/A | N/A |
| ⑯ WALNUT AVE @ SPRING ST |   | N/A | N/A | ㉒ KILROY AIRPORT WAY @ SPRING ST |   | N/A | N/A |
| ⑰ CHERRY AVE @ SPRING ST |   | N/A | N/A | ㉓ LAKEWOOD BLVD @ SPRING ST |   | N/A | N/A |
| ⑱ I-405 SB OFF-RAMPS @ SPRING ST |   | N/A | N/A | ㉔ ORANGE AVE @ 29TH ST |   | N/A | N/A |

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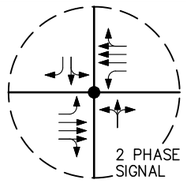
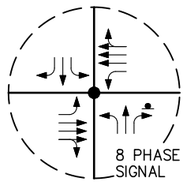
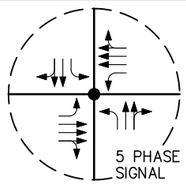
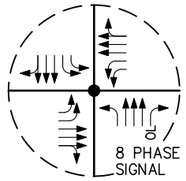
KEY
- = APPROACH LANE ASSIGNMENT
- = POTENTIAL MITIGATION WITHOUT R.O.W. ACQUISITION
- = POTENTIAL MITIGATION WITH R.O.W. ACQUISITION NEEDED
- ● = TRAFFIC SIGNAL, F = FREE RIGHT, OL = OVERLAP

# FIGURE 25B
## EXISTING (2018) + PROJECT POTENTIAL MITIGATION MEASURES (INTERSECTIONS 13-24)

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

| INTERSECTION | EXISTING | POTENTIAL MITIGATION WITHOUT ROW ACQUISITION | POTENTIAL MITIGATION WITH ROW ACQUISITION | INTERSECTION | EXISTING | POTENTIAL MITIGATION WITHOUT ROW ACQUISITION | POTENTIAL MITIGATION WITH ROW ACQUISITION |
|---|---|---|---|---|---|---|---|
| ㉕ CALIFORNIA AVE @ WILLOW ST |   | N/A | N/A | | | | |
| ㉖ ORANGE AVE @ WILLOW ST |   | N/A | N/A | | | | |
| ㉗ WALNUT AVE @ WILLOW ST |   | N/A | N/A | | | | |
| ㉘ CHERRY AVE @ WILLOW ST |   | N/A | N/A | | | | |
| | | | | | | | |
| | | | | | | | |

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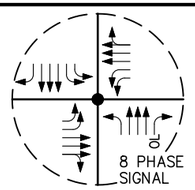
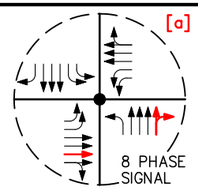
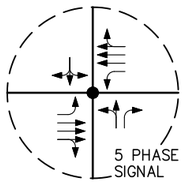
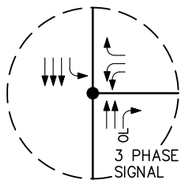
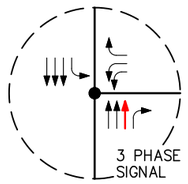
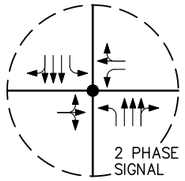
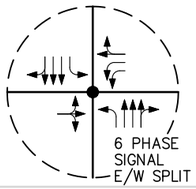
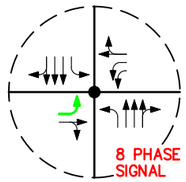
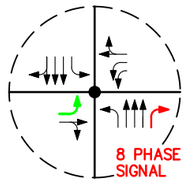
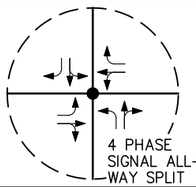
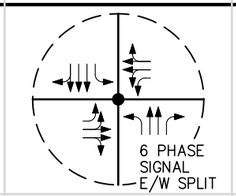
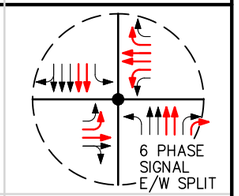
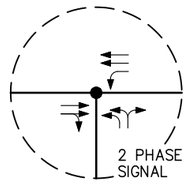
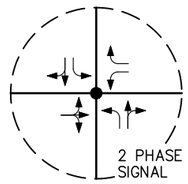
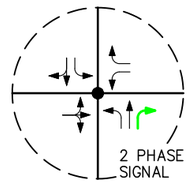
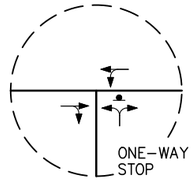
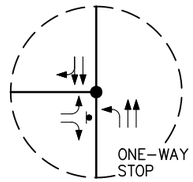
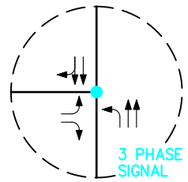
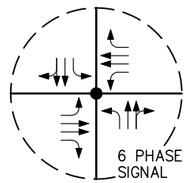
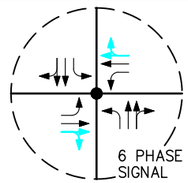
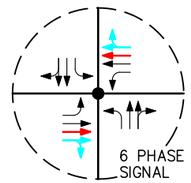
KEY

= APPROACH LANE ASSIGNMENT
= POTENTIAL MITIGATION WITHOUT R.O.W. ACQUISITION
= POTENTIAL MITIGATION WITH R.O.W. ACQUISITION NEEDED
● = TRAFFIC SIGNAL, F = FREE RIGHT, OL = OVERLAP

# FIGURE 25C
## EXISTING (2018) + PROJECT POTENTIAL MITIGATION MEASURES (INTERSECTIONS 25-28)

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

| INTERSECTION | EXISTING | YEAR 2040 PLANNED IMPROVEMENTS | POTENTIAL MITIGATION WITHOUT ROW ACQUISITION | POTENTIAL MITIGATION WITH ROW ACQUISITION |
|---|---|---|---|---|
| ① CHERRY AVE @ CARSON ST |  | N/A | N/A |  |
| ② SHOPPING CTR @ CARSON ST |  | N/A | N/A | N/A |
| ③ CHERRY AVE @ COVER ST |  | N/A | N/A |  |
| ④ CHERRY AVE @ BIXBY RD |  | N/A | N/A | N/A |
| ⑤ CHERRY AVE @ 36TH ST |  | N/A |  |  |
| ⑥ INDUSTRY AVE @ 36TH ST |  | N/A | N/A | N/A |

| INTERSECTION | EXISTING | YEAR 2040 PLANNED IMPROVEMENTS | POTENTIAL MITIGATION WITHOUT ROW ACQUISITION | POTENTIAL MITIGATION WITH ROW ACQUISITION |
|---|---|---|---|---|
| ⑦ CHERRY AVE @ WARDLOW RD |  | N/A | N/A |  |
| ⑧ BOEING ST @ WARDLOW RD |  | N/A | N/A | N/A |
| ⑨ ORANGE AVE @ 32ND ST |  | N/A |  | N/A |
| ⑩ I-405 NB RAMPS @ 32ND ST |  | N/A | N/A | N/A |
| ⑪ ORANGE AVE @ I-405 SB RAMPS |  |  | N/A | N/A |
| ⑫ ATLANTIC AVE @ SPRING ST |  |  | N/A |  |

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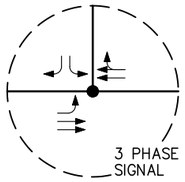
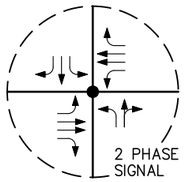
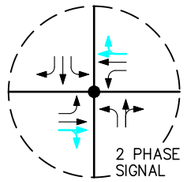
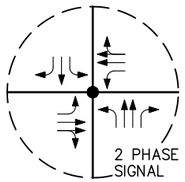
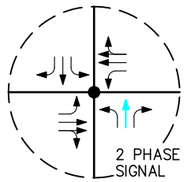
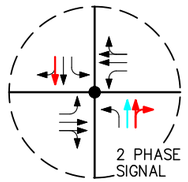
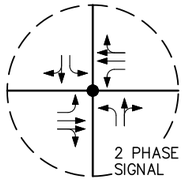
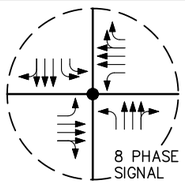
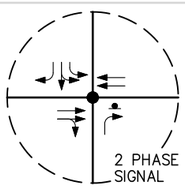
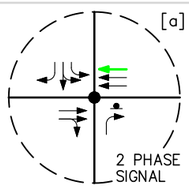
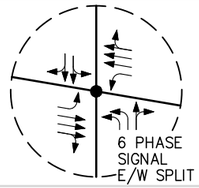
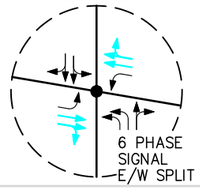
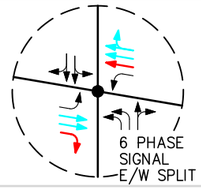
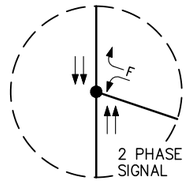
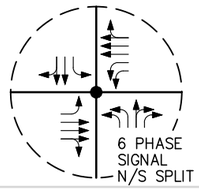
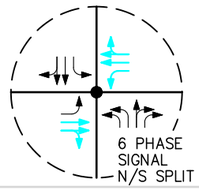
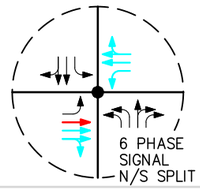
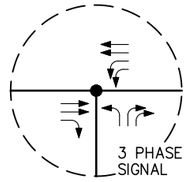
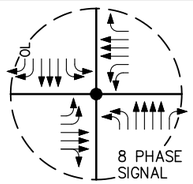
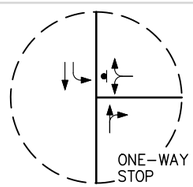
- = POTENTIAL MITIGATION WITH R.O.W. ACQUISITION NEEDED
- ● = TRAFFIC SIGNAL, F = FREE RIGHT, OL = OVERLAP
- [a] = POTENTIAL MITIGATION REQUIRES ELIMINATION OF EXISTING NORTHBOUND RIGHT-TURN OVERLAP PHASE

# FIGURE 26A

## YEAR 2040 + PROJECT PLANNED IMPROVEMENTS AND POTENTIAL MITIGATION MEASURES (INTERSECTIONS 1-12)

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

| INTERSECTION | EXISTING | YEAR 2040 PLANNED IMPROVEMENTS | POTENTIAL MITIGATION WITHOUT ROW ACQUISITION | POTENTIAL MITIGATION WITH ROW ACQUISITION |
|---|---|---|---|---|
| ⑬ OLIVE AVE @ SPRING ST |  | N/A | N/A | N/A |
| ⑭ CALIFORNIA AVE @ SPRING ST |  |  | N/A | N/A |
| ⑮ ORANGE AVE @ SPRING ST |  |  | N/A |  |
| ⑯ WALNUT AVE @ SPRING ST |  | N/A | N/A | N/A |
| ⑰ CHERRY AVE @ SPRING ST |  | N/A | N/A | N/A |
| ⑱ I-405 SB OFF-RAMPS @ SPRING ST |  | N/A |  | N/A |

| INTERSECTION | EXISTING | YEAR 2040 PLANNED IMPROVEMENTS | POTENTIAL MITIGATION WITHOUT ROW ACQUISITION | POTENTIAL MITIGATION WITH ROW ACQUISITION |
|---|---|---|---|---|
| ⑲ TEMPLE AVE @ SPRING ST |  |  | N/A |  |
| ⑳ TEMPLE AVE @ I-405 NB OFF-RAMPS |  | N/A | N/A | N/A |
| ㉑ REDONDO AVE @ SPRING ST |  |  | N/A |  |
| ㉒ KILROY AIRPORT WAY @ SPRING ST |  | N/A | N/A | N/A |
| ㉓ LAKEWOOD BLVD @ SPRING ST |  | N/A | N/A | N/A |
| ㉔ ORANGE AVE @ 29TH ST |  | N/A | N/A | N/A |

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

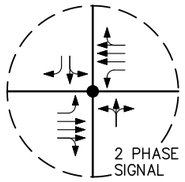
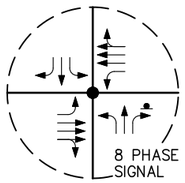
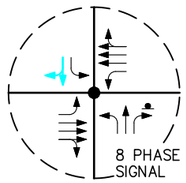
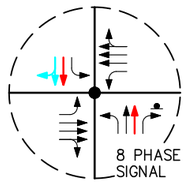
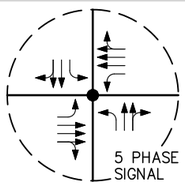
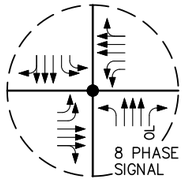
KEY

- = APPROACH LANE ASSIGNMENT
- = YEAR 2040 PLANNED IMPROVEMENTS
- = POTENTIAL MITIGATION WITHOUT R.O.W. ACQUISITION
- = POTENTIAL MITIGATION WITH R.O.W. ACQUISITION NEEDED
- ● = TRAFFIC SIGNAL, F = FREE RIGHT, OL = OVERLAP
- [a] = IMPACTED UNDER CALTRANS METHODOLOGY ONLY

# FIGURE 26B

## YEAR 2040 + PROJECT PLANNED IMPROVEMENTS AND POTENTIAL MITIGATION MEASURES (INTERSECTIONS 13-24)

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

| INTERSECTION | EXISTING | YEAR 2040 PLANNED IMPROVEMENTS | POTENTIAL MITIGATION WITHOUT ROW ACQUISITION | POTENTIAL MITIGATION WITH ROW ACQUISITION | INTERSECTION | EXISTING | YEAR 2040 PLANNED IMPROVEMENTS | POTENTIAL MITIGATION WITHOUT ROW ACQUISITION | POTENTIAL MITIGATION WITH ROW ACQUISITION |
|---|---|---|---|---|---|---|---|---|---|
| ㉕ CALIFORNIA AVE @ WILLOW ST |   | N/A | N/A | N/A | | | | | |
| ㉖ ORANGE AVE @ WILLOW ST |   |   | N/A |   | | | | | |
| ㉗ WALNUT AVE @ WILLOW ST |   | N/A | N/A | N/A | | | | | |
| ㉘ CHERRY AVE @ WILLOW ST |   | N/A | N/A | N/A | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

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LINSCOTT LAW & GREENSPAN engineers

N NO SCALE

KEY

= APPROACH LANE ASSIGNMENT
= YEAR 2040 PLANNED IMPROVEMENTS
= POTENTIAL MITIGATION WITHOUT R.O.W. ACQUISITION
= POTENTIAL MITIGATION WITH R.O.W. ACQUISITION NEEDED
● = TRAFFIC SIGNAL, F = FREE RIGHT, OL = OVERLAP

# FIGURE 26C

## YEAR 2040 + PROJECT PLANNED IMPROVEMENTS AND POTENTIAL MITIGATION MEASURES (INTERSECTIONS 25-28)

GLOBEMASTER CORRIDOR SPECIFIC PLAN, LONG BEACH

# 8.0 CONGESTION MANAGEMENT PROGRAM COMPLIANCE ASSESSMENT

The Congestion Management Program (CMP) was created statewide as a result of Proposition 111 and has been implemented locally by the Los Angeles County Metropolitan Transportation Authority (LACMTA). The CMP for Los Angeles County requires that the traffic impact of individual development projects of potential regional significance be analyzed. A specific system of arterial roadways plus all freeways comprise the CMP system.

For purposes of the CMP, a significant impact occurs when the proposed Project increases traffic demand on a CMP facility by two percent of capacity ($V/C \geq 0.02$), causing LOS F ($V/C > 1.00$). If the facility is already at LOS F, a significant impact occurs when the proposed Project increases traffic demand on a CMP facility by two percent of capacity ($V/C \geq 0.02$).

## 8.1 Traffic Impact Review

As required by the current *Congestion Management Program for Los Angeles County*, a review has been made of designated monitoring locations on the CMP highway system for potential impact analysis. Per CMP TIA criteria, the geographic area examined in the TIA must include the following, at a minimum:

- All CMP arterial monitoring intersections, including freeway on and off-ramp intersections, where the project will add 50 or more trips during either the AM or PM weekday peak hours.

- Mainline freeway-monitoring stations where the project will add 150 or more trips, in either direction, during the AM or PM weekday peak hours.

### 8.1.1 *Intersections*

The following four (4) key study intersections are freeway on/off-ramp CMP intersections where the project will add 50 or more trips during either the AM or PM weekday peak hours:

10. I-405 Northbound Ramps at 32nd Street
11. Orange Avenue at I-405 Southbound Ramps
18. I-405 Southbound Off-Ramp at Spring Street
20. Temple Avenue at I-405 Northbound Off-Ramp

Based on results of the impact analysis detailed in *Section 5.0* of this traffic study and summarized in *Tables 7* and *8*, the Project ***will not*** significantly impact any of the four (4) key CMP intersections.

### 8.1.2 *Freeway Mainline Segments*

The following five (5) CMP freeway monitoring locations in the project vicinity have been identified where the project will add 150 or more trips, in either direction, during the AM or PM weekday peak hours:

| CMP Station | Intersection/Jurisdiction |
|---|---|
| No. 1033 | SR-91, east of Alameda Street/Santa Fe Avenue |
| No. 1034 | SR-91, east of Cherry Avenue |
| No. 1035 | SR-91, between Norwalk Boulevard and Pioneer Boulevard |
| No. 1066 | I-405, at Santa Fe Avenue |
| No. 1067 | I-405, south of I-110 Freeway at Carson Scales |

***Tables 13*** and ***14*** present the results of the CMP freeway mainline analysis under Existing (2018) Plus Project and Year 2040 Plus Project conditions, respectively.

Based upon the application of the significance criteria described previously, *Tables 13* and *14* indicate that the project is not expected to cause significant traffic impacts at any of the 5 CMP freeway mainline segments under Existing (2018) Plus Project conditions or Year 2040 Plus Project conditions.

## TABLE 13
## CMP FREEWAY MAINLINE SEGMENT PEAK HOUR LEVELS OF SERVICE EXISTING (2018) + PROJECT CONDITIONS

| CMP Station # | Location | Peak Hour | Freeway Capacity (vph) [a] | | Existing (Year 2018) [b] | | | | | | Freeway Capacity (vph) [a] | | Existing (Year 2018) Plus Project | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | NB/EB | | | SB/WB | | | | | NB/EB | | | | | SB/WB | | | | |
| | | | NB/EB | SB/WB | Existing Demand | Demand / Cap | LOS [c] | Existing Demand | Demand / Cap | LOS [c] | NB/EB | SB/WB | Future Demand | Demand / Cap | LOS [c] | D/C Change | Significant Impact? | Future Demand | Demand / Cap | LOS [c] | D/C Change | Significant Impact? |
| 1033 | SR-91, east of | AM | 12,000 | 12,000 | 6,019 | 0.502 | A | 9,646 | 0.804 | D | 12,000 | 12,000 | 6,194 | 0.516 | A | 0.014 | No | 9,706 | 0.809 | D | 0.005 | No |
| | Alameda St/Santa Fe Ave | PM | 12,000 | 12,000 | 8,714 | 0.726 | C | 7,177 | 0.598 | A | 12,000 | 12,000 | 8,798 | 0.733 | C | 0.007 | No | 7,372 | 0.614 | B | 0.016 | No |
| **1034** | **SR-91, east of** | AM | 10,000 | 12,000 | **10,292** | **1.029** | **F0** | 7,604 | 0.634 | B | 10,000 | 12,000 | **10,344** | **1.034** | **F0** | **0.005** | **No** | 7,760 | 0.647 | B | 0.013 | No |
| | **Cherry Avenue** | PM | 10,000 | 12,000 | **10,230** | **1.023** | **F0** | 6,068 | 0.506 | A | 10,000 | 12,000 | **10,409** | **1.041** | **F0** | **0.018** | **No** | 6,147 | 0.512 | A | 0.006 | No |
| **1035** | **SR-91, between** | AM | 10,000 | 10,000 | 6,817 | 0.682 | B | **13,766** | **1.377** | **F2** | 10,000 | 10,000 | 6,869 | 0.687 | B | 0.005 | No | **13,922** | **1.392** | **F2** | **0.015** | **No** |
| | **Norwalk Blvd and Pioneer Blvd** | PM | 10,000 | 10,000 | 7,160 | 0.716 | C | **13,481** | **1.348** | **F1** | 10,000 | 10,000 | 7,339 | 0.734 | C | 0.018 | No | **13,560** | **1.356** | **F2** | **0.008** | **No** |
| **1066** | **I-405, at** | AM | 10,000 | 10,000 | **10,719** | **1.072** | **F0** | **12,502** | **1.250** | **F1** | 10,000 | 10,000 | **10,780** | **1.078** | **F0** | **0.006** | **No** | **12,655** | **1.266** | **F1** | **0.016** | **No** |
| | **Santa Fe Avenue** | PM | 10,000 | 10,000 | 9,631 | 0.963 | E | **15,588** | **1.559** | **F3** | 10,000 | 10,000 | 9,817 | 0.982 | E | 0.019 | No | **15,686** | **1.569** | **F3** | **0.010** | **No** |
| 1067 | I-405, south of | AM | 12,000 | 12,000 | 9,668 | 0.806 | D | 7,933 | 0.661 | B | 12,000 | 12,000 | 9,722 | 0.810 | D | 0.004 | No | 8,067 | 0.672 | B | 0.011 | No |
| | I-110 Fwy at Carson Scales | PM | 12,000 | 12,000 | 8,799 | 0.733 | C | 10,035 | 0.836 | D | 12,000 | 12,000 | 8,963 | 0.747 | C | 0.014 | No | 10,121 | 0.843 | D | 0.007 | No |

Notes:

[a] The capacities and LOS criteria are based upon the 2010 Los Angeles County CMP Traffic Impact Study Guidelines. Freeway capacity is 2,000 vehicles per hour (vph) per lane.

[b] The Year 2016 traffic volumes were adjusted by 3.04% to reflect Year 2018 conditions (assumes 1.52% annual growth rate, consistent with 2010 LA CMP).

[c] The LOS is based on the following D/C ratios:

| LOS | D/C Ratio | LOS | D/C Ratio | LOS | D/C Ratio |
|---|---|---|---|---|---|
| A | 0-0.60 | D | >0.80-0.90 | F1 | >1.25-1.35 |
| B | >0.60-0.70 | E | >0.90-1.00 | F2 | >1.35-1.45 |
| C | >0.70-0.80 | F0 | >1.00-1.25 | F3 | >1.45 |

Deficient LOS under Existing (2018).

Deficient LOS under Existing Plus Project.

Deficient LOS and Significant Impact under Existing Plus Project.

## TABLE 14
## CMP FREEWAY MAINLINE SEGMENT PEAK HOUR LEVELS OF SERVICE YEAR 2040 + PROJECT CONDITIONS

| CMP Station # | Location | Peak Hour | Freeway Capacity (vph) [a] | | Year 2040 Baseline [b] | | | | | | Freeway Capacity (vph) [a] | | Year 2040 Plus Project | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | NB/EB | | | SB/WB | | | | | NB/EB | | | | | SB/WB | | | | |
| | | | NB/EB | SB/WB | Future Demand | Demand / Cap | LOS [c] | Future Demand | Demand / Cap | LOS [c] | NB/EB | SB/WB | Future Demand | Demand / Cap | LOS [c] | D/C Change | Significant Impact? | Future Demand | Demand / Cap | LOS [c] | D/C Change | Significant Impact? |
| 1033 | SR-91, east of | AM | 12,000 | 12,000 | 6,413 | 0.534 | A | 10,277 | 0.856 | D | 12,000 | 12,000 | 6,588 | 0.549 | A | 0.015 | No | 10,337 | 0.861 | D | 0.005 | No |
| | Alameda St/Santa Fe Ave | PM | 12,000 | 12,000 | 9,284 | 0.774 | C | 7,646 | 0.637 | B | 12,000 | 12,000 | 9,368 | 0.781 | C | 0.007 | No | 7,841 | 0.653 | B | 0.016 | No |
| **1034** | **SR-91, east of** | AM | 10,000 | 12,000 | **10,966** | **1.097** | **F0** | 8,101 | 0.675 | B | 10,000 | 12,000 | **11,018** | **1.102** | **F0** | **0.005** | **No** | 8,257 | 0.688 | B | 0.013 | No |
| | **Cherry Avenue** | PM | 10,000 | 12,000 | **10,899** | **1.090** | **F0** | 6,465 | 0.539 | A | 10,000 | 12,000 | **11,078** | **1.108** | **F0** | **0.018** | **No** | 6,544 | 0.545 | A | 0.006 | No |
| **1035** | **SR-91, between** | AM | 10,000 | 10,000 | 7,263 | 0.726 | C | **14,666** | **1.467** | **F3** | 10,000 | 10,000 | 7,315 | 0.732 | C | 0.006 | No | **14,822** | **1.482** | **F3** | **0.015** | **No** |
| | **Norwalk Blvd and Pioneer Blvd** | PM | 10,000 | 10,000 | 7,629 | 0.763 | C | **14,363** | **1.436** | **F2** | 10,000 | 10,000 | 7,808 | 0.781 | C | 0.018 | No | **14,442** | **1.444** | **F2** | **0.008** | **No** |
| **1066** | **I-405, at** | AM | 10,000 | 10,000 | **11,421** | **1.142** | **F0** | **13,320** | **1.332** | **F1** | 10,000 | 10,000 | **11,482** | **1.148** | **F0** | **0.006** | **No** | **13,473** | **1.347** | **F1** | **0.015** | **No** |
| | **Santa Fe Avenue** | PM | 10,000 | 10,000 | **10,261** | **1.026** | **F0** | **16,608** | **1.661** | **F3** | 10,000 | 10,000 | **10,447** | **1.045** | **F0** | **0.019** | **No** | **16,706** | **1.671** | **F3** | **0.010** | **No** |
| 1067 | I-405, south of | AM | 12,000 | 12,000 | 10,301 | 0.858 | D | 8,452 | 0.704 | C | 12,000 | 12,000 | 10,355 | 0.863 | D | 0.005 | No | 8,586 | 0.716 | C | 0.012 | No |
| | I-110 Fwy at Carson Scales | PM | 12,000 | 12,000 | 9,374 | 0.781 | C | 10,692 | 0.891 | D | 12,000 | 12,000 | 9,538 | 0.795 | C | 0.014 | No | 10,778 | 0.898 | D | 0.007 | No |

Notes:

[a] The capacities and LOS criteria are based upon the 2010 Los Angeles County CMP Traffic Impact Study Guidelines. Freeway capacity is 2,000 vehicles per hour (vph) per lane.

[b] The Year 2016 traffic volumes were adjusted by 1.52% per year to Year 2020 future conditions, then adjusted by 0.17% per year to reflect Year 2040 Baseline future conditions (consistent with 2010 LA CMP).

[c] The LOS is based on the following D/C ratios:

| LOS | D/C Ratio | LOS | D/C Ratio | LOS | D/C Ratio |
|---|---|---|---|---|---|
| A | 0-0.60 | D | >0.80-0.90 | F1 | >1.25-1.35 |
| B | >0.60-0.70 | E | >0.90-1.00 | F2 | >1.35-1.45 |
| C | >0.70-0.80 | F0 | >1.00-1.25 | F3 | >1.45 |

Deficient LOS under Year 2040 Baseline.

Deficient LOS under Year 2040 Plus Project.

Deficient LOS and Significant Impact under Year 2040 Plus Project.

# 9.0 SUMMARY OF FINDINGS AND CONCLUSIONS

***Project Description*** – The Globemaster Corridor Specific Plan (GCSP) provides the planning and regulatory framework for guiding future development and attracting quality jobs to the approximately 437-acre GCSP area located in an area adjacent to the Long Beach Airport, I-405 Freeway and surrounding residential and business community.

The proposed land use designations within the most current Globemaster Corridor Specific Plan (GCSP) totals approximately **7,011,195 SF**, and is comprised of the following uses:

- 1,770,539 SF (approximately 25.3% of total) of General Office uses
- 127,992 SF (approximately 1.8% of total) of Medical Office uses
- 234,650 SF (approximately 3.4% of total) of Research and Development (R&D) office uses
- 1,046,952 SF (approximately 14.9% of total) of Manufacturing uses
- 2,652,640 SF (approximately 37.8% of total) of Light Industrial/Warehousing/Storage uses
- 468,112 SF (approximately 6.7% of total) of High-Cube Cold Storage Warehouse uses
- 458,015 SF (approximately 6.5% of total) of Retail uses
- 37,015 SF (approximately 0.5% of total) of High-turnover (Sit-down) Restaurant uses
- 7,636 SF (approximately 0.1% of total) of Quality Restaurant uses
- 11,177 SF (approximately 0.2% of total) of Fast-food Restaurant uses
- 33,524 SF (approximately 0.5% of total) of Fast Casual Restaurant uses
- 162,943 SF (approximately 2.3% of total) Hotel uses (332 Rooms)

Comparing the Buildout projections for the proposed land use designations of 7,011,195 SF against the 2,904,175 SF of existing industrial and commercial uses results in an increase of approximately **4,107,020 SF**. It is important to note that the proposed land use designations and the incremental trips that they could generate beyond the existing land use within the GCSP, correspond to the "Project" evaluated in this traffic impact study.

***Study Area*** – A total of 28 key intersections were selected for detailed peak hour traffic impact/level of service analysis during the weekday AM and PM peak hours under each of four traffic scenarios (Existing, Existing Plus Project, Year 2040 Baseline, and Year 2040 Plus Project).

***Project Trip Generation*** – The "net" project trips are estimated to be approximately 41,299 daily trips on a typical weekday, 2,561 AM peak hour trips, and 3,072 PM peak hour trips. The potential impact of these added/incremental trips are assessed in this report.

***Project Significant Traffic Impacts*** - Based on the application of the significance criteria described previously, the Project is expected to cause significant traffic impacts at five (5) of the key study

intersections under Existing (2018) traffic conditions and ten (10) of the key study intersections under Year 2040 traffic conditions.

***Project Significant Traffic Impacts (Caltrans)*** - Based on the application of the significance criteria described previously, the Project is not expected to cause significant traffic impacts at any of the Caltrans locations under Existing (2018) traffic conditions, but is expected to cause significant traffic impacts at one (1) Caltrans intersection under future Year 2040 traffic conditions.

***Potential mitigation measures*** – As previously detailed in *Section 7* of this report, potential mitigation measures for the significantly impacted intersections have been identified to completely offset the project's impact and improve the LOS to acceptable conditions.

It should be noted that these intersection improvements are ultimately subject to the review, approval, rejection, modification, and implementation of the City of Long Beach and any other respective jurisdiction (if applicable, to maintain design consistency across jurisdictional boundaries). While the City has complete authority to determine the desirability and ultimate fate of its transportation system and road network, implementation of these potential mitigation measures may impact adjoining land use, require costly right-of-way acquisition, compromise accessibility to fronting land use, result in conflicts between different modes of travel, require the removal of on-street parking and bus stops, etc. The City may find the proposed mitigation undesirable, and choose not to implement them and/or implement alternate mitigation measures. It should be recognized that further environmental review may be required on a project-specific basis.

***Congestion Management Program Compliance Assessment*** – Four (4) key study intersections are freeway on/off-ramp CMP intersections where the project will add 50 or more trips during either the AM or PM weekday peak hours. Based on results of the detailed impact analysis detailed in *Section 5.0* of this traffic study and summarized in *Tables 7* and *8*, the Project ***will not*** significantly impact any of the four (4) key CMP intersections.

Five (5) CMP freeway monitoring locations in the project vicinity have been identified where the project will add 150 or more trips, in either direction, during the AM or PM weekday peak hours. Based upon the application of the significance criteria, the project is not expected to cause significant traffic impacts at any of the 5 CMP freeway mainline segments under Existing (2018) Plus Project conditions or Year 2040 Plus Project conditions.

# APPENDIX A

## EXISTING TRAFFIC COUNT DATA

Prepared by National Data & Surveying Services

# Cherry Ave & E Carson St

## Peak Hour Turning Movement Count

**ID:** 18-05321-001
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:15 AM - 08:15 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 04:45 PM - 05:45 PM | 04:00 PM - 06:00 PM |

### Cherry Ave — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 67 | 1270 | 310 | 0 | 807 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 55 | 752 | 370 | 0 | 1526 | PM |

### E Carson St — EASTBOUND

| AM | NOON | PM | | |
|---|---|---|---|---|
| 925 | 0 | 848 | ⇦ | |
| 0 | 0 | 0 | ↶ | 0 |
| 58 | 0 | 137 | ↱ | 2 |
| 604 | 0 | 1062 | → | 3 |
| 99 | 0 | 72 | ↴ | 0 |
| AM | NOON | PM | | |

### E Carson St — WESTBOUND

| PM | NOON | AM | | |
|---|---|---|---|---|
| 266 | 0 | 170 | ↰ | 0 |
| 653 | 0 | 754 | ← | 3 |
| 312 | 0 | 373 | ↰ | 2 |
| 0 | 0 | 0 | ↰ | 0 |
| 1735 | 0 | 1090 | ⇨ | |
| PM | NOON | AM | | |

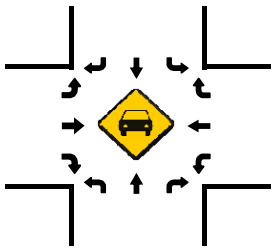
### Cherry Ave — NORTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 1136 | 0 | 140 | 1123 | 303 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 1742 | 0 | 104 | 579 | 176 | AM |

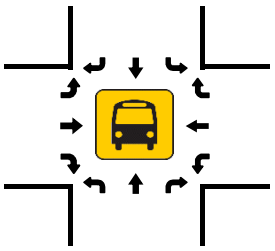
| | | | | |
|---|---|---|---|---|
| | 1 | 4 | 2 | 0 |
| | ⇩ | ↶ | ↶ | ↑ | ↱ |
| | | 0 | 1 | 3 | 1 |

| CONTROL | | | |
|---|---|---|---|
| Signalized | | | |
| TEV | 4564 | 0 | 5245 |
| | AM | NOON | PM |
| PHF | 0.94 | | 0.98 |

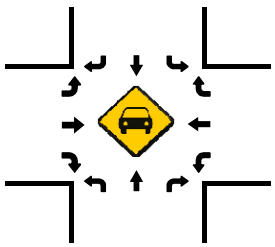
Total Vehicles (AM)



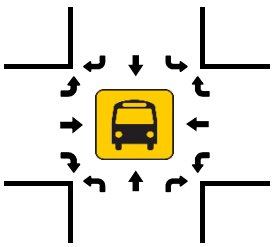
Total Vehicles (AM)



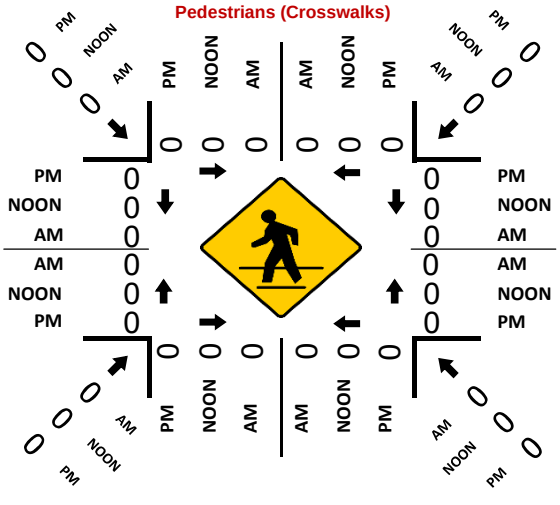
Total Vehicles (NOON)



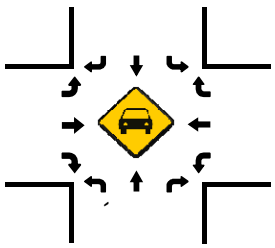
Total Vehicles (NOON)



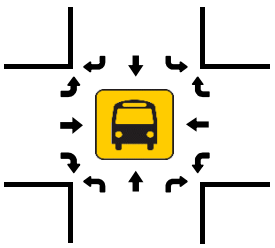
Pedestrians (Crosswalks)




Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

**Location:** Cherry Ave & E Carson St
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05321-001
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | Cherry Ave | | | | Cherry Ave | | | | E Carson St | | | | E Carson St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 1 | 3 | 1 | 0 | 2 | 4 | 1 | 0 | 2 | 3 | 0 | 0 | 2 | 3 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 15 | 99 | 35 | 0 | 71 | 309 | 12 | 0 | 7 | 99 | 18 | 0 | 65 | 96 | 32 | 0 | 858 |
| 7:15 AM | 20 | 131 | 46 | 0 | 69 | 328 | 19 | 0 | 8 | 140 | 29 | 0 | 96 | 184 | 39 | 0 | 1109 |
| 7:30 AM | 24 | 139 | 41 | 0 | 94 | 371 | 19 | 0 | 15 | 181 | 19 | 0 | 91 | 180 | 34 | 0 | 1208 |
| 7:45 AM | 31 | 158 | 51 | 0 | 74 | 324 | 14 | 0 | 19 | 145 | 27 | 0 | 108 | 211 | 45 | 0 | 1207 |
| 8:00 AM | 29 | 151 | 38 | 0 | 73 | 247 | 15 | 0 | 16 | 138 | 24 | 0 | 78 | 179 | 52 | 0 | 1040 |
| 8:15 AM | 24 | 153 | 46 | 0 | 64 | 269 | 24 | 0 | 15 | 143 | 20 | 0 | 76 | 151 | 40 | 0 | 1025 |
| 8:30 AM | 29 | 119 | 57 | 0 | 77 | 247 | 16 | 0 | 20 | 143 | 30 | 0 | 69 | 210 | 45 | 0 | 1062 |
| 8:45 AM | 26 | 154 | 43 | 0 | 63 | 245 | 10 | 0 | 21 | 138 | 11 | 0 | 75 | 161 | 44 | 0 | 991 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 198 | 1104 | 357 | 0 | 585 | 2340 | 129 | 0 | 121 | 1127 | 178 | 0 | 658 | 1372 | 331 | 0 | 8500 |
| **APPROACH %'s :** | 11.93% | 66.55% | 21.52% | 0.00% | 19.16% | 76.62% | 4.22% | 0.00% | 8.49% | 79.03% | 12.48% | 0.00% | 27.87% | 58.11% | 14.02% | 0.00% | |
| **PEAK HR :** | 07:15 AM - 08:15 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 104 | 579 | 176 | 0 | 310 | 1270 | 67 | 0 | 58 | 604 | 99 | 0 | 373 | 754 | 170 | 0 | 4564 |
| **PEAK HR FACTOR :** | 0.839 | 0.916 | 0.863 | 0.000 | 0.824 | 0.856 | 0.882 | 0.000 | 0.763 | 0.834 | 0.853 | 0.000 | 0.863 | 0.893 | 0.817 | 0.000 | 0.945 |
| | 0.895 | | | | 0.851 | | | | 0.885 | | | | 0.891 | | | | |

| PM | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 3 | 1 | 0 | 2 | 4 | 1 | 0 | 2 | 3 | 0 | 0 | 2 | 3 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 24 | 266 | 45 | 0 | 78 | 181 | 13 | 0 | 33 | 206 | 16 | 0 | 66 | 170 | 73 | 0 | 1171 |
| 4:15 PM | 27 | 282 | 77 | 0 | 93 | 166 | 9 | 0 | 35 | 229 | 16 | 0 | 75 | 155 | 65 | 0 | 1229 |
| 4:30 PM | 22 | 286 | 63 | 0 | 94 | 187 | 13 | 0 | 23 | 256 | 17 | 0 | 79 | 158 | 77 | 0 | 1275 |
| 4:45 PM | 39 | 289 | 81 | 0 | 90 | 172 | 14 | 0 | 19 | 239 | 12 | 0 | 80 | 148 | 55 | 0 | 1238 |
| 5:00 PM | 32 | 276 | 67 | 0 | 99 | 178 | 10 | 0 | 49 | 283 | 20 | 0 | 71 | 165 | 74 | 0 | 1324 |
| 5:15 PM | 39 | 314 | 82 | 0 | 68 | 202 | 15 | 0 | 42 | 264 | 16 | 0 | 78 | 157 | 66 | 0 | 1343 |
| 5:30 PM | 30 | 244 | 73 | 0 | 113 | 200 | 16 | 0 | 27 | 276 | 24 | 0 | 83 | 183 | 71 | 0 | 1340 |
| 5:45 PM | 30 | 290 | 69 | 0 | 75 | 193 | 11 | 0 | 21 | 209 | 19 | 0 | 59 | 163 | 49 | 0 | 1188 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 243 | 2247 | 557 | 0 | 710 | 1479 | 101 | 0 | 249 | 1962 | 140 | 0 | 591 | 1299 | 530 | 0 | 10108 |
| **APPROACH %'s :** | 7.98% | 73.74% | 18.28% | 0.00% | 31.00% | 64.59% | 4.41% | 0.00% | 10.59% | 83.45% | 5.95% | 0.00% | 24.42% | 53.68% | 21.90% | 0.00% | |
| **PEAK HR :** | 04:45 PM - 05:45 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 140 | 1123 | 303 | 0 | 370 | 752 | 55 | 0 | 137 | 1062 | 72 | 0 | 312 | 653 | 266 | 0 | 5245 |
| **PEAK HR FACTOR :** | 0.897 | 0.894 | 0.924 | 0.000 | 0.819 | 0.931 | 0.859 | 0.000 | 0.699 | 0.938 | 0.750 | 0.000 | 0.940 | 0.892 | 0.899 | 0.000 | 0.976 |
| | 0.900 | | | | 0.894 | | | | 0.903 | | | | 0.913 | | | | |

Prepared by National Data & Surveying Services

# Shopping Center & E Carson St

## Peak Hour Turning Movement Count

**ID:** 18-05321-002
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:15 AM - 08:15 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 04:45 PM - 05:45 PM | 04:00 PM - 06:00 PM |

### Shopping Center — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 3 | 0 | 0 | 0 | 0 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 1 | 1 | 1 | 0 | 2 | PM |

### EASTBOUND — E Carson St

| AM | NOON | PM | | |
|---|---|---|---|---|
| 1289 | 0 | 1212 | ⇦ | |
| 1 | 0 | 3 | ↶ | 0 |
| 0 | 0 | 0 | ↱ | 1 |
| 997 | 0 | 1571 | → | 3 |
| 51 | 0 | 120 | ↷ | 0 |
| AM | NOON | PM | | |

### WESTBOUND — E Carson St

| PM | NOON | AM | | |
|---|---|---|---|---|
| 0 | 0 | 0 | ↶ | 0 |
| 1020 | 0 | 1212 | ← | 3 |
| 59 | 0 | 30 | ↰ | 1 |
| 0 | 0 | 0 | ↷ | 0 |
| 1648 | 0 | 1023 | ⇨ | |
| PM | NOON | AM | | |

### CONTROL

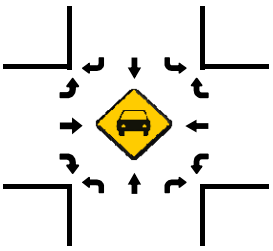
Signalized

| | | | |
|---|---|---|---|
| TEV | 2393 AM | 0 NOON | 3042 PM |
| PHF | 0.92 | | 0.95 |

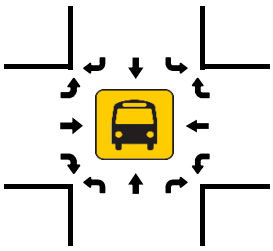
### NORTHBOUND — Shopping Center

| | | | | | |
|---|---|---|---|---|---|
| PM | 180 | 0 | 188 | 2 | 76 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 81 | 0 | 73 | 0 | 26 | AM |
| | | 0 | 0.5 | 1.5 | 0 | |

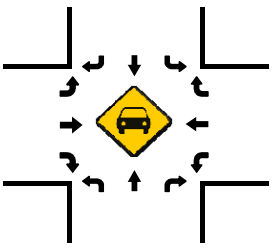
Total Vehicles (AM)



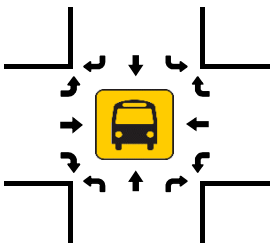
Total Vehicles (AM)



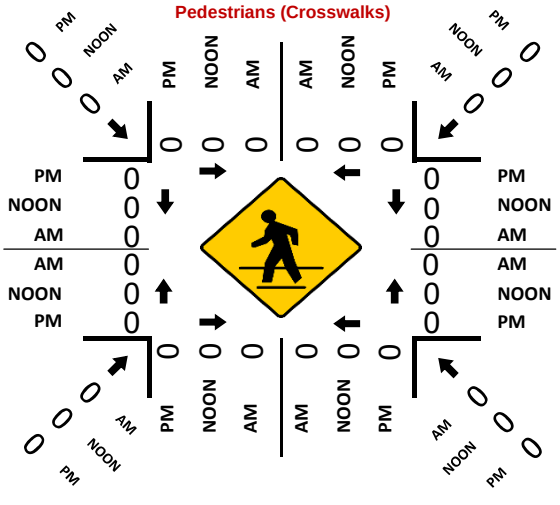
Total Vehicles (NOON)



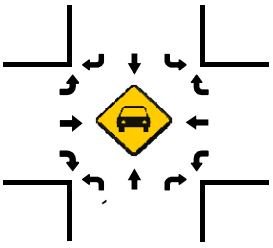
Total Vehicles (NOON)



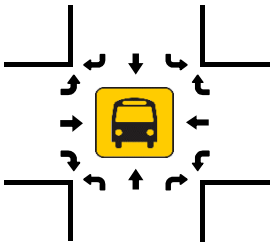
Pedestrians (Crosswalks)




Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

**Location:** Shopping Center & E Carson St
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05321-002
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | Shopping Center | | | | Shopping Center | | | | E Carson St | | | | E Carson St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 0.5 | 1.5 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 3 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 182 | 6 | 0 | 4 | 204 | 0 | 1 | 409 |
| 7:15 AM | 16 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 256 | 9 | 0 | 4 | 291 | 0 | 0 | 580 |
| 7:30 AM | 18 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 268 | 13 | 0 | 11 | 295 | 0 | 0 | 610 |
| 7:45 AM | 18 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 274 | 14 | 0 | 5 | 329 | 0 | 0 | 647 |
| 8:00 AM | 21 | 0 | 10 | 0 | 0 | 0 | 3 | 0 | 0 | 199 | 15 | 1 | 10 | 297 | 0 | 0 | 556 |
| 8:15 AM | 25 | 0 | 4 | 0 | 0 | 0 | 2 | 0 | 1 | 247 | 16 | 1 | 4 | 235 | 1 | 1 | 537 |
| 8:30 AM | 20 | 0 | 16 | 0 | 0 | 1 | 0 | 0 | 0 | 224 | 18 | 0 | 6 | 304 | 0 | 0 | 589 |
| 8:45 AM | 26 | 1 | 11 | 0 | 0 | 0 | 1 | 0 | 0 | 245 | 18 | 1 | 4 | 274 | 0 | 0 | 581 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 150 | 1 | 63 | 0 | 0 | 1 | 6 | 0 | 1 | 1895 | 109 | 3 | 48 | 2229 | 1 | 2 | 4509 |
| **APPROACH %'s :** | 70.09% | 0.47% | 29.44% | 0.00% | 0.00% | 14.29% | 85.71% | 0.00% | 0.05% | 94.37% | 5.43% | 0.15% | 2.11% | 97.76% | 0.04% | 0.09% | |
| **PEAK HR :** | 07:15 AM - 08:15 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 73 | 0 | 26 | 0 | 0 | 0 | 3 | 0 | 0 | 997 | 51 | 1 | 30 | 1212 | 0 | 0 | 2393 |
| **PEAK HR FACTOR :** | 0.869 | 0.000 | 0.650 | 0.000 | 0.000 | 0.000 | 0.250 | 0.000 | 0.000 | 0.910 | 0.850 | 0.250 | 0.682 | 0.921 | 0.000 | 0.000 | 0.925 |
| | 0.798 | | | | 0.250 | | | | 0.911 | | | | 0.930 | | | | |

| PM | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.5 | 1.5 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | 3 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 52 | 0 | 15 | 0 | 1 | 0 | 1 | 0 | 0 | 286 | 31 | 0 | 18 | 257 | 0 | 0 | 661 |
| 4:15 PM | 50 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 369 | 34 | 1 | 18 | 245 | 0 | 0 | 732 |
| 4:30 PM | 45 | 0 | 15 | 0 | 2 | 0 | 2 | 0 | 0 | 351 | 29 | 1 | 23 | 264 | 0 | 0 | 732 |
| 4:45 PM | 43 | 1 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 392 | 26 | 1 | 8 | 241 | 0 | 0 | 732 |
| 5:00 PM | 38 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 401 | 28 | 0 | 13 | 290 | 0 | 0 | 788 |
| 5:15 PM | 46 | 0 | 21 | 0 | 0 | 1 | 0 | 0 | 0 | 384 | 30 | 1 | 19 | 218 | 0 | 0 | 720 |
| 5:30 PM | 61 | 1 | 17 | 0 | 1 | 0 | 1 | 0 | 0 | 394 | 36 | 1 | 19 | 271 | 0 | 0 | 802 |
| 5:45 PM | 59 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 314 | 24 | 3 | 12 | 213 | 0 | 0 | 639 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 394 | 2 | 135 | 0 | 4 | 1 | 4 | 0 | 0 | 2891 | 238 | 8 | 130 | 1999 | 0 | 0 | 5806 |
| **APPROACH %'s :** | 74.20% | 0.38% | 25.42% | 0.00% | 44.44% | 11.11% | 44.44% | 0.00% | 0.00% | 92.16% | 7.59% | 0.26% | 6.11% | 93.89% | 0.00% | 0.00% | |
| **PEAK HR :** | 04:45 PM - 05:45 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 188 | 2 | 76 | 0 | 1 | 1 | 1 | 0 | 0 | 1571 | 120 | 3 | 59 | 1020 | 0 | 0 | 3042 |
| **PEAK HR FACTOR :** | 0.770 | 0.500 | 0.905 | 0.000 | 0.250 | 0.250 | 0.250 | 0.000 | 0.000 | 0.979 | 0.833 | 0.750 | 0.776 | 0.879 | 0.000 | 0.000 | 0.948 |
| | 0.842 | | | | 0.375 | | | | 0.983 | | | | 0.890 | | | | |

Prepared by National Data & Surveying Services

# Cherry Ave & Cover St

## Peak Hour Turning Movement Count

**ID:** 18-05321-003
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:30 AM - 08:30 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 05:00 PM - 06:00 PM | 04:00 PM - 06:00 PM |

### Cherry Ave — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 0 | 1631 | 77 | 0 | 957 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 0 | 1122 | 63 | 0 | 1683 | PM |
| | 0 | 3 | 1 | 0 | | |

### Cover St — EASTBOUND

| AM | NOON | PM | |
|---|---|---|---|
| 0 | 0 | 0 | |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| AM | NOON | PM | |

### CONTROL

Signalized

| | | | |
|---|---|---|---|
| TEV | 3349 AM | 0 NOON | 3815 PM |
| PHF | 0.90 | | 0.97 |

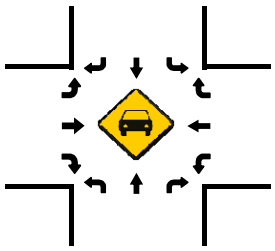
### WESTBOUND — Cover St

| | PM | NOON | AM |
|---|---|---|---|
| 1 | 123 | 0 | 84 |
| 0 | 0 | 0 | 0 |
| 2 | 469 | 0 | 299 |
| 0 | 0 | 0 | 0 |
| | 541 | 0 | 462 |

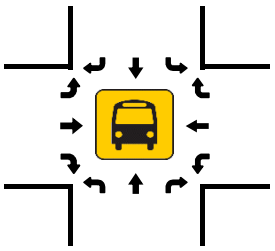
### Cherry Ave — NORTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 1591 | 0 | 0 | 1560 | 478 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 1930 | 0 | 0 | 873 | 385 | AM |
| | | 0 | 0 | 2 | 1 | |

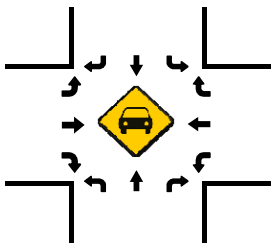
Total Vehicles (AM)



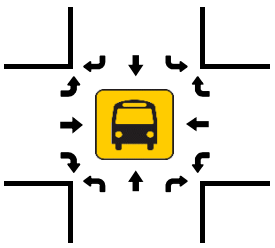
Total Vehicles (AM)



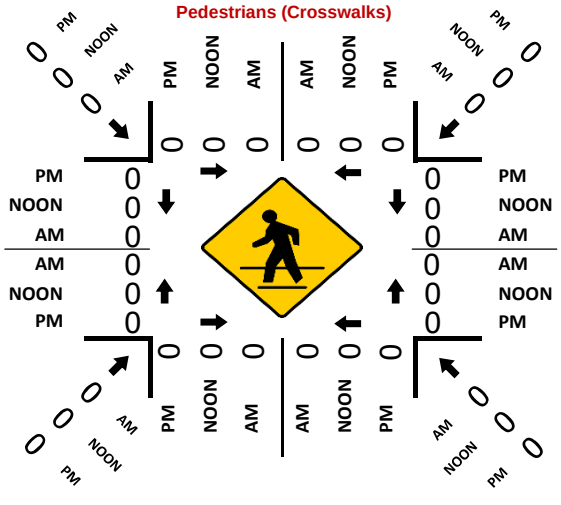
Total Vehicles (NOON)



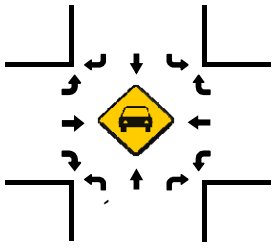
Total Vehicles (NOON)



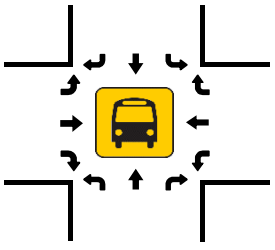
Pedestrians (Crosswalks)




Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

**Location:** Cherry Ave & Cover St
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05321-003
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | Cherry Ave | | | | Cherry Ave | | | | Cover St | | | | Cover St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 0 | 2 | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 0 | 157 | 77 | 0 | 17 | 329 | 0 | 0 | 0 | 0 | 0 | 0 | 61 | 0 | 12 | 0 | 653 |
| 7:15 AM | 0 | 152 | 86 | 0 | 30 | 413 | 0 | 0 | 0 | 0 | 0 | 0 | 56 | 0 | 15 | 0 | 752 |
| 7:30 AM | 0 | 208 | 89 | 0 | 18 | 439 | 0 | 0 | 0 | 0 | 0 | 0 | 79 | 0 | 19 | 0 | 852 |
| 7:45 AM | 0 | 217 | 116 | 0 | 24 | 466 | 0 | 0 | 0 | 0 | 0 | 0 | 86 | 0 | 17 | 0 | 926 |
| 8:00 AM | 0 | 236 | 83 | 0 | 11 | 383 | 0 | 0 | 0 | 0 | 0 | 0 | 80 | 0 | 24 | 0 | 817 |
| 8:15 AM | 0 | 212 | 97 | 0 | 24 | 343 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | 0 | 24 | 0 | 754 |
| 8:30 AM | 0 | 220 | 95 | 0 | 15 | 317 | 0 | 0 | 0 | 0 | 0 | 0 | 76 | 0 | 15 | 0 | 738 |
| 8:45 AM | 0 | 239 | 83 | 0 | 7 | 349 | 0 | 0 | 0 | 0 | 0 | 0 | 62 | 0 | 21 | 0 | 761 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 0 | 1641 | 726 | 0 | 146 | 3039 | 0 | 0 | 0 | 0 | 0 | 0 | 554 | 0 | 147 | 0 | 6253 |
| **APPROACH %'s :** | 0.00% | 69.33% | 30.67% | 0.00% | 4.58% | 95.42% | 0.00% | 0.00% | | | | | 79.03% | 0.00% | 20.97% | 0.00% | |
| **PEAK HR :** | 07:30 AM - 08:30 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 0 | 873 | 385 | 0 | 77 | 1631 | 0 | 0 | 0 | 0 | 0 | 0 | 299 | 0 | 84 | 0 | 3349 |
| **PEAK HR FACTOR :** | 0.000 | 0.925 | 0.830 | 0.000 | 0.802 | 0.875 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.869 | 0.000 | 0.875 | 0.000 | 0.904 |
| | | 0.944 | | | | 0.871 | | | | | | | | 0.921 | | | |

| PM | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 2 | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 0 | 328 | 100 | 0 | 12 | 247 | 0 | 0 | 0 | 0 | 0 | 0 | 113 | 0 | 43 | 0 | 843 |
| 4:15 PM | 0 | 374 | 102 | 0 | 15 | 258 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 24 | 0 | 873 |
| 4:30 PM | 0 | 369 | 119 | 0 | 13 | 296 | 0 | 0 | 0 | 0 | 0 | 0 | 103 | 0 | 43 | 0 | 943 |
| 4:45 PM | 0 | 398 | 101 | 0 | 13 | 249 | 0 | 0 | 0 | 0 | 0 | 0 | 84 | 0 | 34 | 0 | 879 |
| 5:00 PM | 0 | 388 | 110 | 0 | 16 | 283 | 0 | 0 | 0 | 0 | 0 | 0 | 126 | 0 | 39 | 0 | 962 |
| 5:15 PM | 0 | 416 | 128 | 0 | 15 | 277 | 0 | 0 | 0 | 0 | 0 | 0 | 113 | 0 | 32 | 0 | 981 |
| 5:30 PM | 0 | 367 | 114 | 0 | 12 | 280 | 0 | 0 | 0 | 0 | 0 | 0 | 122 | 0 | 28 | 0 | 923 |
| 5:45 PM | 0 | 389 | 126 | 0 | 20 | 282 | 0 | 0 | 0 | 0 | 0 | 0 | 108 | 0 | 24 | 0 | 949 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 0 | 3029 | 900 | 0 | 116 | 2172 | 0 | 0 | 0 | 0 | 0 | 0 | 869 | 0 | 267 | 0 | 7353 |
| **APPROACH %'s :** | 0.00% | 77.09% | 22.91% | 0.00% | 5.07% | 94.93% | 0.00% | 0.00% | | | | | 76.50% | 0.00% | 23.50% | 0.00% | |
| **PEAK HR :** | 05:00 PM - 06:00 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 0 | 1560 | 478 | 0 | 63 | 1122 | 0 | 0 | 0 | 0 | 0 | 0 | 469 | 0 | 123 | 0 | 3815 |
| **PEAK HR FACTOR :** | 0.000 | 0.938 | 0.934 | 0.000 | 0.788 | 0.991 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.931 | 0.000 | 0.788 | 0.000 | 0.972 |
| | | 0.937 | | | | 0.981 | | | | | | | | 0.897 | | | |

Prepared by National Data & Surveying Services

# Cherry Ave & E Bixby Rd

## Peak Hour Turning Movement Count

**ID:** 18-05321-004
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:15 AM - 08:15 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 05:00 PM - 06:00 PM | 04:00 PM - 06:00 PM |

### Cherry Ave — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 52 | 1902 | 41 | 0 | 1228 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 84 | 1494 | 13 | 0 | 2039 | PM |

### E Bixby Rd — EASTBOUND

| AM | NOON | PM | |
|---|---|---|---|
| 123 | 0 | 165 | ⇦ |
| 0 | 0 | 0 | 0 |
| 50 | 0 | 97 | 0 |
| 9 | 0 | 21 | 2 |
| 38 | 0 | 24 | 0 |
| AM | NOON | PM | |

### E Bixby Rd — WESTBOUND

| PM | NOON | AM | |
|---|---|---|---|
| 16 | 0 | 7 | 0 |
| 35 | 0 | 24 | 1 |
| 24 | 0 | 7 | 1 |
| 0 | 0 | 0 | 0 |
| PM | NOON | AM | |
| 89 | 0 | 69 | ⇨ |

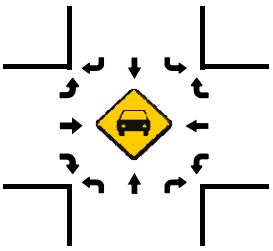
### Cherry Ave — NORTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 1543 | 1 | 46 | 1926 | 55 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 1948 | 1 | 47 | 1171 | 19 | AM |

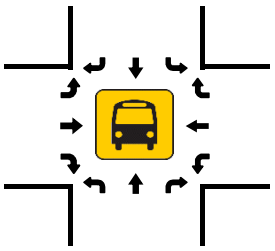
| | 0 | 3 | 1 | 0 |
|---|---|---|---|---|
| | 0 | 1 | 3 | 0 |

| CONTROL | | | |
|---|---|---|---|
| Signalized | | | |
| TEV | 3368 | 0 | 3836 |
| | AM | NOON | PM |
| PHF | 0.94 | | 0.97 |

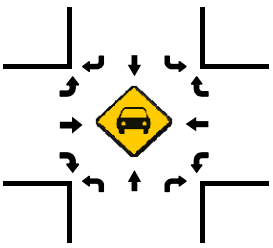
Total Vehicles (AM)



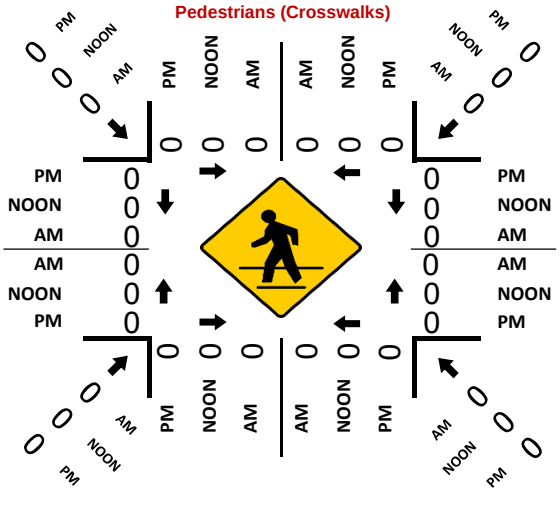
Total Vehicles (AM)



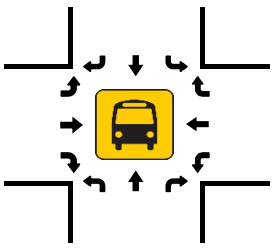
Total Vehicles (NOON)



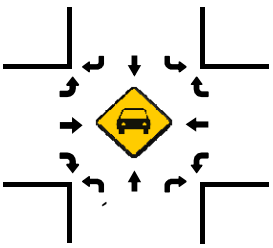
Pedestrians (Crosswalks)



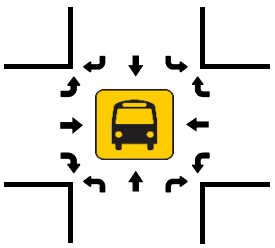
Total Vehicles (NOON)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

**Location:** Cherry Ave & E Bixby Rd
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05321-004
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | Cherry Ave | | | | Cherry Ave | | | | E Bixby Rd | | | | E Bixby Rd | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 1 | 3 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 5 | 205 | 2 | 1 | 9 | 404 | 6 | 0 | 8 | 13 | 12 | 0 | 2 | 1 | 0 | 0 | 668 |
| 7:15 AM | 8 | 263 | 2 | 0 | 8 | 464 | 12 | 0 | 7 | 0 | 13 | 0 | 1 | 2 | 1 | 0 | 781 |
| 7:30 AM | 8 | 299 | 4 | 0 | 12 | 522 | 13 | 0 | 13 | 3 | 8 | 0 | 0 | 8 | 2 | 0 | 892 |
| 7:45 AM | 18 | 306 | 6 | 0 | 14 | 501 | 16 | 0 | 15 | 1 | 8 | 0 | 2 | 7 | 4 | 0 | 898 |
| 8:00 AM | 13 | 303 | 7 | 1 | 7 | 415 | 11 | 0 | 15 | 5 | 9 | 0 | 4 | 7 | 0 | 0 | 797 |
| 8:15 AM | 15 | 286 | 12 | 0 | 4 | 356 | 15 | 0 | 13 | 5 | 20 | 0 | 1 | 3 | 4 | 0 | 734 |
| 8:30 AM | 17 | 302 | 8 | 1 | 5 | 424 | 14 | 0 | 10 | 2 | 2 | 0 | 1 | 1 | 2 | 0 | 789 |
| 8:45 AM | 7 | 306 | 12 | 0 | 3 | 352 | 13 | 0 | 8 | 2 | 13 | 0 | 4 | 3 | 0 | 0 | 723 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 91 | 2270 | 53 | 3 | 62 | 3438 | 100 | 0 | 89 | 31 | 85 | 0 | 15 | 32 | 13 | 0 | 6282 |
| **APPROACH %'s :** | 3.76% | 93.92% | 2.19% | 0.12% | 1.72% | 95.50% | 2.78% | 0.00% | 43.41% | 15.12% | 41.46% | 0.00% | 25.00% | 53.33% | 21.67% | 0.00% | |
| **PEAK HR :** | 07:15 AM - 08:15 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 47 | 1171 | 19 | 1 | 41 | 1902 | 52 | 0 | 50 | 9 | 38 | 0 | 7 | 24 | 7 | 0 | 3368 |
| **PEAK HR FACTOR :** | 0.653 | 0.957 | 0.679 | 0.250 | 0.732 | 0.911 | 0.813 | 0.000 | 0.833 | 0.450 | 0.731 | 0.000 | 0.438 | 0.750 | 0.438 | 0.000 | 0.938 |
| | 0.938 | | | | 0.912 | | | | 0.836 | | | | 0.731 | | | | |

| **PM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 3 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 16 | 414 | 17 | 0 | 3 | 358 | 17 | 0 | 17 | 3 | 7 | 0 | 9 | 12 | 3 | 0 | 876 |
| 4:15 PM | 9 | 465 | 18 | 0 | 3 | 324 | 14 | 0 | 15 | 3 | 6 | 0 | 4 | 13 | 9 | 0 | 883 |
| 4:30 PM | 10 | 479 | 10 | 0 | 4 | 356 | 29 | 0 | 21 | 6 | 14 | 0 | 16 | 12 | 20 | 0 | 977 |
| 4:45 PM | 9 | 430 | 10 | 1 | 2 | 333 | 13 | 1 | 26 | 2 | 5 | 0 | 4 | 8 | 4 | 0 | 848 |
| 5:00 PM | 12 | 496 | 5 | 0 | 5 | 371 | 27 | 0 | 26 | 7 | 7 | 0 | 8 | 7 | 5 | 0 | 976 |
| 5:15 PM | 12 | 503 | 16 | 1 | 2 | 378 | 24 | 0 | 27 | 5 | 6 | 0 | 4 | 7 | 1 | 0 | 986 |
| 5:30 PM | 13 | 464 | 15 | 0 | 4 | 372 | 10 | 0 | 30 | 3 | 5 | 0 | 5 | 13 | 4 | 0 | 938 |
| 5:45 PM | 9 | 463 | 19 | 0 | 2 | 373 | 23 | 0 | 14 | 6 | 6 | 0 | 7 | 8 | 6 | 0 | 936 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 90 | 3714 | 110 | 2 | 25 | 2865 | 157 | 1 | 176 | 35 | 56 | 0 | 57 | 80 | 52 | 0 | 7420 |
| **APPROACH %'s :** | 2.30% | 94.84% | 2.81% | 0.05% | 0.82% | 94.00% | 5.15% | 0.03% | 65.92% | 13.11% | 20.97% | 0.00% | 30.16% | 42.33% | 27.51% | 0.00% | |
| **PEAK HR :** | 05:00 PM - 06:00 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 46 | 1926 | 55 | 1 | 13 | 1494 | 84 | 0 | 97 | 21 | 24 | 0 | 24 | 35 | 16 | 0 | 3836 |
| **PEAK HR FACTOR :** | 0.885 | 0.957 | 0.724 | 0.250 | 0.650 | 0.988 | 0.778 | 0.000 | 0.808 | 0.750 | 0.857 | 0.000 | 0.750 | 0.673 | 0.667 | 0.000 | 0.973 |
| | 0.953 | | | | 0.985 | | | | 0.888 | | | | 0.852 | | | | |

Prepared by National Data & Surveying Services

# Cherry Ave & E 36th St

## Peak Hour Turning Movement Count

**ID:** 18-05321-005
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:15 AM - 08:15 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 05:00 PM - 06:00 PM | 04:00 PM - 06:00 PM |

### Cherry Ave — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 28 | 1943 | 11 | 0 | 1267 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 38 | 1524 | 8 | 0 | 2006 | PM |

### E 36th St — EASTBOUND

| AM | NOON | PM | |
|---|---|---|---|
| 52 | 0 | 77 | ⇦ |
| 0 | 0 | 0 | 0 |
| 26 | 0 | 75 | 0 |
| 14 | 0 | 46 | 1 |
| 30 | 0 | 31 | 0 |
| AM | NOON | PM | |

### CONTROL

Signalized

| | | | |
|---|---|---|---|
| TEV | 3734 AM | 0 NOON | 4249 PM |
| PHF | 0.95 | | 0.94 |

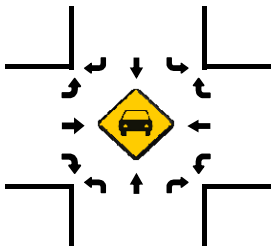
### WESTBOUND — E 36th St

| PM | NOON | AM | |
|---|---|---|---|
| 22 | 0 | 11 | 0 |
| 16 | 0 | 14 | 1 |
| 252 | 0 | 220 | 2 |
| 0 | 0 | 0 | 0 |
| 353 | 0 | 218 | ⇨ |
| PM | NOON | AM | |

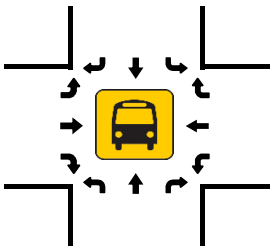
### Cherry Ave — NORTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 1813 | 6 | 23 | 1909 | 299 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 2197 | 4 | 10 | 1230 | 193 | AM |

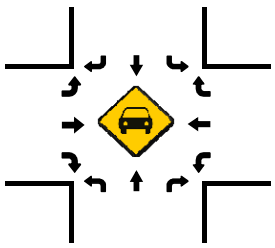
Total Vehicles (AM)



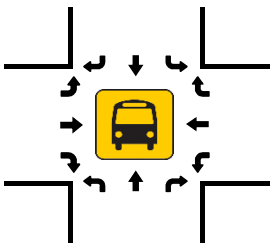
Total Vehicles (AM)



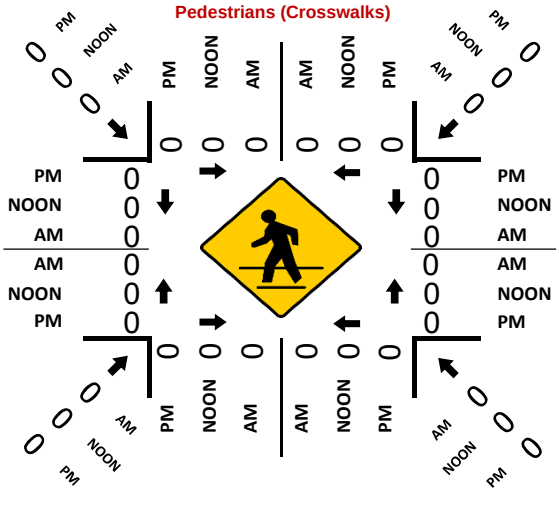
Total Vehicles (NOON)



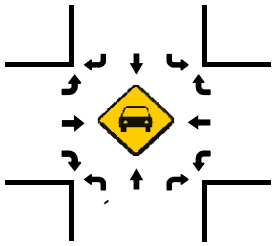
Total Vehicles (NOON)



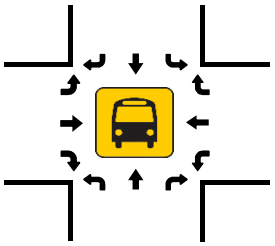
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

**Location:** Cherry Ave & E 36th St
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05321-005
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | Cherry Ave | | | | Cherry Ave | | | | E 36th St | | | | E 36th St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 1 | 3 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 0 | 222 | 51 | 0 | 2 | 393 | 1 | 0 | 6 | 2 | 5 | 0 | 28 | 3 | 2 | 0 | 715 |
| 7:15 AM | 0 | 255 | 56 | 1 | 0 | 463 | 5 | 0 | 6 | 2 | 9 | 0 | 53 | 2 | 1 | 0 | 853 |
| 7:30 AM | 2 | 298 | 49 | 0 | 1 | 509 | 7 | 0 | 5 | 5 | 8 | 0 | 57 | 4 | 3 | 0 | 948 |
| 7:45 AM | 3 | 325 | 37 | 1 | 5 | 530 | 9 | 0 | 7 | 3 | 5 | 0 | 52 | 2 | 4 | 0 | 983 |
| 8:00 AM | 5 | 352 | 51 | 2 | 5 | 441 | 7 | 0 | 8 | 4 | 8 | 0 | 58 | 6 | 3 | 0 | 950 |
| 8:15 AM | 8 | 315 | 42 | 0 | 8 | 377 | 6 | 0 | 4 | 9 | 11 | 0 | 58 | 0 | 2 | 0 | 840 |
| 8:30 AM | 6 | 325 | 38 | 4 | 3 | 403 | 7 | 0 | 4 | 3 | 6 | 0 | 38 | 4 | 6 | 0 | 847 |
| 8:45 AM | 9 | 324 | 38 | 1 | 2 | 398 | 6 | 0 | 8 | 4 | 2 | 0 | 46 | 4 | 4 | 0 | 846 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 33 | 2416 | 362 | 9 | 26 | 3514 | 48 | 0 | 48 | 32 | 54 | 0 | 390 | 25 | 25 | 0 | 6982 |
| **APPROACH %'s :** | 1.17% | 85.67% | 12.84% | 0.32% | 0.72% | 97.94% | 1.34% | 0.00% | 35.82% | 23.88% | 40.30% | 0.00% | 88.64% | 5.68% | 5.68% | 0.00% | |
| **PEAK HR :** | 07:15 AM - 08:15 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 10 | 1230 | 193 | 4 | 11 | 1943 | 28 | 0 | 26 | 14 | 30 | 0 | 220 | 14 | 11 | 0 | 3734 |
| **PEAK HR FACTOR :** | 0.500 | 0.874 | 0.862 | 0.500 | 0.550 | 0.917 | 0.778 | 0.000 | 0.813 | 0.700 | 0.833 | 0.000 | 0.948 | 0.583 | 0.688 | 0.000 | 0.950 |
| | | 0.876 | | | | 0.911 | | | | 0.875 | | | | 0.914 | | | |

| PM | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 3 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 6 | 461 | 67 | 2 | 2 | 346 | 11 | 0 | 12 | 4 | 7 | 0 | 66 | 4 | 2 | 0 | 990 |
| 4:15 PM | 2 | 453 | 53 | 3 | 4 | 365 | 9 | 0 | 19 | 8 | 5 | 0 | 60 | 2 | 5 | 0 | 988 |
| 4:30 PM | 2 | 472 | 67 | 1 | 1 | 348 | 14 | 0 | 11 | 13 | 6 | 0 | 65 | 3 | 5 | 0 | 1008 |
| 4:45 PM | 4 | 452 | 72 | 1 | 2 | 340 | 7 | 0 | 14 | 6 | 10 | 0 | 55 | 3 | 6 | 0 | 972 |
| 5:00 PM | 5 | 461 | 84 | 1 | 2 | 357 | 10 | 0 | 26 | 13 | 8 | 0 | 63 | 1 | 8 | 0 | 1039 |
| 5:15 PM | 3 | 499 | 93 | 1 | 2 | 386 | 8 | 0 | 24 | 6 | 13 | 0 | 84 | 6 | 4 | 0 | 1129 |
| 5:30 PM | 7 | 449 | 67 | 4 | 3 | 370 | 7 | 0 | 19 | 16 | 7 | 0 | 56 | 4 | 9 | 0 | 1018 |
| 5:45 PM | 8 | 500 | 55 | 0 | 1 | 411 | 13 | 0 | 6 | 11 | 3 | 0 | 49 | 5 | 1 | 0 | 1063 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 37 | 3747 | 558 | 13 | 17 | 2923 | 79 | 0 | 131 | 77 | 59 | 0 | 498 | 28 | 40 | 0 | 8207 |
| **APPROACH %'s :** | 0.85% | 86.04% | 12.81% | 0.30% | 0.56% | 96.82% | 2.62% | 0.00% | 49.06% | 28.84% | 22.10% | 0.00% | 87.99% | 4.95% | 7.07% | 0.00% | |
| **PEAK HR :** | 05:00 PM - 06:00 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 23 | 1909 | 299 | 6 | 8 | 1524 | 38 | 0 | 75 | 46 | 31 | 0 | 252 | 16 | 22 | 0 | 4249 |
| **PEAK HR FACTOR :** | 0.719 | 0.955 | 0.804 | 0.375 | 0.667 | 0.927 | 0.731 | 0.000 | 0.721 | 0.719 | 0.596 | 0.000 | 0.750 | 0.667 | 0.611 | 0.000 | 0.941 |
| | | 0.938 | | | | 0.924 | | | | 0.809 | | | | 0.771 | | | |

Prepared by National Data & Surveying Services

# Industry Ave & E 36th St

## Peak Hour Turning Movement Count

**ID:** 18-05321-006
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:15 AM - 08:15 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 04:30 PM - 05:30 PM | 04:00 PM - 06:00 PM |

### Industry Ave — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 252 | 0 | 12 | 1 | 180 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 280 | 0 | 3 | 2 | 383 | PM |
| | 1 | 0.5 | 0.5 | 0 | | |

### E 36th St — EASTBOUND

| AM | NOON | PM | |
|---|---|---|---|
| 253 | 0 | 284 | |
| 0 | 0 | 0 | 0 |
| 178 | 0 | 377 | 1 |
| 6 | 0 | 1 | 1 |
| 0 | 0 | 0 | 0 |
| AM | NOON | PM | |

### CONTROL

Signalized

| | | | |
|---|---|---|---|
| TEV | 451 AM | 0 NOON | 671 PM |
| PHF | 0.93 | | 0.91 |

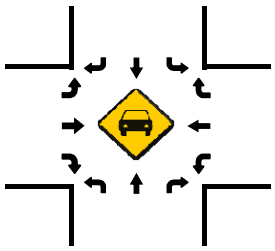
### E 36th St — WESTBOUND

| | PM | NOON | AM |
|---|---|---|---|
| 1 | 4 | 0 | 1 |
| 0.5 | 4 | 0 | 1 |
| 0.5 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| | 4 | 0 | 18 |
| | PM | NOON | AM |

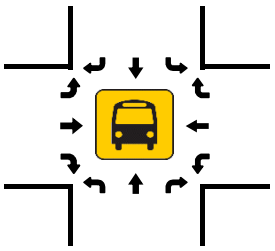
| | | | | | | |
|---|---|---|---|---|---|---|
| | 0 | 1 | 0.5 | 0.5 | | |
| PM | 0 | 0 | 0 | 0 | 0 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 0 | 0 | 0 | 0 | 0 | AM |

### Industry Ave — NORTHBOUND

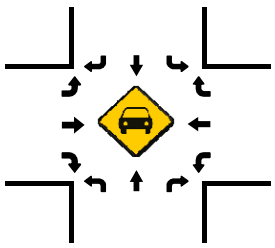
Total Vehicles (AM)



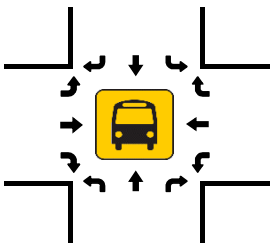
Total Vehicles (AM)



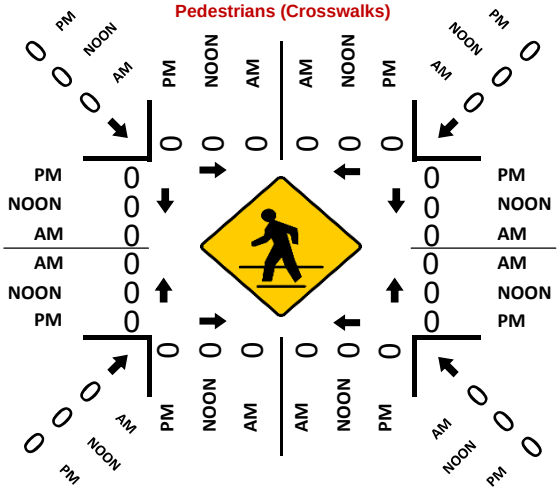
Total Vehicles (NOON)



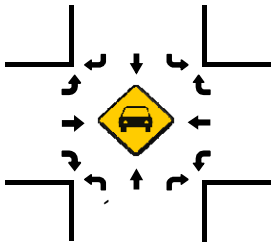
Total Vehicles (NOON)



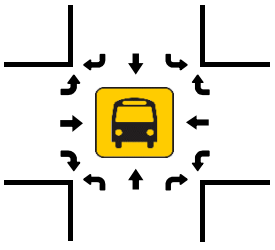
Pedestrians (Crosswalks)




Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

**Location:** Industry Ave & E 36th St
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05321-006
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | Industry Ave | | | | Industry Ave | | | | E 36th St | | | | E 36th St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 1 | 0.5 | 0.5 | 0 | 0.5 | 0.5 | 1 | 0 | 1 | 1 | 0 | 0 | 0.5 | 0.5 | 1 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 0 | 52 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 94 |
| 7:15 AM | 0 | 0 | 0 | 0 | 3 | 0 | 58 | 0 | 49 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 111 |
| 7:30 AM | 0 | 0 | 0 | 0 | 7 | 0 | 58 | 0 | 49 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 118 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 70 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 101 |
| 8:00 AM | 0 | 0 | 0 | 0 | 2 | 0 | 66 | 1 | 50 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 121 |
| 8:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 61 | 0 | 44 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 106 |
| 8:30 AM | 0 | 0 | 0 | 0 | 1 | 0 | 47 | 0 | 42 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 91 |
| 8:45 AM | 0 | 0 | 0 | 0 | 1 | 0 | 51 | 0 | 36 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 91 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 0 | 0 | 0 | 0 | 14 | 0 | 453 | 1 | 352 | 7 | 0 | 1 | 0 | 2 | 3 | 0 | 833 |
| **APPROACH %'s :** | | | | | 2.99% | 0.00% | 96.79% | 0.21% | 97.78% | 1.94% | 0.00% | 0.28% | 0.00% | 40.00% | 60.00% | 0.00% | |
| **PEAK HR :** | 07:15 AM - 08:15 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 0 | 0 | 0 | 0 | 12 | 0 | 252 | 1 | 178 | 6 | 0 | 0 | 0 | 1 | 1 | 0 | 451 |
| **PEAK HR FACTOR :** | 0.000 | 0.000 | 0.000 | 0.000 | 0.429 | 0.000 | 0.900 | 0.250 | 0.890 | 0.500 | 0.000 | 0.000 | 0.000 | 0.250 | 0.250 | 0.000 | 0.932 |
| | | | | | 0.946 | | | | 0.885 | | | | 0.500 | | | | |

| PM | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0.5 | 0.5 | 0 | 0.5 | 0.5 | 1 | 0 | 1 | 1 | 0 | 0 | 0.5 | 0.5 | 1 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 0 | 0 | 0 | 0 | 2 | 0 | 72 | 0 | 79 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 154 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 1 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 121 |
| 4:30 PM | 0 | 0 | 0 | 0 | 1 | 0 | 76 | 0 | 87 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 167 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 54 | 1 | 79 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 135 |
| 5:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 72 | 0 | 108 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 184 |
| 5:15 PM | 0 | 0 | 0 | 0 | 2 | 0 | 78 | 1 | 103 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 185 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 58 | 1 | 88 | 0 | 0 | 0 | 0 | 2 | 9 | 0 | 158 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 55 | 0 | 68 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 125 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 0 | 0 | 0 | 0 | 5 | 0 | 525 | 4 | 672 | 1 | 0 | 1 | 0 | 6 | 15 | 0 | 1229 |
| **APPROACH %'s :** | | | | | 0.94% | 0.00% | 98.31% | 0.75% | 99.70% | 0.15% | 0.00% | 0.15% | 0.00% | 28.57% | 71.43% | 0.00% | |
| **PEAK HR :** | 04:30 PM - 05:30 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 0 | 0 | 0 | 0 | 3 | 0 | 280 | 2 | 377 | 1 | 0 | 0 | 0 | 4 | 4 | 0 | 671 |
| **PEAK HR FACTOR :** | 0.000 | 0.000 | 0.000 | 0.000 | 0.375 | 0.000 | 0.897 | 0.500 | 0.873 | 0.250 | 0.000 | 0.000 | 0.000 | 0.500 | 0.500 | 0.000 | 0.907 |
| | | | | | 0.880 | | | | 0.867 | | | | 0.667 | | | | |

Prepared by National Data & Surveying Services

# Cherry Ave & E Wardlow Rd

## Peak Hour Turning Movement Count

**ID:** 18-05321-007
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:30 AM - 08:30 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 05:00 PM - 06:00 PM | 04:00 PM - 06:00 PM |

### SOUTHBOUND — Cherry Ave

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 249 | 1851 | 44 | 3 | 1501 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 226 | 1555 | 27 | 7 | 2249 | PM |
| | 0 | 3 | 1 | 0 | | |

### EASTBOUND — E Wardlow Rd

| AM | NOON | PM | |
|---|---|---|---|
| 447 | 0 | 395 | |
| 0 | 0 | 0 | 0 |
| 262 | 0 | 505 | 1.5 |
| 23 | 0 | 26 | 1.5 |
| 131 | 0 | 148 | 0 |
| AM | NOON | PM | |

### WESTBOUND — E Wardlow Rd

| PM | NOON | AM | |
|---|---|---|---|
| 48 | 0 | 23 | 0 |
| 22 | 0 | 17 | 1.5 |
| 68 | 0 | 39 | 1.5 |
| 0 | 0 | 0 | 0 |
| 103 | 0 | 109 | |
| PM | NOON | AM | |

### CONTROL

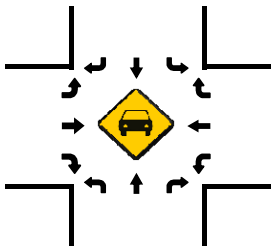
Signalized

| | | | |
|---|---|---|---|
| TEV | 4080 AM | 0 NOON | 4518 PM |
| PHF | 0.93 | | 0.92 |

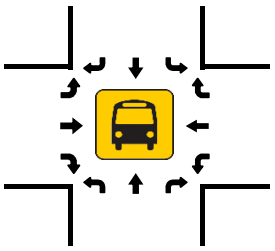
### NORTHBOUND — Cherry Ave

| | | | | | |
|---|---|---|---|---|---|
| PM | 1771 | 0 | 147 | 1689 | 50 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 2023 | 2 | 181 | 1213 | 42 | AM |
| | | 0 | 1 | 2 | 1 | |

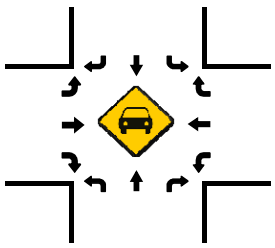
Total Vehicles (AM)



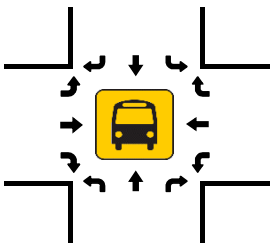
Total Vehicles (AM)



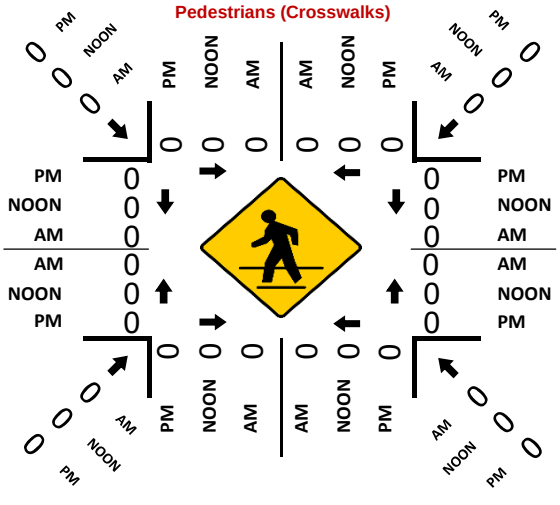
Total Vehicles (NOON)



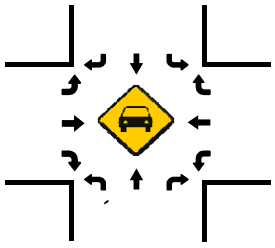
Total Vehicles (NOON)



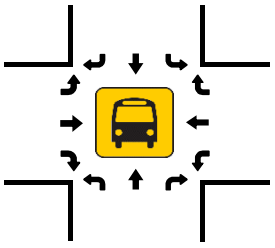
Pedestrians (Crosswalks)




Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

**Location:** Cherry Ave & E Wardlow Rd
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05321-007
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | Cherry Ave | | | | Cherry Ave | | | | E Wardlow Rd | | | | E Wardlow Rd | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 1 | 2 | 1 | 0 | 1 | 3 | 0 | 0 | 1.5 | 1.5 | 0 | 0 | 1.5 | 1.5 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 13 | 214 | 8 | 0 | 9 | 370 | 40 | 0 | 52 | 2 | 22 | 0 | 7 | 0 | 12 | 0 | 749 |
| 7:15 AM | 32 | 262 | 8 | 0 | 5 | 448 | 54 | 1 | 43 | 2 | 28 | 0 | 6 | 1 | 4 | 0 | 894 |
| 7:30 AM | 43 | 267 | 7 | 0 | 10 | 502 | 63 | 1 | 70 | 5 | 37 | 0 | 14 | 6 | 7 | 0 | 1032 |
| 7:45 AM | 33 | 320 | 11 | 1 | 12 | 540 | 65 | 1 | 61 | 4 | 34 | 0 | 5 | 7 | 5 | 0 | 1099 |
| 8:00 AM | 64 | 307 | 18 | 0 | 7 | 403 | 67 | 1 | 80 | 8 | 29 | 0 | 10 | 3 | 7 | 0 | 1004 |
| 8:15 AM | 41 | 319 | 6 | 1 | 15 | 406 | 54 | 0 | 51 | 6 | 31 | 0 | 10 | 1 | 4 | 0 | 945 |
| 8:30 AM | 38 | 295 | 15 | 1 | 6 | 385 | 47 | 2 | 58 | 5 | 28 | 0 | 19 | 5 | 6 | 0 | 910 |
| 8:45 AM | 38 | 318 | 15 | 0 | 9 | 409 | 52 | 1 | 55 | 5 | 26 | 0 | 6 | 5 | 8 | 0 | 947 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 302 | 2302 | 88 | 3 | 73 | 3463 | 442 | 7 | 470 | 37 | 235 | 0 | 77 | 28 | 53 | 0 | 7580 |
| **APPROACH %'s :** | 11.21% | 85.42% | 3.27% | 0.11% | 1.83% | 86.90% | 11.09% | 0.18% | 63.34% | 4.99% | 31.67% | 0.00% | 48.73% | 17.72% | 33.54% | 0.00% | |
| **PEAK HR :** | 07:30 AM - 08:30 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 181 | 1213 | 42 | 2 | 44 | 1851 | 249 | 3 | 262 | 23 | 131 | 0 | 39 | 17 | 23 | 0 | 4080 |
| **PEAK HR FACTOR :** | 0.707 | 0.948 | 0.583 | 0.500 | 0.733 | 0.857 | 0.929 | 0.750 | 0.819 | 0.719 | 0.885 | 0.000 | 0.696 | 0.607 | 0.821 | 0.000 | 0.928 |
| | 0.924 | | | | 0.869 | | | | 0.889 | | | | 0.731 | | | | |

| NS/EW Streets: | Cherry Ave | | | | Cherry Ave | | | | E Wardlow Rd | | | | E Wardlow Rd | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 1 | 2 | 1 | 0 | 1 | 3 | 0 | 0 | 1.5 | 1.5 | 0 | 0 | 1.5 | 1.5 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 19 | 387 | 9 | 0 | 10 | 323 | 57 | 2 | 106 | 6 | 51 | 0 | 24 | 1 | 10 | 0 | 1005 |
| 4:15 PM | 23 | 414 | 11 | 0 | 14 | 378 | 55 | 1 | 102 | 7 | 38 | 0 | 13 | 5 | 10 | 0 | 1071 |
| 4:30 PM | 34 | 384 | 13 | 0 | 18 | 321 | 57 | 1 | 136 | 8 | 44 | 0 | 19 | 4 | 14 | 0 | 1053 |
| 4:45 PM | 45 | 435 | 11 | 0 | 12 | 373 | 48 | 1 | 103 | 5 | 28 | 0 | 9 | 2 | 10 | 0 | 1082 |
| 5:00 PM | 38 | 391 | 13 | 0 | 9 | 352 | 51 | 4 | 140 | 7 | 42 | 0 | 20 | 2 | 10 | 0 | 1079 |
| 5:15 PM | 44 | 455 | 15 | 0 | 7 | 430 | 56 | 2 | 126 | 12 | 39 | 0 | 12 | 9 | 17 | 0 | 1224 |
| 5:30 PM | 33 | 367 | 8 | 0 | 5 | 364 | 60 | 1 | 134 | 5 | 42 | 0 | 22 | 5 | 16 | 0 | 1062 |
| 5:45 PM | 32 | 476 | 14 | 0 | 6 | 409 | 59 | 0 | 105 | 2 | 25 | 0 | 14 | 6 | 5 | 0 | 1153 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 268 | 3309 | 94 | 0 | 81 | 2950 | 443 | 12 | 952 | 52 | 309 | 0 | 133 | 34 | 92 | 0 | 8729 |
| **APPROACH %'s :** | 7.30% | 90.14% | 2.56% | 0.00% | 2.32% | 84.62% | 12.71% | 0.34% | 72.51% | 3.96% | 23.53% | 0.00% | 51.35% | 13.13% | 35.52% | 0.00% | |
| **PEAK HR :** | 05:00 PM - 06:00 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 147 | 1689 | 50 | 0 | 27 | 1555 | 226 | 7 | 505 | 26 | 148 | 0 | 68 | 22 | 48 | 0 | 4518 |
| **PEAK HR FACTOR :** | 0.835 | 0.887 | 0.833 | 0.000 | 0.750 | 0.904 | 0.942 | 0.438 | 0.902 | 0.542 | 0.881 | 0.000 | 0.773 | 0.611 | 0.706 | 0.000 | 0.923 |
| | 0.903 | | | | 0.917 | | | | 0.898 | | | | 0.802 | | | | |

Prepared by National Data & Surveying Services

# Boeing & E Wardlow Rd

## Peak Hour Turning Movement Count

**ID:** 18-05321-008
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 08:00 AM - 09:00 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 04:30 PM - 05:30 PM | 04:00 PM - 06:00 PM |

**CONTROL:** Signalized

| | AM | NOON | PM |
|---|---|---|---|
| TEV | 74 | 0 | 75 |
| PHF | 0.71 | | 0.72 |

### Boeing — SOUTHBOUND

| | Left | Thru | Right | Peds | Total | |
|---|---|---|---|---|---|---|
| AM | 0 | 0 | 0 | 0 | 0 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 0 | 0 | 0 | 0 | 0 | PM |

### E Wardlow Rd — EASTBOUND

| | AM | NOON | PM |
|---|---|---|---|
| Left | 2 | 0 | 3 |
| Thru | 46 | 0 | 26 |
| Right | 0 | 0 | 0 |
| Peds | 1 | 0 | 3 |

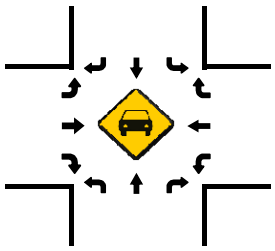
### E Wardlow Rd — WESTBOUND

| | PM | NOON | AM |
|---|---|---|---|
| Left | 0 | 0 | 0 |
| Thru | 39 | 0 | 21 |
| Right | 0 | 0 | 1 |
| Peds | 0 | 0 | 0 |

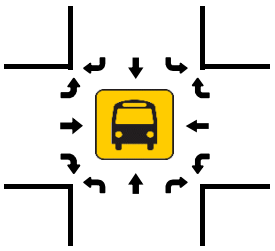
### Boeing — NORTHBOUND

| | Left | Thru | Right | Peds | Total | |
|---|---|---|---|---|---|---|
| PM | 3 | 0 | 4 | 0 | 0 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 2 | 0 | 3 | 0 | 0 | AM |

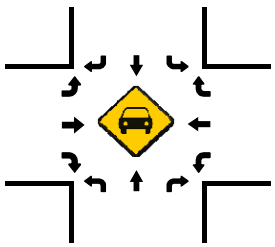
Total Vehicles (AM)



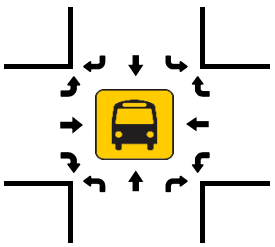
Total Vehicles (AM)



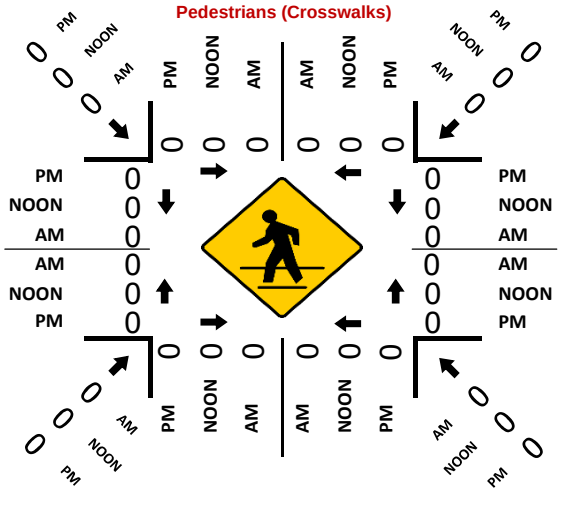
Total Vehicles (NOON)



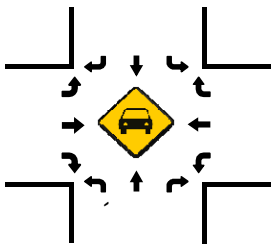
Total Vehicles (NOON)



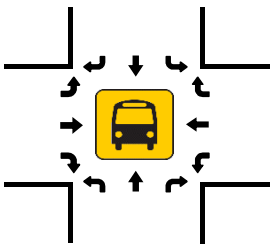
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

**Location:** Boeing & E Wardlow Rd
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05321-008
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | Boeing | | | | Boeing | | | | E Wardlow Rd | | | | E Wardlow Rd | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 1.5 | 0 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 2 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 2 | 0 | 0 | 6 |
| 7:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 8 | 0 | 0 | 17 |
| 7:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 6 | 0 | 0 | 14 |
| 7:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 1 | 0 | 0 | 3 | 0 | 0 | 15 |
| 8:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 1 | 0 | 2 | 0 | 0 | 13 |
| 8:15 AM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 4 | 0 | 0 | 12 |
| 8:30 AM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 1 | 0 | 1 | 9 | 0 | 0 | 23 |
| 8:45 AM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 1 | 0 | 6 | 0 | 0 | 26 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 77 | 2 | 3 | 1 | 40 | 0 | 0 | 126 |
| **APPROACH %'s :** | 100.00% | 0.00% | 0.00% | 0.00% | | | | | 0.00% | 93.90% | 2.44% | 3.66% | 2.44% | 97.56% | 0.00% | 0.00% | |
| **PEAK HR :** | 08:00 AM - 09:00 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 1 | 2 | 1 | 21 | 0 | 0 | 74 |
| **PEAK HR FACTOR :** | 0.750 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.639 | 0.250 | 0.500 | 0.250 | 0.583 | 0.000 | 0.000 | 0.712 |
| | 0.750 | | | | | | | | 0.645 | | | | 0.550 | | | | |

| PM | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.5 | 0 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 2 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 0 | 13 | 0 | 0 | 21 |
| 4:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 | 8 | 0 | 0 | 18 |
| 4:30 PM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 1 | 1 | 0 | 13 | 0 | 0 | 26 |
| 4:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 5 | 0 | 0 | 9 |
| 5:00 PM | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 1 | 0 | 7 | 0 | 0 | 15 |
| 5:15 PM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 1 | 0 | 14 | 0 | 0 | 25 |
| 5:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 0 | 11 | 0 | 0 | 18 |
| 5:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 11 | 0 | 0 | 16 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | 3 | 5 | 0 | 82 | 0 | 0 | 148 |
| **APPROACH %'s :** | 100.00% | 0.00% | 0.00% | 0.00% | | | | | 0.00% | 87.10% | 4.84% | 8.06% | 0.00% | 100.00% | 0.00% | 0.00% | |
| **PEAK HR :** | 04:30 PM - 05:30 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 3 | 3 | 0 | 39 | 0 | 0 | 75 |
| **PEAK HR FACTOR :** | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.650 | 0.375 | 0.750 | 0.000 | 0.696 | 0.000 | 0.000 | 0.721 |
| | 0.500 | | | | | | | | 0.667 | | | | 0.696 | | | | |

Prepared by National Data & Surveying Services

# Orange Ave & E 32nd St

## Peak Hour Turning Movement Count

**ID:** 18-05322-001
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:15 AM - 08:15 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 04:45 PM - 05:45 PM | 04:00 PM - 06:00 PM |

### Orange Ave — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 6 | 688 | 177 | 0 | 442 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 6 | 544 | 79 | 0 | 805 | PM |

### E 32nd St — EASTBOUND

| AM | NOON | PM | | |
|---|---|---|---|---|
| 19 | 0 | 42 | ⇦ | |
| 0 | 0 | 0 | ↶ | 0 |
| 0 | 0 | 4 | ↱ | 0 |
| 26 | 0 | 2 | → | 1 |
| 51 | 0 | 27 | ↴ | 0 |
| AM | NOON | PM | | |

### E 32nd St — WESTBOUND

| PM | NOON | AM | | |
|---|---|---|---|---|
| 220 | 0 | 62 | ↰ | 1 |
| 2 | 0 | 0 | ← | 0 |
| 240 | 0 | 64 | ↰ | 1 |
| 0 | 0 | 0 | ↶ | 0 |
| 357 | 0 | 496 | ⇨ | |
| PM | NOON | AM | | |

### Orange Ave — NORTHBOUND

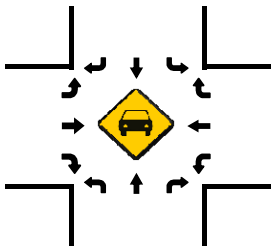
| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 811 | 0 | 34 | 581 | 276 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 803 | 0 | 13 | 380 | 293 | AM |

| | | | | |
|---|---|---|---|---|
| 0 | 1 | 1 | 0 | |

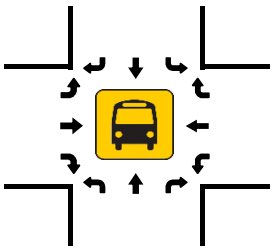
| | | | | |
|---|---|---|---|---|
| 0 | 1 | 1 | 0 | |

| CONTROL | | | |
|---|---|---|---|
| Signalized | | | |
| TEV | 1760 AM | 0 NOON | 2015 PM |
| PHF | 0.94 | | 0.86 |

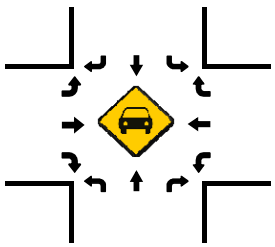
Total Vehicles (AM)



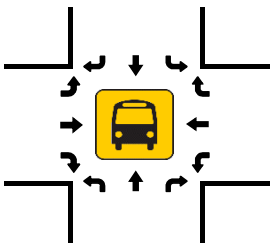
Total Vehicles (AM)



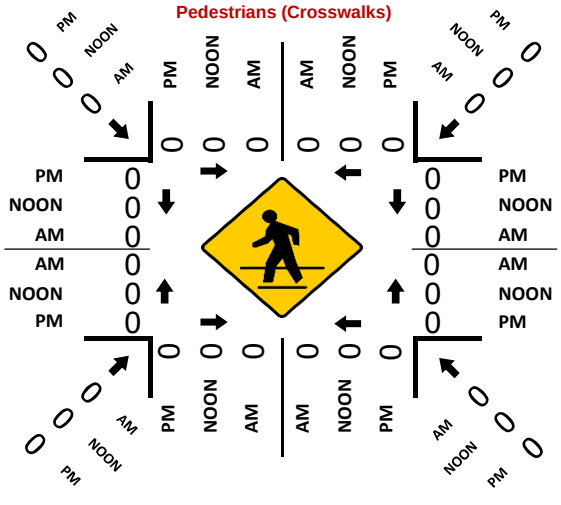
Total Vehicles (NOON)



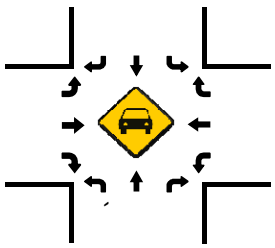
Total Vehicles (NOON)



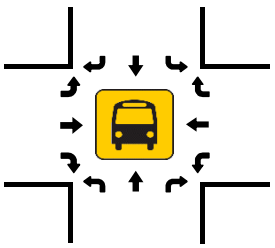
Pedestrians (Crosswalks)




Total Vehicles (PM)



Total Vehicles (PM)



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Orange Ave & E 32nd St
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05322-001
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | Orange Ave | | | | Orange Ave | | | | E 32nd St | | | | E 32nd St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 3 | 65 | 73 | 0 | 42 | 115 | 0 | 0 | 1 | 0 | 8 | 0 | 22 | 0 | 11 | 0 | 340 |
| 7:15 AM | 2 | 82 | 78 | 0 | 44 | 160 | 1 | 0 | 0 | 8 | 14 | 0 | 18 | 0 | 17 | 0 | 424 |
| 7:30 AM | 3 | 96 | 78 | 0 | 46 | 188 | 1 | 0 | 0 | 6 | 14 | 0 | 19 | 0 | 13 | 0 | 464 |
| 7:45 AM | 3 | 116 | 77 | 0 | 40 | 173 | 3 | 0 | 0 | 6 | 13 | 0 | 17 | 0 | 20 | 0 | 468 |
| 8:00 AM | 5 | 86 | 60 | 0 | 47 | 167 | 1 | 0 | 0 | 6 | 10 | 0 | 10 | 0 | 12 | 0 | 404 |
| 8:15 AM | 7 | 89 | 90 | 0 | 30 | 148 | 2 | 0 | 0 | 2 | 10 | 0 | 20 | 0 | 16 | 0 | 414 |
| 8:30 AM | 4 | 100 | 71 | 0 | 33 | 169 | 1 | 0 | 2 | 0 | 8 | 0 | 15 | 0 | 20 | 0 | 423 |
| 8:45 AM | 1 | 110 | 59 | 0 | 25 | 153 | 2 | 0 | 0 | 2 | 7 | 0 | 17 | 0 | 17 | 0 | 393 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 28 | 744 | 586 | 0 | 307 | 1273 | 11 | 0 | 3 | 30 | 84 | 0 | 138 | 0 | 126 | 0 | 3330 |
| **APPROACH %'s :** | 2.06% | 54.79% | 43.15% | 0.00% | 19.30% | 80.01% | 0.69% | 0.00% | 2.56% | 25.64% | 71.79% | 0.00% | 52.27% | 0.00% | 47.73% | 0.00% | |
| **PEAK HR :** | 07:15 AM - 08:15 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 13 | 380 | 293 | 0 | 177 | 688 | 6 | 0 | 0 | 26 | 51 | 0 | 64 | 0 | 62 | 0 | 1760 |
| **PEAK HR FACTOR :** | 0.650 | 0.819 | 0.939 | 0.000 | 0.941 | 0.915 | 0.500 | 0.000 | 0.000 | 0.813 | 0.911 | 0.000 | 0.842 | 0.000 | 0.775 | 0.000 | 0.940 |
| | 0.875 | | | | 0.927 | | | | 0.875 | | | | 0.851 | | | | |

| **PM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 10 | 119 | 78 | 0 | 23 | 183 | 5 | 0 | 0 | 1 | 5 | 0 | 68 | 0 | 70 | 0 | 562 |
| 4:15 PM | 4 | 126 | 59 | 0 | 19 | 132 | 2 | 0 | 0 | 3 | 4 | 0 | 42 | 1 | 55 | 0 | 447 |
| 4:30 PM | 6 | 126 | 65 | 0 | 16 | 148 | 2 | 0 | 0 | 1 | 2 | 0 | 39 | 0 | 43 | 0 | 448 |
| 4:45 PM | 3 | 141 | 58 | 0 | 19 | 130 | 3 | 0 | 1 | 1 | 6 | 0 | 54 | 0 | 44 | 0 | 460 |
| 5:00 PM | 10 | 161 | 88 | 0 | 19 | 148 | 2 | 0 | 1 | 0 | 3 | 0 | 83 | 0 | 71 | 0 | 586 |
| 5:15 PM | 12 | 144 | 73 | 0 | 19 | 130 | 1 | 0 | 0 | 1 | 9 | 0 | 61 | 1 | 56 | 0 | 507 |
| 5:30 PM | 9 | 135 | 57 | 0 | 22 | 136 | 0 | 0 | 2 | 0 | 9 | 0 | 42 | 1 | 49 | 0 | 462 |
| 5:45 PM | 5 | 122 | 48 | 0 | 24 | 134 | 2 | 0 | 0 | 2 | 3 | 0 | 36 | 1 | 54 | 0 | 431 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 59 | 1074 | 526 | 0 | 161 | 1141 | 17 | 0 | 4 | 9 | 41 | 0 | 425 | 4 | 442 | 0 | 3903 |
| **APPROACH %'s :** | 3.56% | 64.74% | 31.71% | 0.00% | 12.21% | 86.50% | 1.29% | 0.00% | 7.41% | 16.67% | 75.93% | 0.00% | 48.79% | 0.46% | 50.75% | 0.00% | |
| **PEAK HR :** | 04:45 PM - 05:45 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 34 | 581 | 276 | 0 | 79 | 544 | 6 | 0 | 4 | 2 | 27 | 0 | 240 | 2 | 220 | 0 | 2015 |
| **PEAK HR FACTOR :** | 0.708 | 0.902 | 0.784 | 0.000 | 0.898 | 0.919 | 0.500 | 0.000 | 0.500 | 0.500 | 0.750 | 0.000 | 0.723 | 0.500 | 0.775 | 0.000 | 0.860 |
| | 0.860 | | | | 0.930 | | | | 0.750 | | | | 0.750 | | | | |

Prepared by National Data & Surveying Services

# I-405 NB Ramps & E 32nd St

## Peak Hour Turning Movement Count

**ID:** 18-05321-009
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

**PEAK HOURS**

AM: 07:00 AM - 08:00 AM
NOON: NONE
PM: 04:00 PM - 05:00 PM

**COUNT PERIODS**

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

### I-405 NB Ramps — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 0 | 0 | 0 | 0 | 0 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 0 | 0 | 0 | 0 | 0 | PM |

### EASTBOUND — E 32nd St

| AM | NOON | PM | | |
|---|---|---|---|---|
| 139 | 0 | 387 | ⇦ | |
| 0 | 0 | 2 | ↶ | 0 |
| 0 | 0 | 0 | ↱ | 0 |
| 14 | 0 | 35 | → | 1 |
| 455 | 0 | 307 | ↷ | 0 |
| AM | NOON | PM | | |

### WESTBOUND — E 32nd St

| PM | NOON | AM | | |
|---|---|---|---|---|
| 0 | 0 | 0 | ↶ | 0 |
| 37 | 0 | 3 | ← | 1 |
| 11 | 0 | 0 | ↰ | 0 |
| 0 | 0 | 0 | ↱ | 0 |
| 37 | 0 | 25 | ⇨ | |
| PM | NOON | AM | | |

**CONTROL**

1-Way Stop(NB)

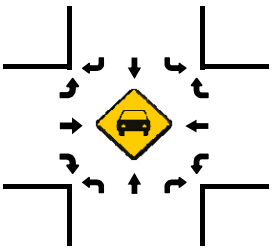
| | AM | NOON | PM |
|---|---|---|---|
| TEV | 620 | 0 | 742 |
| PHF | 0.95 | | 0.80 |

### I-405 NB Ramps — NORTHBOUND

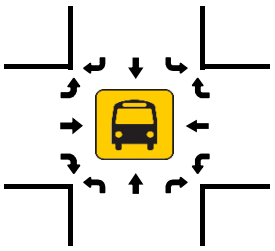
| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 318 | 0 | 348 | 0 | 2 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 456 | 1 | 136 | 0 | 11 | AM |

| | | | | |
|---|---|---|---|---|
| ⇧ | 0 | 0.5 | 0 | 0.5 |

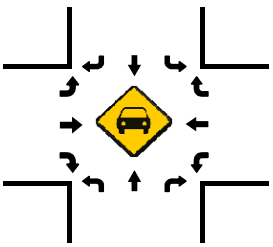
**Total Vehicles (AM)**



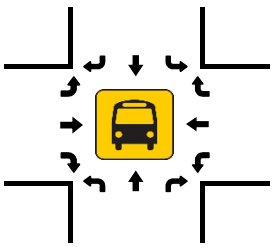
**Total Vehicles (AM)**



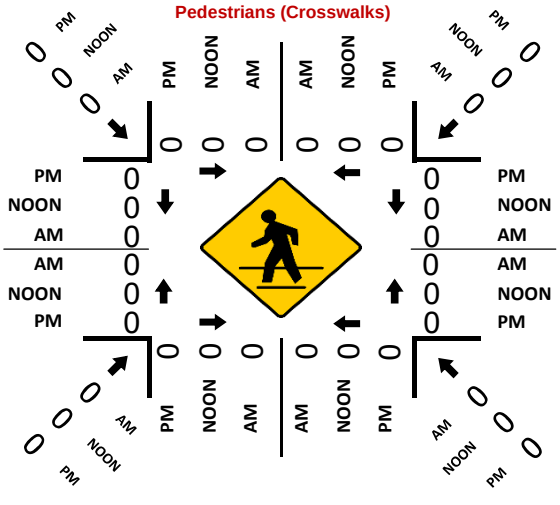
**Total Vehicles (NOON)**



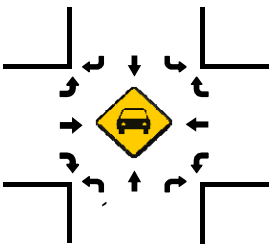
**Total Vehicles (NOON)**



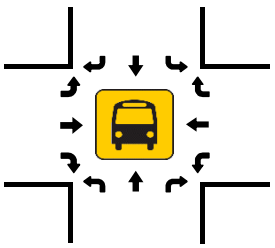
**Pedestrians (Crosswalks)**




**Total Vehicles (PM)**



**Total Vehicles (PM)**



National Data & Surveying Services

# Intersection Turning Movement Count

**Location:** I-405 NB Ramps & E 32nd St
**City:** Long Beach
**Control:** 1-Way Stop(NB)

**Project ID:** 18-05321-009
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | I-405 NB Ramps | | | | I-405 NB Ramps | | | | E 32nd St | | | | E 32nd St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 0.5 | 0 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 33 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 108 | 0 | 0 | 2 | 0 | 0 | 150 |
| 7:15 AM | 34 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 116 | 0 | 0 | 0 | 0 | 0 | 156 |
| 7:30 AM | 34 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 120 | 0 | 0 | 0 | 0 | 0 | 163 |
| 7:45 AM | 35 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 111 | 0 | 0 | 1 | 0 | 0 | 151 |
| 8:00 AM | 22 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 109 | 0 | 0 | 0 | 0 | 0 | 135 |
| 8:15 AM | 34 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 116 | 0 | 0 | 0 | 0 | 0 | 154 |
| 8:30 AM | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 95 | 1 | 0 | 0 | 0 | 0 | 129 |
| 8:45 AM | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 83 | 1 | 0 | 1 | 0 | 0 | 123 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 256 | 0 | 14 | 1 | 0 | 0 | 0 | 0 | 0 | 26 | 858 | 2 | 0 | 4 | 0 | 0 | 1161 |
| **APPROACH %'s :** | 94.46% | 0.00% | 5.17% | 0.37% | | | | | 0.00% | 2.93% | 96.84% | 0.23% | 0.00% | 100.00% | 0.00% | 0.00% | |
| **PEAK HR :** | 07:00 AM - 08:00 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 136 | 0 | 11 | 1 | 0 | 0 | 0 | 0 | 0 | 14 | 455 | 0 | 0 | 3 | 0 | 0 | 620 |
| **PEAK HR FACTOR :** | 0.971 | 0.000 | 0.550 | 0.250 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.875 | 0.948 | 0.000 | 0.000 | 0.375 | 0.000 | 0.000 | 0.951 |
| | 0.949 | | | | | | | | 0.946 | | | | 0.375 | | | | |

| **PM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.5 | 0 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 118 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 94 | 0 | 1 | 9 | 0 | 0 | 232 |
| 4:15 PM | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 66 | 0 | 3 | 13 | 0 | 0 | 172 |
| 4:30 PM | 64 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 76 | 1 | 4 | 7 | 0 | 0 | 164 |
| 4:45 PM | 88 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 71 | 1 | 3 | 8 | 0 | 0 | 174 |
| 5:00 PM | 67 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 95 | 1 | 3 | 20 | 0 | 0 | 189 |
| 5:15 PM | 89 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 90 | 3 | 1 | 7 | 0 | 0 | 197 |
| 5:30 PM | 83 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 73 | 0 | 1 | 2 | 0 | 0 | 159 |
| 5:45 PM | 95 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 58 | 1 | 0 | 1 | 0 | 0 | 159 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 682 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 623 | 7 | 16 | 67 | 0 | 0 | 1446 |
| **APPROACH %'s :** | 99.27% | 0.00% | 0.73% | 0.00% | | | | | 0.00% | 6.80% | 92.16% | 1.04% | 19.28% | 80.72% | 0.00% | 0.00% | |
| **PEAK HR :** | 04:00 PM - 05:00 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 348 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 307 | 2 | 11 | 37 | 0 | 0 | 742 |
| **PEAK HR FACTOR :** | 0.737 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.729 | 0.816 | 0.500 | 0.688 | 0.712 | 0.000 | 0.000 | 0.800 |
| | 0.735 | | | | | | | | 0.835 | | | | 0.750 | | | | |

Prepared by National Data & Surveying Services

# Orange Ave & I-405 SB Ramps

## Peak Hour Turning Movement Count

**ID:** 18-05321-010
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:15 AM - 08:15 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 04:15 PM - 05:15 PM | 04:00 PM - 06:00 PM |

### Orange Ave — SOUTHBOUND

| | L | T | R | U | Total | |
|---|---|---|---|---|---|---|
| AM | 274 | 496 | 2 | 0 | 694 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 141 | 685 | 0 | 0 | 902 | PM |

### I-405 SB Ramps — EASTBOUND

| AM | NOON | PM | |
|---|---|---|---|
| 442 | 0 | 268 | ⇦ |
| 0 | 0 | 0 | 0 |
| 113 | 0 | 120 | 1 |
| 2 | 0 | 0 | 0 |
| 265 | 0 | 146 | 1 |
| AM | NOON | PM | |

### I-405 SB Ramps — WESTBOUND

| PM | NOON | AM | |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 6 | ⇨ |
| PM | NOON | AM | |

### Orange Ave — NORTHBOUND

| | L | T | R | U | Total | |
|---|---|---|---|---|---|---|
| PM | 831 | 0 | 127 | 782 | 0 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 761 | 0 | 168 | 581 | 2 | AM |

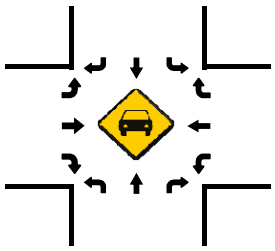
| | L | T | R | U |
|---|---|---|---|---|
| | 0.5 | 1.5 | 0 | 0 |
| | 0 | 1 | 2 | 0 |

### CONTROL

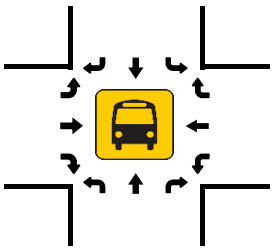
1-Way Stop(EB)

| | | | |
|---|---|---|---|
| TEV | 1903 | 0 | 2001 |
| | AM | NOON | PM |
| PHF | 0.89 | | 0.90 |

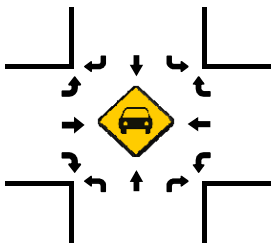
Total Vehicles (AM)



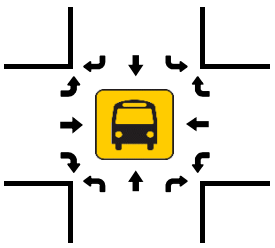
Total Vehicles (AM)



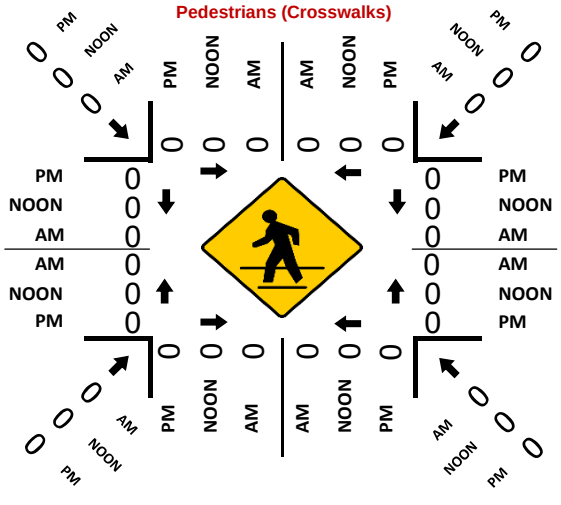
Total Vehicles (NOON)



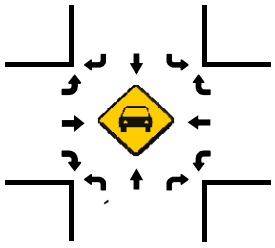
Total Vehicles (NOON)



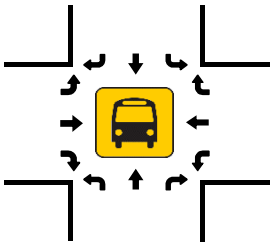
Pedestrians (Crosswalks)




Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

**Location:** Orange Ave & I-405 SB Ramps
**City:** Long Beach
**Control:** 1-Way Stop(EB)

**Project ID:** 18-05321-010
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | Orange Ave | | | | Orange Ave | | | | I-405 SB Ramps | | | | I-405 SB Ramps | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 1 | 2 | 0 | 0 | 0 | 1.5 | 0.5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 37 | 103 | 0 | 0 | 0 | 94 | 41 | 0 | 29 | 0 | 68 | 0 | 0 | 0 | 1 | 0 | 373 |
| 7:15 AM | 39 | 124 | 2 | 0 | 1 | 109 | 59 | 0 | 26 | 2 | 61 | 0 | 0 | 0 | 0 | 0 | 423 |
| 7:30 AM | 45 | 144 | 0 | 0 | 0 | 127 | 83 | 0 | 30 | 0 | 71 | 0 | 0 | 0 | 0 | 0 | 500 |
| 7:45 AM | 41 | 182 | 0 | 0 | 1 | 141 | 67 | 0 | 32 | 0 | 70 | 0 | 0 | 0 | 0 | 0 | 534 |
| 8:00 AM | 43 | 131 | 0 | 0 | 0 | 119 | 65 | 0 | 25 | 0 | 63 | 0 | 0 | 0 | 0 | 0 | 446 |
| 8:15 AM | 29 | 154 | 2 | 0 | 0 | 106 | 57 | 0 | 21 | 0 | 44 | 0 | 0 | 0 | 0 | 0 | 413 |
| 8:30 AM | 42 | 157 | 0 | 0 | 1 | 125 | 75 | 0 | 27 | 0 | 53 | 0 | 0 | 0 | 0 | 0 | 480 |
| 8:45 AM | 32 | 146 | 1 | 0 | 1 | 110 | 65 | 0 | 21 | 0 | 43 | 0 | 0 | 0 | 0 | 0 | 419 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 308 | 1141 | 5 | 0 | 4 | 931 | 512 | 0 | 211 | 2 | 473 | 0 | 0 | 0 | 1 | 0 | 3588 |
| **APPROACH %'s :** | 21.18% | 78.47% | 0.34% | 0.00% | 0.28% | 64.34% | 35.38% | 0.00% | 30.76% | 0.29% | 68.95% | 0.00% | 0.00% | 0.00% | 100.00% | 0.00% | |
| **PEAK HR :** | 07:15 AM - 08:15 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 168 | 581 | 2 | 0 | 2 | 496 | 274 | 0 | 113 | 2 | 265 | 0 | 0 | 0 | 0 | 0 | 1903 |
| **PEAK HR FACTOR :** | 0.933 | 0.798 | 0.250 | 0.000 | 0.500 | 0.879 | 0.825 | 0.000 | 0.883 | 0.250 | 0.933 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.891 |
| | 0.842 | | | | 0.919 | | | | 0.931 | | | | | | | | |

| **PM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 0 | 0 | 0 | 1.5 | 0.5 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 25 | 180 | 0 | 0 | 2 | 189 | 44 | 0 | 25 | 0 | 51 | 0 | 0 | 0 | 0 | 0 | 516 |
| 4:15 PM | 37 | 169 | 0 | 0 | 0 | 172 | 30 | 0 | 30 | 0 | 42 | 0 | 0 | 0 | 0 | 0 | 480 |
| 4:30 PM | 27 | 190 | 0 | 0 | 0 | 164 | 29 | 0 | 31 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 472 |
| 4:45 PM | 31 | 191 | 0 | 0 | 0 | 167 | 45 | 0 | 23 | 0 | 37 | 0 | 0 | 0 | 0 | 0 | 494 |
| 5:00 PM | 32 | 232 | 0 | 0 | 0 | 182 | 37 | 0 | 36 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 555 |
| 5:15 PM | 21 | 165 | 0 | 0 | 0 | 150 | 38 | 0 | 36 | 0 | 44 | 0 | 0 | 0 | 0 | 0 | 454 |
| 5:30 PM | 31 | 171 | 0 | 0 | 0 | 148 | 33 | 0 | 40 | 0 | 53 | 0 | 0 | 0 | 0 | 0 | 476 |
| 5:45 PM | 13 | 127 | 0 | 0 | 0 | 165 | 15 | 0 | 23 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 374 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 217 | 1425 | 0 | 0 | 2 | 1337 | 271 | 0 | 244 | 0 | 325 | 0 | 0 | 0 | 0 | 0 | 3821 |
| **APPROACH %'s :** | 13.22% | 86.78% | 0.00% | 0.00% | 0.12% | 83.04% | 16.83% | 0.00% | 42.88% | 0.00% | 57.12% | 0.00% | | | | | |
| **PEAK HR :** | 04:15 PM - 05:15 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 127 | 782 | 0 | 0 | 0 | 685 | 141 | 0 | 120 | 0 | 146 | 0 | 0 | 0 | 0 | 0 | 2001 |
| **PEAK HR FACTOR :** | 0.858 | 0.843 | 0.000 | 0.000 | 0.000 | 0.941 | 0.783 | 0.000 | 0.833 | 0.000 | 0.869 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.901 |
| | 0.861 | | | | 0.943 | | | | 0.924 | | | | | | | | |

Prepared by National Data & Surveying Services

# Atlantic Ave & E Spring St

## Peak Hour Turning Movement Count

**ID:** 18-05322-002
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:30 AM - 08:30 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 04:30 PM - 05:30 PM | 04:00 PM - 06:00 PM |

### SOUTHBOUND — Atlantic Ave

| | L | T | R | U | Total | |
|---|---|---|---|---|---|---|
| AM | 144 | 878 | 104 | 0 | 1043 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 187 | 730 | 98 | 0 | 1188 | PM |

### EASTBOUND — E Spring St

| AM | NOON | PM | |
|---|---|---|---|
| 787 | 0 | 821 | ⇦ |
| 0 | 0 | 0 | 0 |
| 163 | 0 | 192 | 1 |
| 458 | 0 | 833 | 2 |
| 54 | 0 | 32 | 1 |
| AM | NOON | PM | |

### WESTBOUND — E Spring St

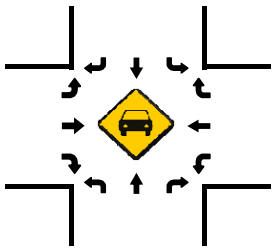
| PM | NOON | AM | |
|---|---|---|---|
| 133 | 0 | 116 | 1 |
| 590 | 0 | 611 | 2 |
| 124 | 0 | 210 | 1 |
| 0 | 0 | 1 | 0 |
| 1120 | 0 | 649 | ⇨ |
| PM | NOON | AM | |

### NORTHBOUND — Atlantic Ave

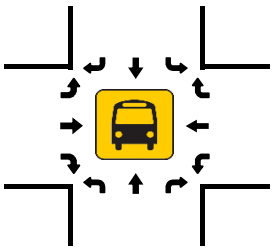
| | L | T | R | U | Total | |
|---|---|---|---|---|---|---|
| PM | 886 | 0 | 44 | 863 | 189 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 1142 | 0 | 32 | 764 | 86 | AM |

| CONTROL | | | |
|---|---|---|---|
| Signalized | | | |
| TEV | 3621 AM | 0 NOON | 4015 PM |
| PHF | 0.97 | | 0.96 |

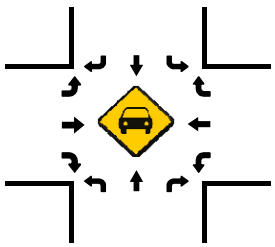
Total Vehicles (AM)



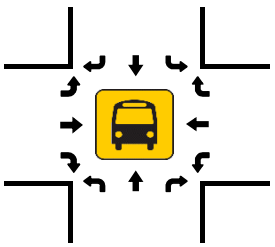
Total Vehicles (AM)



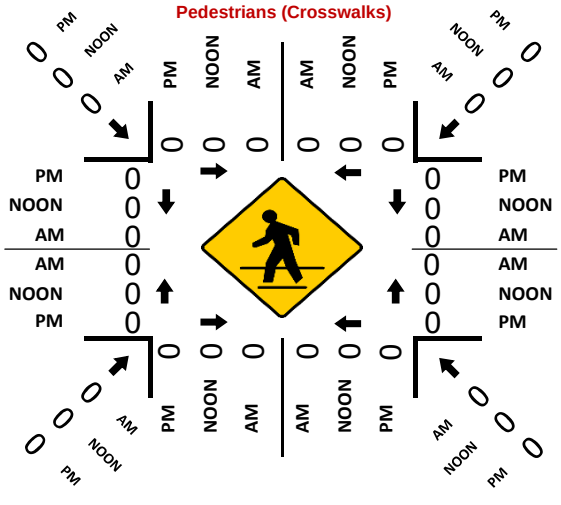
Total Vehicles (NOON)



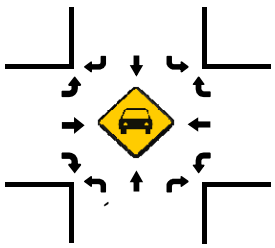
Total Vehicles (NOON)



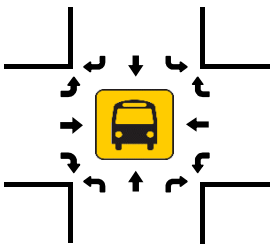
Pedestrians (Crosswalks)




Total Vehicles (PM)



Total Vehicles (PM)



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Atlantic Ave & E Spring St
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05322-002
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | Atlantic Ave | | | | Atlantic Ave | | | | E Spring St | | | | E Spring St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 1 | 2 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 2 | 1 | 0 | 1 | 2 | 1 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 5 | 154 | 9 | 0 | 14 | 144 | 25 | 0 | 19 | 87 | 7 | 0 | 33 | 99 | 13 | 0 | 609 |
| 7:15 AM | 8 | 166 | 18 | 0 | 31 | 212 | 29 | 0 | 33 | 117 | 11 | 0 | 35 | 122 | 25 | 0 | 807 |
| 7:30 AM | 7 | 226 | 16 | 0 | 29 | 217 | 35 | 0 | 52 | 131 | 17 | 0 | 40 | 137 | 31 | 0 | 938 |
| 7:45 AM | 9 | 199 | 27 | 0 | 27 | 219 | 39 | 0 | 40 | 134 | 15 | 0 | 50 | 129 | 26 | 0 | 914 |
| 8:00 AM | 6 | 161 | 19 | 0 | 25 | 236 | 38 | 0 | 43 | 96 | 10 | 0 | 64 | 193 | 33 | 0 | 924 |
| 8:15 AM | 10 | 178 | 24 | 0 | 23 | 206 | 32 | 0 | 28 | 97 | 12 | 0 | 56 | 152 | 26 | 1 | 845 |
| 8:30 AM | 9 | 146 | 9 | 0 | 20 | 184 | 31 | 0 | 27 | 111 | 17 | 0 | 50 | 113 | 27 | 0 | 744 |
| 8:45 AM | 10 | 152 | 20 | 0 | 19 | 223 | 32 | 0 | 31 | 99 | 18 | 0 | 48 | 148 | 28 | 0 | 828 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 64 | 1382 | 142 | 0 | 188 | 1641 | 261 | 0 | 273 | 872 | 107 | 0 | 376 | 1093 | 209 | 1 | 6609 |
| **APPROACH %'s :** | 4.03% | 87.03% | 8.94% | 0.00% | 9.00% | 78.52% | 12.49% | 0.00% | 21.81% | 69.65% | 8.55% | 0.00% | 22.39% | 65.10% | 12.45% | 0.06% | |
| **PEAK HR :** | 07:30 AM - 08:30 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 32 | 764 | 86 | 0 | 104 | 878 | 144 | 0 | 163 | 458 | 54 | 0 | 210 | 611 | 116 | 1 | 3621 |
| **PEAK HR FACTOR :** | 0.800 | 0.845 | 0.796 | 0.000 | 0.897 | 0.930 | 0.923 | 0.000 | 0.784 | 0.854 | 0.794 | 0.000 | 0.820 | 0.791 | 0.879 | 0.250 | 0.965 |
| | 0.886 | | | | 0.941 | | | | 0.844 | | | | 0.809 | | | | |

| **PM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 2 | 1 | 0 | 1 | 2 | 1 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 13 | 215 | 39 | 0 | 28 | 179 | 38 | 0 | 44 | 163 | 9 | 0 | 31 | 184 | 27 | 0 | 970 |
| 4:15 PM | 10 | 174 | 34 | 0 | 35 | 154 | 34 | 0 | 32 | 198 | 9 | 0 | 37 | 112 | 33 | 1 | 863 |
| 4:30 PM | 14 | 219 | 49 | 0 | 32 | 189 | 39 | 0 | 48 | 187 | 5 | 0 | 20 | 137 | 29 | 0 | 968 |
| 4:45 PM | 7 | 214 | 44 | 0 | 20 | 170 | 47 | 0 | 55 | 191 | 10 | 0 | 43 | 154 | 27 | 0 | 982 |
| 5:00 PM | 14 | 208 | 58 | 0 | 22 | 190 | 48 | 0 | 48 | 229 | 6 | 0 | 25 | 145 | 27 | 0 | 1020 |
| 5:15 PM | 9 | 222 | 38 | 0 | 24 | 181 | 53 | 0 | 41 | 226 | 11 | 0 | 36 | 154 | 50 | 0 | 1045 |
| 5:30 PM | 10 | 183 | 28 | 0 | 27 | 179 | 38 | 0 | 42 | 184 | 5 | 0 | 35 | 145 | 33 | 0 | 909 |
| 5:45 PM | 7 | 170 | 30 | 0 | 34 | 167 | 43 | 0 | 37 | 157 | 8 | 0 | 26 | 132 | 33 | 0 | 844 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 84 | 1605 | 320 | 0 | 222 | 1409 | 340 | 0 | 347 | 1535 | 63 | 0 | 253 | 1163 | 259 | 1 | 7601 |
| **APPROACH %'s :** | 4.18% | 79.89% | 15.93% | 0.00% | 11.26% | 71.49% | 17.25% | 0.00% | 17.84% | 78.92% | 3.24% | 0.00% | 15.10% | 69.39% | 15.45% | 0.06% | |
| **PEAK HR :** | 04:30 PM - 05:30 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 44 | 863 | 189 | 0 | 98 | 730 | 187 | 0 | 192 | 833 | 32 | 0 | 124 | 590 | 133 | 0 | 4015 |
| **PEAK HR FACTOR :** | 0.786 | 0.972 | 0.815 | 0.000 | 0.766 | 0.961 | 0.882 | 0.000 | 0.873 | 0.909 | 0.727 | 0.000 | 0.721 | 0.958 | 0.665 | 0.000 | 0.961 |
| | 0.972 | | | | 0.976 | | | | 0.934 | | | | 0.882 | | | | |

Prepared by National Data & Surveying Services

# Home Depot Dwy & E Spring St

## Peak Hour Turning Movement Count

**ID:** 18-05322-003
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:30 AM - 08:30 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 04:45 PM - 05:45 PM | 04:00 PM - 06:00 PM |

### SOUTHBOUND — Home Depot Dwy

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 48 | 0 | 28 | 0 | 97 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 150 | 0 | 60 | 0 | 187 | PM |

### EASTBOUND — E Spring St

| AM | NOON | PM | | |
|---|---|---|---|---|
| 934 | 0 | 893 | ⇦ | |
| 1 | 0 | 0 | ↰ | 0 |
| 54 | 0 | 112 | ↑ | 1 |
| 591 | 0 | 982 | → | 2 |
| 0 | 0 | 0 | ↱ | 0 |
| AM | NOON | PM | | |

### WESTBOUND — E Spring St

| PM | NOON | AM | | |
|---|---|---|---|---|
| 75 | 0 | 43 | ↰ | 0 |
| 743 | 0 | 885 | ← | 2 |
| 0 | 0 | 0 | ↶ | 0 |
| 0 | 0 | 0 | ↩ | 0 |
| 1042 | 0 | 619 | ⇨ | |
| PM | NOON | AM | | |

### NORTHBOUND — Home Depot Dwy

| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 0 | 0 | 0 | 0 | 0 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 0 | 0 | 0 | 0 | 0 | AM |

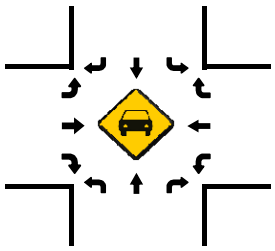
| | | | | |
|---|---|---|---|---|
| | 1 | 0 | 1 | 0 |
| | 0 | 0 | 0 | 0 |

### CONTROL

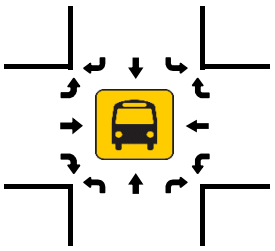
Signalized

| | | | |
|---|---|---|---|
| TEV | 1650 | 0 | 2122 |
| | AM | NOON | PM |
| PHF | 0.92 | | 0.96 |

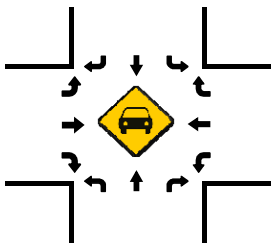
Total Vehicles (AM)



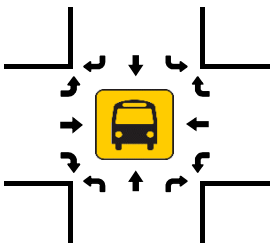
Total Vehicles (AM)



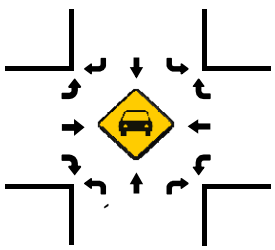
Total Vehicles (NOON)



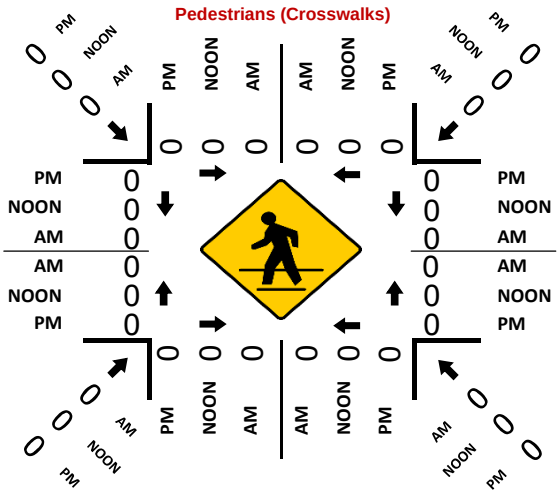
Total Vehicles (NOON)



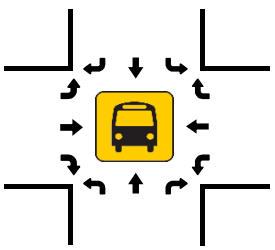
Total Vehicles (PM)



Pedestrians (Crosswalks)




Total Vehicles (PM)



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Home Depot Dwy & E Spring St
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05322-003
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | Home Depot Dwy | | | | Home Depot Dwy | | | | E Spring St | | | | E Spring St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 0 | 0 | 0 | 0 | 2 | 0 | 8 | 0 | 5 | 103 | 0 | 1 | 0 | 144 | 4 | 0 | 267 |
| 7:15 AM | 0 | 0 | 0 | 0 | 2 | 0 | 6 | 0 | 7 | 164 | 0 | 0 | 0 | 160 | 11 | 0 | 350 |
| 7:30 AM | 0 | 0 | 0 | 0 | 6 | 0 | 9 | 0 | 8 | 168 | 0 | 0 | 0 | 207 | 6 | 0 | 404 |
| 7:45 AM | 0 | 0 | 0 | 0 | 5 | 0 | 9 | 0 | 14 | 171 | 0 | 1 | 0 | 210 | 12 | 0 | 422 |
| 8:00 AM | 0 | 0 | 0 | 0 | 4 | 0 | 19 | 0 | 17 | 129 | 0 | 0 | 0 | 265 | 15 | 0 | 449 |
| 8:15 AM | 0 | 0 | 0 | 0 | 13 | 0 | 11 | 0 | 15 | 123 | 0 | 0 | 0 | 203 | 10 | 0 | 375 |
| 8:30 AM | 0 | 0 | 0 | 0 | 7 | 0 | 14 | 0 | 7 | 134 | 0 | 0 | 0 | 214 | 11 | 0 | 387 |
| 8:45 AM | 0 | 0 | 0 | 0 | 6 | 0 | 15 | 0 | 15 | 123 | 0 | 1 | 0 | 181 | 11 | 0 | 352 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 0 | 0 | 0 | 0 | 45 | 0 | 91 | 0 | 88 | 1115 | 0 | 3 | 0 | 1584 | 80 | 0 | 3006 |
| **APPROACH %'s :** | | | | | 33.09% | 0.00% | 66.91% | 0.00% | 7.30% | 92.45% | 0.00% | 0.25% | 0.00% | 95.19% | 4.81% | 0.00% | |
| **PEAK HR :** | 07:30 AM - 08:30 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 0 | 0 | 0 | 0 | 28 | 0 | 48 | 0 | 54 | 591 | 0 | 1 | 0 | 885 | 43 | 0 | 1650 |
| **PEAK HR FACTOR :** | 0.000 | 0.000 | 0.000 | 0.000 | 0.538 | 0.000 | 0.632 | 0.000 | 0.794 | 0.864 | 0.000 | 0.250 | 0.000 | 0.835 | 0.717 | 0.000 | 0.919 |
| | | | | | 0.792 | | | | 0.868 | | | | 0.829 | | | | |

| PM | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 0 | 0 | 0 | 0 | 14 | 0 | 33 | 0 | 17 | 211 | 0 | 0 | 0 | 202 | 15 | 0 | 492 |
| 4:15 PM | 0 | 0 | 0 | 0 | 14 | 0 | 31 | 0 | 27 | 244 | 0 | 0 | 0 | 146 | 18 | 0 | 480 |
| 4:30 PM | 0 | 0 | 0 | 0 | 15 | 0 | 27 | 0 | 23 | 245 | 0 | 0 | 0 | 154 | 11 | 0 | 475 |
| 4:45 PM | 0 | 0 | 0 | 0 | 16 | 0 | 46 | 0 | 27 | 233 | 0 | 0 | 0 | 184 | 25 | 0 | 531 |
| 5:00 PM | 0 | 0 | 0 | 0 | 10 | 0 | 35 | 0 | 38 | 274 | 0 | 0 | 0 | 169 | 20 | 0 | 546 |
| 5:15 PM | 0 | 0 | 0 | 0 | 21 | 0 | 35 | 0 | 21 | 256 | 0 | 0 | 0 | 204 | 17 | 0 | 554 |
| 5:30 PM | 0 | 0 | 0 | 0 | 13 | 0 | 34 | 0 | 26 | 219 | 0 | 0 | 0 | 186 | 13 | 0 | 491 |
| 5:45 PM | 0 | 0 | 0 | 0 | 16 | 0 | 17 | 0 | 21 | 195 | 0 | 1 | 0 | 159 | 20 | 0 | 429 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 0 | 0 | 0 | 0 | 119 | 0 | 258 | 0 | 200 | 1877 | 0 | 1 | 0 | 1404 | 139 | 0 | 3998 |
| **APPROACH %'s :** | | | | | 31.56% | 0.00% | 68.44% | 0.00% | 9.62% | 90.33% | 0.00% | 0.05% | 0.00% | 90.99% | 9.01% | 0.00% | |
| **PEAK HR :** | 04:45 PM - 05:45 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 0 | 0 | 0 | 0 | 60 | 0 | 150 | 0 | 112 | 982 | 0 | 0 | 0 | 743 | 75 | 0 | 2122 |
| **PEAK HR FACTOR :** | 0.000 | 0.000 | 0.000 | 0.000 | 0.714 | 0.000 | 0.815 | 0.000 | 0.737 | 0.896 | 0.000 | 0.000 | 0.000 | 0.911 | 0.750 | 0.000 | 0.958 |
| | | | | | 0.847 | | | | 0.877 | | | | 0.925 | | | | |

Prepared by National Data & Surveying Services

# California Ave & E Spring St

## Peak Hour Turning Movement Count

**ID:** 18-05321-011
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:30 AM - 08:30 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 04:45 PM - 05:45 PM | 04:00 PM - 06:00 PM |

### SOUTHBOUND — California Ave

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 72 | 136 | 102 | 0 | 311 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 74 | 156 | 120 | 0 | 498 | PM |

### EASTBOUND — E Spring St

| AM | NOON | PM | | |
|---|---|---|---|---|
| 938 | 0 | 792 | ⇦ | |
| 0 | 0 | 0 | ↶ | 0 |
| 38 | 0 | 97 | ↱ | 1 |
| 509 | 0 | 902 | → | 2 |
| 47 | 0 | 41 | ↴ | 1 |
| AM | NOON | PM | | |

### WESTBOUND — E Spring St

| PM | NOON | AM | | |
|---|---|---|---|---|
| 178 | 0 | 98 | ↰ | 1 |
| 665 | 0 | 797 | ← | 2 |
| 95 | 0 | 98 | ↰ | 1 |
| 0 | 0 | 0 | ↷ | 0 |
| 1116 | 0 | 681 | ⇨ | |
| PM | NOON | AM | | |

### NORTHBOUND — California Ave

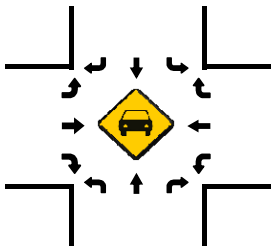
| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 292 | 0 | 53 | 223 | 94 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 281 | 0 | 69 | 175 | 70 | AM |

| | 1 | 1 | 1 | 0 |
|---|---|---|---|---|
| | | | | ⇩ |

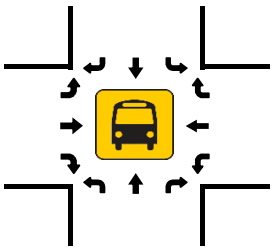
| | 0 | 1 | 1 | 0 |
|---|---|---|---|---|
| | ↶ | ↰ | ↑ | ↱ |

| CONTROL | | | |
|---|---|---|---|
| Signalized | | | |
| TEV | 2211 AM | 0 NOON | 2698 PM |
| PHF | 0.91 | | 0.90 |

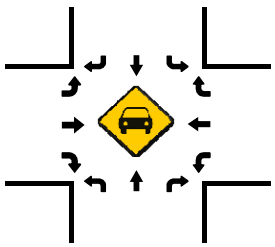
Total Vehicles (AM)



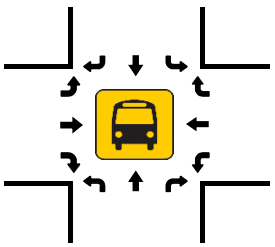
Total Vehicles (AM)



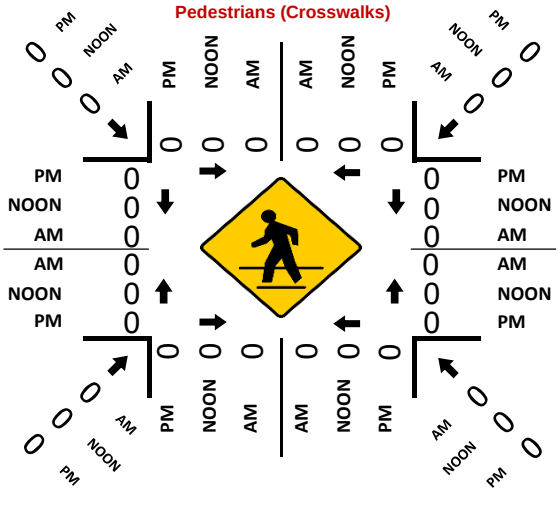
Total Vehicles (NOON)



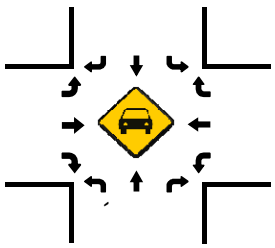
Total Vehicles (NOON)



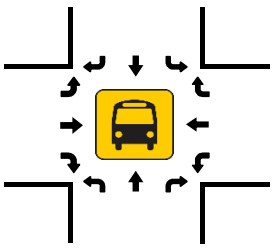
Pedestrians (Crosswalks)




Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

**Location:** California Ave & E Spring St
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05321-011
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | California Ave | | | | California Ave | | | | E Spring St | | | | E Spring St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 0 | 1 | 2 | 1 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 7 | 12 | 26 | 0 | 20 | 12 | 7 | 0 | 2 | 90 | 7 | 0 | 32 | 120 | 20 | 0 | 355 |
| 7:15 AM | 16 | 20 | 26 | 0 | 15 | 38 | 7 | 0 | 7 | 133 | 10 | 0 | 23 | 152 | 28 | 0 | 475 |
| 7:30 AM | 15 | 35 | 16 | 0 | 23 | 46 | 14 | 0 | 8 | 155 | 11 | 0 | 28 | 181 | 20 | 0 | 552 |
| 7:45 AM | 21 | 59 | 27 | 0 | 32 | 38 | 18 | 0 | 9 | 149 | 10 | 0 | 29 | 193 | 23 | 0 | 608 |
| 8:00 AM | 14 | 41 | 13 | 0 | 23 | 24 | 19 | 0 | 10 | 97 | 12 | 0 | 24 | 246 | 31 | 0 | 554 |
| 8:15 AM | 19 | 40 | 14 | 0 | 24 | 28 | 21 | 0 | 11 | 108 | 14 | 0 | 17 | 177 | 24 | 0 | 497 |
| 8:30 AM | 15 | 29 | 19 | 0 | 22 | 28 | 18 | 0 | 11 | 108 | 10 | 0 | 26 | 169 | 28 | 0 | 483 |
| 8:45 AM | 8 | 39 | 19 | 0 | 24 | 28 | 19 | 0 | 15 | 101 | 7 | 0 | 17 | 164 | 26 | 0 | 467 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 115 | 275 | 160 | 0 | 183 | 242 | 123 | 0 | 73 | 941 | 81 | 0 | 196 | 1402 | 200 | 0 | 3991 |
| **APPROACH %'s :** | 20.91% | 50.00% | 29.09% | 0.00% | 33.39% | 44.16% | 22.45% | 0.00% | 6.67% | 85.94% | 7.40% | 0.00% | 10.90% | 77.98% | 11.12% | 0.00% | |
| **PEAK HR :** | 07:30 AM - 08:30 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 69 | 175 | 70 | 0 | 102 | 136 | 72 | 0 | 38 | 509 | 47 | 0 | 98 | 797 | 98 | 0 | 2211 |
| **PEAK HR FACTOR :** | 0.821 | 0.742 | 0.648 | 0.000 | 0.797 | 0.739 | 0.857 | 0.000 | 0.864 | 0.821 | 0.839 | 0.000 | 0.845 | 0.810 | 0.790 | 0.000 | 0.909 |
| | 0.734 | | | | 0.881 | | | | 0.853 | | | | 0.825 | | | | |

| PM | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 1 | 0 | 1 | 2 | 1 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 16 | 50 | 18 | 0 | 36 | 42 | 19 | 0 | 20 | 193 | 12 | 1 | 44 | 186 | 36 | 0 | 673 |
| 4:15 PM | 11 | 36 | 28 | 0 | 31 | 45 | 14 | 0 | 23 | 218 | 9 | 1 | 26 | 132 | 37 | 0 | 611 |
| 4:30 PM | 13 | 52 | 22 | 0 | 31 | 33 | 9 | 0 | 19 | 229 | 11 | 0 | 17 | 140 | 32 | 0 | 608 |
| 4:45 PM | 8 | 50 | 17 | 0 | 22 | 33 | 20 | 0 | 19 | 214 | 12 | 0 | 31 | 169 | 53 | 0 | 648 |
| 5:00 PM | 15 | 48 | 29 | 0 | 37 | 34 | 14 | 0 | 40 | 239 | 9 | 0 | 23 | 161 | 37 | 0 | 686 |
| 5:15 PM | 17 | 68 | 30 | 0 | 29 | 41 | 18 | 0 | 22 | 253 | 9 | 0 | 29 | 186 | 46 | 0 | 748 |
| 5:30 PM | 13 | 57 | 18 | 0 | 32 | 48 | 22 | 0 | 16 | 196 | 11 | 0 | 12 | 149 | 42 | 0 | 616 |
| 5:45 PM | 8 | 43 | 22 | 0 | 30 | 36 | 14 | 0 | 13 | 194 | 12 | 0 | 24 | 154 | 35 | 0 | 585 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 101 | 404 | 184 | 0 | 248 | 312 | 130 | 0 | 172 | 1736 | 85 | 2 | 206 | 1277 | 318 | 0 | 5175 |
| **APPROACH %'s :** | 14.66% | 58.64% | 26.71% | 0.00% | 35.94% | 45.22% | 18.84% | 0.00% | 8.62% | 87.02% | 4.26% | 0.10% | 11.44% | 70.91% | 17.66% | 0.00% | |
| **PEAK HR :** | 04:45 PM - 05:45 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 53 | 223 | 94 | 0 | 120 | 156 | 74 | 0 | 97 | 902 | 41 | 0 | 95 | 665 | 178 | 0 | 2698 |
| **PEAK HR FACTOR :** | 0.779 | 0.820 | 0.783 | 0.000 | 0.811 | 0.813 | 0.841 | 0.000 | 0.606 | 0.891 | 0.854 | 0.000 | 0.766 | 0.894 | 0.840 | 0.000 | 0.902 |
| | 0.804 | | | | 0.858 | | | | 0.903 | | | | 0.898 | | | | |

Prepared by National Data & Surveying Services

# Orange Ave & E Spring St

## Peak Hour Turning Movement Count

**ID:** 18-05321-012
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:15 AM - 08:15 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 04:30 PM - 05:30 PM | 04:00 PM - 06:00 PM |

### Orange Ave — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 133 | 544 | 92 | 1 | 766 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 165 | 541 | 117 | 0 | 872 | PM |

### E Spring St — EASTBOUND

| AM | NOON | PM | | |
|---|---|---|---|---|
| 994 | 0 | 932 | ⇦ | |
| 0 | 0 | 0 | ↶ | 0 |
| 101 | 0 | 120 | ↱ | 1 |
| 547 | 0 | 964 | → | 2 |
| 66 | 0 | 69 | ↴ | 0 |
| AM | NOON | PM | | |

### CONTROL

Signalized

| | | | |
|---|---|---|---|
| TEV | 3151 AM | 0 NOON | 3613 PM |
| PHF | 0.93 | | 0.94 |

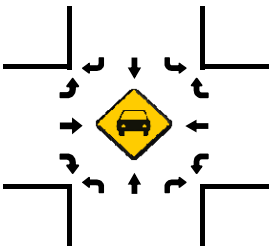
### E Spring St — WESTBOUND

| PM | NOON | AM | | |
|---|---|---|---|---|
| 180 | 0 | 125 | ↰ | 0 |
| 715 | 0 | 815 | ← | 2 |
| 63 | 0 | 82 | ↰ | 1 |
| 1 | 0 | 0 | ↰ | 0 |
| 1136 | 0 | 699 | ⇨ | |
| PM | NOON | AM | | |

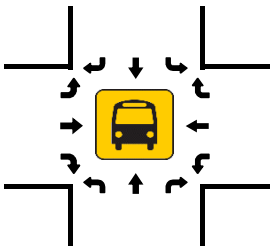
### Orange Ave — NORTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 673 | 0 | 52 | 572 | 54 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 692 | 0 | 46 | 539 | 60 | AM |

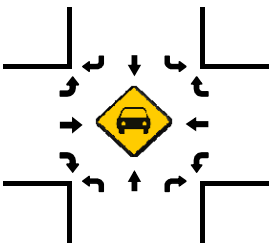
Total Vehicles (AM)



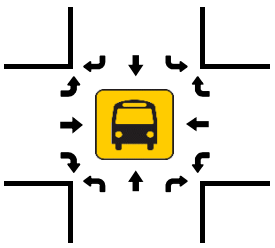
Total Vehicles (AM)



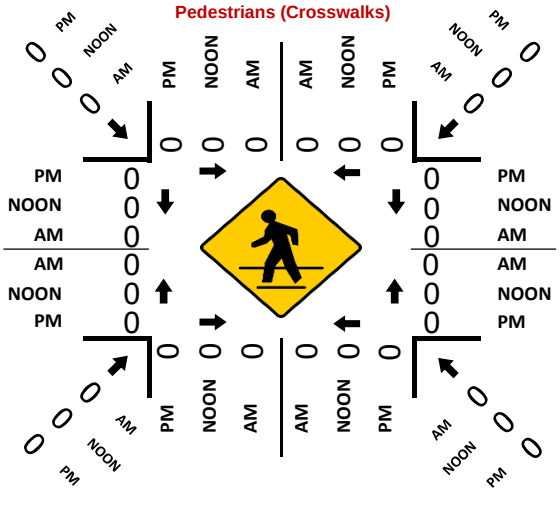
Total Vehicles (NOON)



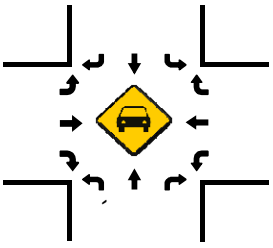
Total Vehicles (NOON)



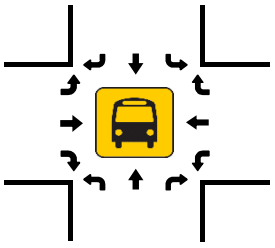
Pedestrians (Crosswalks)




Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

**Location:** Orange Ave & E Spring St
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05321-012
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | Orange Ave | | | | Orange Ave | | | | E Spring St | | | | E Spring St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 0 | 1 | 2 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 9 | 104 | 12 | 0 | 28 | 108 | 33 | 1 | 22 | 102 | 11 | 0 | 12 | 135 | 29 | 0 | 606 |
| 7:15 AM | 11 | 129 | 12 | 0 | 16 | 121 | 25 | 0 | 25 | 143 | 17 | 0 | 23 | 174 | 25 | 0 | 721 |
| 7:30 AM | 6 | 135 | 18 | 0 | 22 | 148 | 33 | 1 | 26 | 151 | 12 | 0 | 19 | 191 | 37 | 0 | 799 |
| 7:45 AM | 11 | 152 | 16 | 0 | 28 | 152 | 34 | 0 | 26 | 151 | 23 | 0 | 20 | 204 | 31 | 0 | 848 |
| 8:00 AM | 18 | 123 | 14 | 0 | 26 | 123 | 41 | 0 | 24 | 102 | 14 | 0 | 20 | 246 | 32 | 0 | 783 |
| 8:15 AM | 11 | 143 | 11 | 0 | 28 | 113 | 20 | 0 | 13 | 118 | 19 | 0 | 17 | 188 | 39 | 0 | 720 |
| 8:30 AM | 15 | 133 | 12 | 0 | 25 | 98 | 33 | 1 | 15 | 116 | 14 | 0 | 10 | 173 | 31 | 0 | 676 |
| 8:45 AM | 11 | 128 | 5 | 0 | 29 | 113 | 22 | 0 | 19 | 112 | 14 | 0 | 11 | 161 | 27 | 1 | 653 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 92 | 1047 | 100 | 0 | 202 | 976 | 241 | 3 | 170 | 995 | 124 | 0 | 132 | 1472 | 251 | 1 | 5806 |
| **APPROACH %'s :** | 7.43% | 84.50% | 8.07% | 0.00% | 14.21% | 68.64% | 16.95% | 0.21% | 13.19% | 77.19% | 9.62% | 0.00% | 7.11% | 79.31% | 13.52% | 0.05% | |
| **PEAK HR :** | 07:15 AM - 08:15 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 46 | 539 | 60 | 0 | 92 | 544 | 133 | 1 | 101 | 547 | 66 | 0 | 82 | 815 | 125 | 0 | 3151 |
| **PEAK HR FACTOR :** | 0.639 | 0.887 | 0.833 | 0.000 | 0.821 | 0.895 | 0.811 | 0.250 | 0.971 | 0.906 | 0.717 | 0.000 | 0.891 | 0.828 | 0.845 | 0.000 | 0.929 |
| | 0.901 | | | | 0.900 | | | | 0.893 | | | | 0.857 | | | | |

| NS/EW Streets: | Orange Ave | | | | Orange Ave | | | | E Spring St | | | | E Spring St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 2 | 0 | 0 | 1 | 2 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 13 | 158 | 11 | 0 | 35 | 159 | 67 | 0 | 24 | 206 | 24 | 0 | 13 | 185 | 34 | 0 | 929 |
| 4:15 PM | 10 | 135 | 16 | 0 | 25 | 134 | 32 | 1 | 32 | 226 | 23 | 0 | 12 | 143 | 31 | 0 | 820 |
| 4:30 PM | 11 | 133 | 12 | 0 | 25 | 124 | 39 | 0 | 35 | 243 | 12 | 0 | 10 | 161 | 40 | 0 | 845 |
| 4:45 PM | 14 | 147 | 16 | 0 | 35 | 141 | 44 | 0 | 22 | 204 | 18 | 0 | 15 | 181 | 27 | 0 | 864 |
| 5:00 PM | 12 | 161 | 14 | 0 | 25 | 139 | 39 | 0 | 32 | 245 | 21 | 0 | 19 | 181 | 58 | 1 | 947 |
| 5:15 PM | 15 | 131 | 12 | 0 | 32 | 137 | 43 | 0 | 31 | 272 | 18 | 0 | 19 | 192 | 55 | 0 | 957 |
| 5:30 PM | 13 | 131 | 15 | 0 | 29 | 140 | 22 | 0 | 21 | 219 | 15 | 0 | 10 | 162 | 37 | 0 | 814 |
| 5:45 PM | 19 | 126 | 16 | 0 | 22 | 149 | 40 | 0 | 20 | 197 | 23 | 0 | 13 | 170 | 32 | 0 | 827 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 107 | 1122 | 112 | 0 | 228 | 1123 | 326 | 1 | 217 | 1812 | 154 | 0 | 111 | 1375 | 314 | 1 | 7003 |
| **APPROACH %'s :** | 7.98% | 83.67% | 8.35% | 0.00% | 13.59% | 66.92% | 19.43% | 0.06% | 9.94% | 83.01% | 7.05% | 0.00% | 6.16% | 76.35% | 17.43% | 0.06% | |
| **PEAK HR :** | 04:30 PM - 05:30 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 52 | 572 | 54 | 0 | 117 | 541 | 165 | 0 | 120 | 964 | 69 | 0 | 63 | 715 | 180 | 1 | 3613 |
| **PEAK HR FACTOR :** | 0.867 | 0.888 | 0.844 | 0.000 | 0.836 | 0.959 | 0.938 | 0.000 | 0.857 | 0.886 | 0.821 | 0.000 | 0.829 | 0.931 | 0.776 | 0.250 | 0.944 |
| | 0.906 | | | | 0.935 | | | | 0.898 | | | | 0.901 | | | | |

Prepared by National Data & Surveying Services

# Walnut Ave & E Spring St

## Peak Hour Turning Movement Count

**ID:** 18-05321-013
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:30 AM - 08:30 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 04:30 PM - 05:30 PM | 04:00 PM - 06:00 PM |

**Walnut Ave**

**SOUTHBOUND**

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 51 | 129 | 35 | 0 | 209 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 34 | 110 | 36 | 0 | 387 | PM |

**EASTBOUND** (E Spring St)

| AM | NOON | PM | | |
|---|---|---|---|---|
| 1059 | 0 | 935 | ⇦ | |
| 0 | 0 | 0 | ↶ | 0 |
| 29 | 0 | 68 | ↱ | 1 |
| 572 | 0 | 984 | → | 2 |
| 87 | 0 | 97 | ↴ | 0 |
| AM | NOON | PM | | |

**WESTBOUND** (E Spring St)

| PM | NOON | AM | | |
|---|---|---|---|---|
| 80 | 0 | 41 | ↰ | 0 |
| 784 | 0 | 927 | ← | 2 |
| 47 | 0 | 66 | ↰ | 1 |
| 1 | 0 | 1 | ↶ | 0 |
| 1145 | 0 | 664 | ⇨ | |
| PM | NOON | AM | | |

**CONTROL**: Signalized

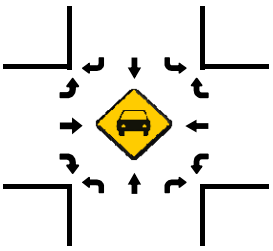
| | | | |
|---|---|---|---|
| TEV | 2214 AM | 0 NOON | 2721 PM |
| PHF | 0.91 | | 0.93 |

| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 254 | 0 | 117 | 239 | 124 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 282 | 0 | 81 | 139 | 56 | AM |

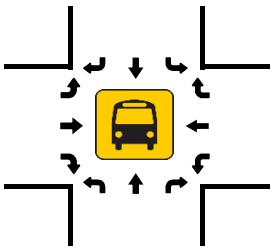
**NORTHBOUND**

**Walnut Ave**

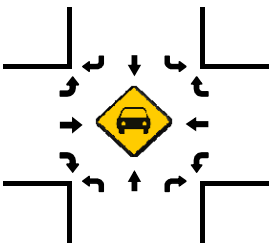
Total Vehicles (AM)



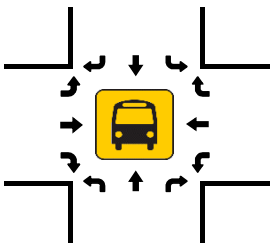
Total Vehicles (AM)



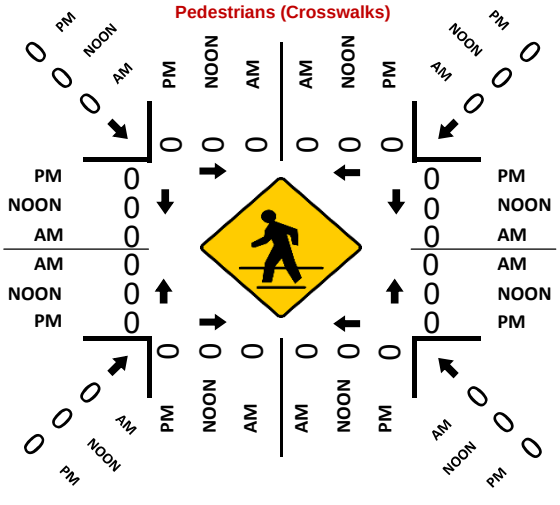
Total Vehicles (NOON)



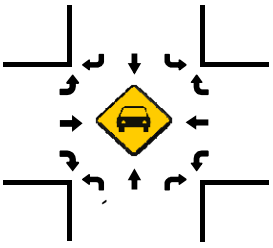
Total Vehicles (NOON)



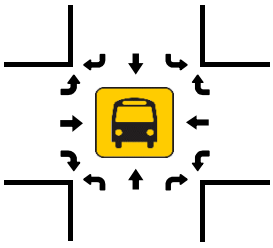
Pedestrians (Crosswalks)




Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

**Location:** Walnut Ave & E Spring St
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05321-013
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | Walnut Ave | | | | Walnut Ave | | | | E Spring St | | | | E Spring St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 2 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 15 | 31 | 12 | 0 | 6 | 13 | 17 | 0 | 9 | 120 | 16 | 0 | 13 | 145 | 6 | 0 | 403 |
| 7:15 AM | 16 | 16 | 18 | 0 | 12 | 29 | 11 | 0 | 6 | 135 | 17 | 1 | 11 | 196 | 6 | 0 | 474 |
| 7:30 AM | 17 | 29 | 15 | 0 | 8 | 44 | 17 | 0 | 6 | 159 | 24 | 0 | 18 | 219 | 12 | 1 | 569 |
| 7:45 AM | 24 | 38 | 13 | 0 | 10 | 49 | 12 | 0 | 11 | 167 | 22 | 0 | 17 | 239 | 9 | 0 | 611 |
| 8:00 AM | 18 | 45 | 13 | 0 | 11 | 22 | 11 | 0 | 5 | 118 | 20 | 0 | 16 | 257 | 10 | 0 | 546 |
| 8:15 AM | 22 | 27 | 15 | 0 | 6 | 14 | 11 | 0 | 7 | 128 | 21 | 0 | 15 | 212 | 10 | 0 | 488 |
| 8:30 AM | 20 | 25 | 10 | 0 | 8 | 16 | 7 | 0 | 7 | 132 | 18 | 0 | 16 | 190 | 13 | 0 | 462 |
| 8:45 AM | 18 | 27 | 17 | 0 | 3 | 20 | 7 | 0 | 12 | 125 | 9 | 0 | 15 | 178 | 10 | 1 | 442 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 150 | 238 | 113 | 0 | 64 | 207 | 93 | 0 | 63 | 1084 | 147 | 1 | 121 | 1636 | 76 | 2 | 3995 |
| **APPROACH %'s :** | 29.94% | 47.50% | 22.55% | 0.00% | 17.58% | 56.87% | 25.55% | 0.00% | 4.86% | 83.71% | 11.35% | 0.08% | 6.59% | 89.16% | 4.14% | 0.11% | |
| **PEAK HR :** | 07:30 AM - 08:30 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 81 | 139 | 56 | 0 | 35 | 129 | 51 | 0 | 29 | 572 | 87 | 0 | 66 | 927 | 41 | 1 | 2214 |
| **PEAK HR FACTOR :** | 0.844 | 0.772 | 0.933 | 0.000 | 0.795 | 0.658 | 0.750 | 0.000 | 0.659 | 0.856 | 0.906 | 0.000 | 0.917 | 0.902 | 0.854 | 0.250 | 0.906 |
| | 0.908 | | | | 0.757 | | | | 0.860 | | | | 0.914 | | | | |

| **PM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 2 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 28 | 45 | 25 | 0 | 2 | 30 | 10 | 0 | 16 | 213 | 26 | 0 | 21 | 199 | 17 | 0 | 632 |
| 4:15 PM | 25 | 54 | 20 | 0 | 5 | 30 | 6 | 0 | 18 | 224 | 14 | 0 | 12 | 157 | 17 | 0 | 582 |
| 4:30 PM | 28 | 56 | 34 | 0 | 13 | 25 | 11 | 0 | 12 | 253 | 22 | 0 | 8 | 171 | 16 | 0 | 649 |
| 4:45 PM | 25 | 60 | 30 | 0 | 9 | 23 | 3 | 0 | 15 | 218 | 31 | 0 | 15 | 194 | 14 | 0 | 637 |
| 5:00 PM | 34 | 61 | 30 | 0 | 9 | 27 | 16 | 0 | 13 | 250 | 22 | 0 | 10 | 199 | 29 | 1 | 701 |
| 5:15 PM | 30 | 62 | 30 | 0 | 5 | 35 | 4 | 0 | 28 | 263 | 22 | 0 | 14 | 220 | 21 | 0 | 734 |
| 5:30 PM | 22 | 54 | 24 | 0 | 9 | 28 | 5 | 0 | 17 | 228 | 28 | 0 | 12 | 181 | 23 | 1 | 632 |
| 5:45 PM | 25 | 47 | 21 | 0 | 4 | 26 | 11 | 0 | 11 | 210 | 18 | 0 | 10 | 179 | 13 | 1 | 576 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 217 | 439 | 214 | 0 | 56 | 224 | 66 | 0 | 130 | 1859 | 183 | 0 | 102 | 1500 | 150 | 3 | 5143 |
| **APPROACH %'s :** | 24.94% | 50.46% | 24.60% | 0.00% | 16.18% | 64.74% | 19.08% | 0.00% | 5.99% | 85.59% | 8.43% | 0.00% | 5.81% | 85.47% | 8.55% | 0.17% | |
| **PEAK HR :** | 04:30 PM - 05:30 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 117 | 239 | 124 | 0 | 36 | 110 | 34 | 0 | 68 | 984 | 97 | 0 | 47 | 784 | 80 | 1 | 2721 |
| **PEAK HR FACTOR :** | 0.860 | 0.964 | 0.912 | 0.000 | 0.692 | 0.786 | 0.531 | 0.000 | 0.607 | 0.935 | 0.782 | 0.000 | 0.783 | 0.891 | 0.690 | 0.250 | 0.927 |
| | 0.960 | | | | 0.865 | | | | 0.918 | | | | 0.894 | | | | |

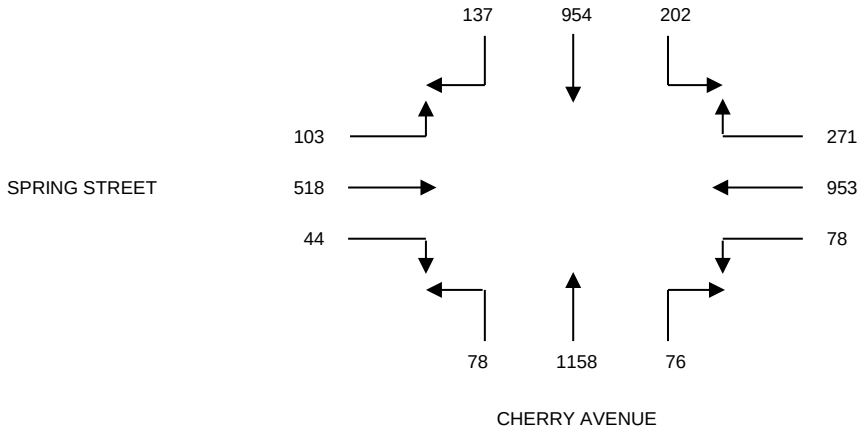
# INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: LLG - PASADENA
PROJECT: SIGNAL HILL HERITAGE SQUARE
DATE: WEDNESDAY, MARCH 28, 2018
PERIOD: 07:00 AM TO 09:00 AM
INTERSECTION: N/S CHERRY AVENUE
E/W SPRING STREET
FILE NUMBER: 6-AM

| 15 MINUTE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOTALS | SBRT | SBTH | SBLT | WBRT | WBTH | WBLT | NBRT | NBTH | NBLT | EBRT | EBTH | EBLT |
| 0700-0715 | 28 | 159 | 21 | 55 | 130 | 19 | 15 | 228 | 16 | 8 | 90 | 18 |
| 0715-0730 | 44 | 214 | 42 | 69 | 185 | 18 | 16 | 269 | 18 | 7 | 107 | 15 |
| 0730-0745 | 34 | 243 | 39 | 78 | 215 | 17 | 25 | 297 | 19 | 5 | 134 | 21 |
| 0745-0800 | 39 | 252 | 60 | 81 | 269 | 21 | 17 | 288 | 18 | 8 | 139 | 29 |
| 0800-0815 | 31 | 239 | 60 | 58 | 223 | 24 | 19 | 293 | 24 | 12 | 117 | 26 |
| 0815-0830 | 33 | 220 | 43 | 54 | 246 | 16 | 15 | 280 | 17 | 19 | 128 | 27 |
| 0830-0845 | 37 | 225 | 40 | 64 | 179 | 13 | 21 | 283 | 15 | 17 | 123 | 25 |
| 0845-0900 | 39 | 223 | 54 | 77 | 184 | 14 | 22 | 244 | 24 | 17 | 118 | 17 |

| 1 HOUR | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOTALS | SBRT | SBTH | SBLT | WBRT | WBTH | WBLT | NBRT | NBTH | NBLT | EBRT | EBTH | EBLT | TOTALS |
| 0700-0800 | 145 | 868 | 162 | 283 | 799 | 75 | 73 | 1082 | 71 | 28 | 470 | 83 | 4139 |
| 0715-0815 | 148 | 948 | 201 | 286 | 892 | 80 | 77 | 1147 | 79 | 32 | 497 | 91 | 4478 |
| 0730-0830 | 137 | 954 | 202 | 271 | 953 | 78 | 76 | 1158 | 78 | 44 | 518 | 103 | 4572 |
| 0745-0845 | 140 | 936 | 203 | 257 | 917 | 74 | 72 | 1144 | 74 | 56 | 507 | 107 | 4487 |
| 0800-0900 | 140 | 907 | 197 | 253 | 832 | 67 | 77 | 1100 | 80 | 65 | 486 | 95 | 4299 |

A.M. PEAK HOUR
0730-0830



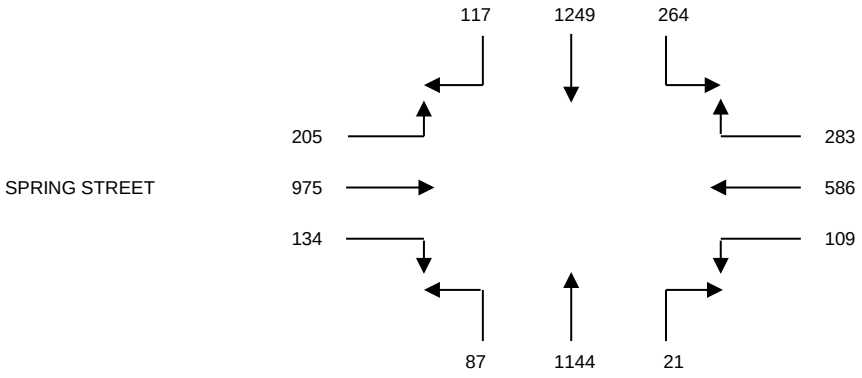
# INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: LLG - PASADENA
PROJECT: SIGNAL HILL HERITAGE SQUARE
DATE: WEDNESDAY, MARCH 28, 2018
PERIOD: 04:00 PM TO 06:00 PM
INTERSECTION: N/S CHERRY AVENUE
E/W SPRING STREET
FILE NUMBER: 6-PM

| 15 MINUTE TOTALS | 1 SBRT | 2 SBTH | 3 SBLT | 4 WBRT | 5 WBTH | 6 WBLT | 7 NBRT | 8 NBTH | 9 NBLT | 10 EBRT | 11 EBTH | 12 EBLT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0400-0415 | 29 | 271 | 55 | 84 | 157 | 27 | 9 | 232 | 15 | 34 | 237 | 51 |
| 0415-0430 | 32 | 277 | 51 | 62 | 164 | 23 | 5 | 261 | 25 | 39 | 210 | 44 |
| 0430-0445 | 29 | 300 | 60 | 74 | 144 | 20 | 3 | 294 | 28 | 28 | 211 | 50 |
| 0445-0500 | 29 | 284 | 57 | 67 | 161 | 24 | 4 | 299 | 26 | 41 | 235 | 52 |
| 0500-0515 | 29 | 341 | 68 | 90 | 131 | 28 | 3 | 273 | 25 | 26 | 222 | 53 |
| 0515-0530 | 23 | 333 | 63 | 60 | 163 | 31 | 6 | 280 | 19 | 35 | 282 | 53 |
| 0530-0545 | 36 | 291 | 76 | 66 | 131 | 26 | 8 | 292 | 17 | 32 | 236 | 47 |
| 0545-0600 | 38 | 287 | 64 | 81 | 125 | 19 | 12 | 307 | 22 | 23 | 217 | 49 |

| 1 HOUR TOTALS | 1 SBRT | 2 SBTH | 3 SBLT | 4 WBRT | 5 WBTH | 6 WBLT | 7 NBRT | 8 NBTH | 9 NBLT | 10 EBRT | 11 EBTH | 12 EBLT | TOTALS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0400-0500 | 119 | 1132 | 223 | 287 | 626 | 94 | 21 | 1086 | 94 | 142 | 893 | 197 | 4914 |
| 0415-0515 | 119 | 1202 | 236 | 293 | 600 | 95 | 15 | 1127 | 104 | 134 | 878 | 199 | 5002 |
| 0430-0530 | 110 | 1258 | 248 | 291 | 599 | 103 | 16 | 1146 | 98 | 130 | 950 | 208 | 5157 |
| 0445-0545 | 117 | 1249 | 264 | 283 | 586 | 109 | 21 | 1144 | 87 | 134 | 975 | 205 | 5174 |
| 0500-0600 | 126 | 1252 | 271 | 297 | 550 | 104 | 29 | 1152 | 83 | 116 | 957 | 202 | 5139 |

P.M. PEAK HOUR
0445-0545



# PEDESTRIAN - BICYCLE COUNT SUMMARY

CLIENT: LLG - PASADENA

PROJECT: SIGNAL HILL HERITAGE SQUARE

DATE: WEDNESDAY, MARCH 28, 2018

PERIOD: 07:00 AM TO 09:00 AM

INTERSECTION: CHERRY STREET / SPRING STREET

FILE: 6AMPED-BIKE

| | PEDESTRIAN MOVEMENTS | | | |
|---|---|---|---|---|
| 15-MINUTE PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D |
| 0700-0715 | 0 | 0 | 0 | 0 |
| 0715-0730 | 0 | 0 | 0 | 0 |
| 0730-0745 | 0 | 0 | 0 | 0 |
| 0745-0800 | 1 | 3 | 2 | 2 |
| 0800-0815 | 0 | 0 | 0 | 0 |
| 0815-0830 | 0 | 0 | 0 | 0 |
| 0830-0845 | 1 | 0 | 0 | 1 |
| 0845-0900 | 0 | 0 | 1 | 0 |

| | BICYCLIST MOVEMENTS | | | |
|---|---|---|---|---|
| 15-MINUTE PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D |
| 0700-0715 | 0 | 0 | 0 | 0 |
| 0715-0730 | 0 | 0 | 0 | 0 |
| 0730-0745 | 0 | 0 | 0 | 0 |
| 0745-0800 | 0 | 2 | 1 | 2 |
| 0800-0815 | 0 | 0 | 0 | 0 |
| 0815-0830 | 0 | 1 | 0 | 1 |
| 0830-0845 | 0 | 0 | 0 | 0 |
| 0845-0900 | 0 | 1 | 0 | 0 |

| | PEDESTRIAN MOVEMENTS | | | | |
|---|---|---|---|---|---|
| 1-HOUR PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D | TOTALS |
| 0700-0800 | 1 | 3 | 2 | 2 | 8 |
| 0715-0815 | 1 | 3 | 2 | 2 | 8 |
| 0730-0830 | 1 | 3 | 2 | 2 | 8 |
| 0745-0845 | 2 | 3 | 2 | 3 | 10 |
| 0800-0900 | 1 | 0 | 1 | 1 | 3 |

| | BICYCLIST MOVEMENTS | | | | |
|---|---|---|---|---|---|
| 1-HOUR PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D | TOTALS |
| 0700-0800 | 0 | 2 | 1 | 2 | 5 |
| 0715-0815 | 0 | 2 | 1 | 2 | 5 |
| 0730-0830 | 0 | 3 | 1 | 3 | 7 |
| 0745-0845 | 0 | 3 | 1 | 3 | 7 |
| 0800-0900 | 0 | 2 | 0 | 1 | 3 |

# PEDESTRIAN - BICYCLE COUNT SUMMARY

CLIENT: LLG - PASADENA

PROJECT: SIGNAL HILL HERITAGE SQUARE

DATE: WEDNESDAY, MARCH 28, 2018

PERIOD: 04:00 PM TO 06:00 PM

INTERSECTION: CHERRY STREET / SPRING STREET

FILE: 6PMPED-BIKE

| | PEDESTRIAN MOVEMENTS | | | |
|---|---|---|---|---|
| 15-MINUTE PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D |
| 0400-0415 | 1 | 1 | 0 | 6 |
| 0415-0430 | 0 | 0 | 0 | 3 |
| 0430-0445 | 0 | 1 | 0 | 2 |
| 0445-0500 | 1 | 2 | 0 | 0 |
| 0500-0515 | 3 | 1 | 0 | 1 |
| 0515-0530 | 2 | 0 | 1 | 0 |
| 0530-0545 | 6 | 0 | 0 | 0 |
| 0545-0600 | 5 | 2 | 1 | 0 |

| | BICYCLIST MOVEMENTS | | | |
|---|---|---|---|---|
| 15-MINUTE PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D |
| 0400-0415 | 0 | 0 | 0 | 0 |
| 0415-0430 | 0 | 0 | 0 | 2 |
| 0430-0445 | 0 | 0 | 0 | 1 |
| 0445-0500 | 1 | 0 | 0 | 0 |
| 0500-0515 | 0 | 1 | 0 | 0 |
| 0515-0530 | 0 | 0 | 0 | 0 |
| 0530-0545 | 0 | 1 | 0 | 0 |
| 0545-0600 | 0 | 0 | 0 | 0 |

| | PEDESTRIAN MOVEMENTS | | | | |
|---|---|---|---|---|---|
| 1-HOUR PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D | TOTALS |
| 0400-0500 | 2 | 4 | 0 | 11 | 17 |
| 0415-0515 | 4 | 4 | 0 | 6 | 14 |
| 0430-0530 | 6 | 4 | 1 | 3 | 14 |
| 0445-0545 | 12 | 3 | 1 | 1 | 17 |
| 0500-0600 | 16 | 3 | 2 | 1 | 22 |

| | BICYCLIST MOVEMENTS | | | | |
|---|---|---|---|---|---|
| 1-HOUR PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D | TOTALS |
| 0400-0500 | 1 | 0 | 0 | 3 | 4 |
| 0415-0515 | 1 | 1 | 0 | 3 | 5 |
| 0430-0530 | 1 | 1 | 0 | 1 | 3 |
| 0445-0545 | 1 | 2 | 0 | 0 | 3 |
| 0500-0600 | 0 | 2 | 0 | 0 | 2 |

Prepared by National Data & Surveying Services

# I-405 SB Off-Ramp & E Spring St

## Peak Hour Turning Movement Count

**ID:** 18-05321-015
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:30 AM - 08:30 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 04:30 PM - 05:30 PM | 04:00 PM - 06:00 PM |

### I-405 SB Off-Ramp — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 210 | 4 | 699 | 0 | 0 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 135 | 1 | 599 | 0 | 0 | PM |
| | 1 | 0.5 | 1.5 | 0 | | |

### E Spring St — EASTBOUND

| AM | NOON | PM | |
|---|---|---|---|
| 1450 | 0 | 1282 | |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 867 | 0 | 1297 | 2 |
| 8 | 0 | 16 | 0 |
| AM | NOON | PM | |

### CONTROL

Signalized

| | AM | NOON | PM |
|---|---|---|---|
| TEV | 3040 | 0 | 3213 |
| PHF | 0.91 | | 0.92 |

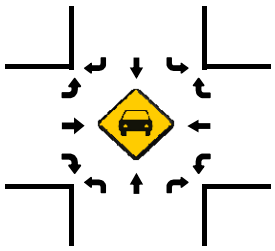
### WESTBOUND — E Spring St

| PM | NOON | AM | |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 1147 | 0 | 1240 | 2 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 1914 | 0 | 1578 | |
| PM | NOON | AM | |

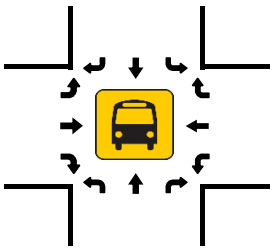
### I-405 SB Off-Ramp — NORTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| | 0 | 0 | 1 | 0 | | |
| PM | 17 | 0 | 0 | 0 | 18 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 12 | 0 | 0 | 0 | 12 | AM |

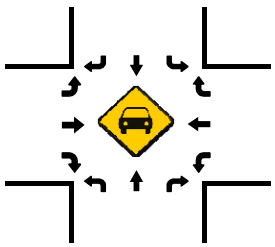
Total Vehicles (AM)



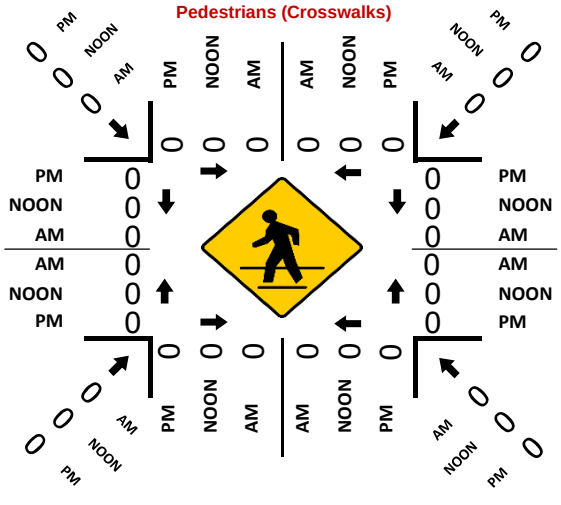
Total Vehicles (AM)



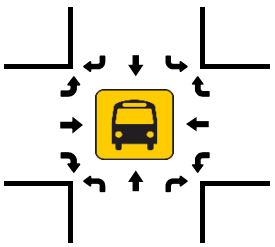
Total Vehicles (NOON)



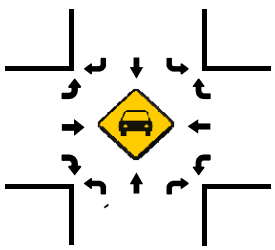
Pedestrians (Crosswalks)



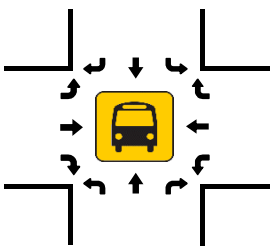
Total Vehicles (NOON)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

**Location:** I-405 SB Off-Ramp & E Spring St
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05321-015
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | I-405 SB Off-Ramp | | | | I-405 SB Off-Ramp | | | | E Spring St | | | | E Spring St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 0 | 1 | 0 | 0 | 1.5 | 0.5 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 0 | 0 | 0 | 0 | 131 | 3 | 46 | 0 | 0 | 152 | 5 | 0 | 0 | 214 | 0 | 0 | 551 |
| 7:15 AM | 0 | 0 | 0 | 0 | 115 | 0 | 64 | 0 | 0 | 181 | 2 | 0 | 0 | 237 | 0 | 0 | 599 |
| 7:30 AM | 0 | 0 | 3 | 0 | 147 | 1 | 47 | 0 | 0 | 248 | 1 | 0 | 0 | 310 | 0 | 0 | 757 |
| 7:45 AM | 0 | 0 | 4 | 0 | 220 | 0 | 55 | 0 | 0 | 236 | 1 | 0 | 0 | 317 | 0 | 0 | 833 |
| 8:00 AM | 0 | 0 | 3 | 0 | 178 | 0 | 55 | 0 | 0 | 212 | 2 | 0 | 0 | 341 | 0 | 0 | 791 |
| 8:15 AM | 0 | 0 | 2 | 0 | 154 | 3 | 53 | 0 | 0 | 171 | 4 | 0 | 0 | 272 | 0 | 0 | 659 |
| 8:30 AM | 0 | 0 | 5 | 0 | 133 | 1 | 46 | 0 | 0 | 197 | 2 | 0 | 0 | 272 | 0 | 0 | 656 |
| 8:45 AM | 0 | 0 | 2 | 0 | 143 | 1 | 54 | 0 | 0 | 175 | 3 | 0 | 0 | 263 | 0 | 0 | 641 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 0 | 0 | 19 | 0 | 1221 | 9 | 420 | 0 | 0 | 1572 | 20 | 0 | 0 | 2226 | 0 | 0 | 5487 |
| **APPROACH %'s :** | 0.00% | 0.00% | 100.00% | 0.00% | 74.00% | 0.55% | 25.45% | 0.00% | 0.00% | 98.74% | 1.26% | 0.00% | 0.00% | 100.00% | 0.00% | 0.00% | |
| **PEAK HR :** | 07:30 AM - 08:30 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 0 | 0 | 12 | 0 | 699 | 4 | 210 | 0 | 0 | 867 | 8 | 0 | 0 | 1240 | 0 | 0 | 3040 |
| **PEAK HR FACTOR :** | 0.000 | 0.000 | 0.750 | 0.000 | 0.794 | 0.333 | 0.955 | 0.000 | 0.000 | 0.874 | 0.500 | 0.000 | 0.000 | 0.909 | 0.000 | 0.000 | 0.912 |
| | 0.750 | | | | 0.830 | | | | 0.879 | | | | 0.909 | | | | |

| NS/EW Streets: | I-405 SB Off-Ramp | | | | I-405 SB Off-Ramp | | | | E Spring St | | | | E Spring St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **PM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 0 | 1 | 0 | 0 | 1.5 | 0.5 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 0 | 0 | 5 | 0 | 120 | 1 | 38 | 0 | 0 | 286 | 3 | 0 | 0 | 257 | 0 | 0 | 710 |
| 4:15 PM | 0 | 0 | 4 | 0 | 125 | 0 | 32 | 0 | 0 | 307 | 3 | 0 | 0 | 210 | 0 | 0 | 681 |
| 4:30 PM | 0 | 0 | 0 | 0 | 150 | 0 | 39 | 0 | 0 | 329 | 2 | 0 | 0 | 242 | 0 | 0 | 762 |
| 4:45 PM | 0 | 0 | 1 | 0 | 143 | 1 | 40 | 0 | 0 | 306 | 7 | 0 | 0 | 263 | 0 | 0 | 761 |
| 5:00 PM | 0 | 0 | 11 | 0 | 147 | 0 | 34 | 0 | 0 | 329 | 4 | 0 | 0 | 293 | 0 | 0 | 818 |
| 5:15 PM | 0 | 0 | 6 | 0 | 159 | 0 | 22 | 0 | 0 | 333 | 3 | 0 | 0 | 349 | 0 | 0 | 872 |
| 5:30 PM | 0 | 0 | 4 | 0 | 138 | 0 | 38 | 0 | 0 | 315 | 1 | 0 | 0 | 258 | 0 | 0 | 754 |
| 5:45 PM | 0 | 0 | 2 | 0 | 144 | 1 | 45 | 0 | 0 | 254 | 4 | 0 | 0 | 221 | 0 | 0 | 671 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 0 | 0 | 33 | 0 | 1126 | 3 | 288 | 0 | 0 | 2459 | 27 | 0 | 0 | 2093 | 0 | 0 | 6029 |
| **APPROACH %'s :** | 0.00% | 0.00% | 100.00% | 0.00% | 79.46% | 0.21% | 20.32% | 0.00% | 0.00% | 98.91% | 1.09% | 0.00% | 0.00% | 100.00% | 0.00% | 0.00% | |
| **PEAK HR :** | 04:30 PM - 05:30 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 0 | 0 | 18 | 0 | 599 | 1 | 135 | 0 | 0 | 1297 | 16 | 0 | 0 | 1147 | 0 | 0 | 3213 |
| **PEAK HR FACTOR :** | 0.000 | 0.000 | 0.409 | 0.000 | 0.942 | 0.250 | 0.844 | 0.000 | 0.000 | 0.974 | 0.571 | 0.000 | 0.000 | 0.822 | 0.000 | 0.000 | 0.921 |
| | 0.409 | | | | 0.972 | | | | 0.977 | | | | 0.822 | | | | |

Prepared by National Data & Surveying Services

# Temple Ave & E Spring St

## Peak Hour Turning Movement Count

**ID:** 18-05321-016
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:30 AM - 08:30 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 04:30 PM - 05:30 PM | 04:00 PM - 06:00 PM |

### Temple Ave — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 1 | 2 | 2 | 0 | 42 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 28 | 9 | 33 | 0 | 14 | PM |

### E Spring St — EASTBOUND

| AM | NOON | PM | | |
|---|---|---|---|---|
| 2240 | 0 | 1875 | ⇦ | |
| 10 | 0 | 12 | ↶ | 0 |
| 15 | 0 | 5 | ↱ | 1 |
| 1052 | 0 | 1446 | → | 3 |
| 255 | 0 | 252 | ↴ | 0 |
| AM | NOON | PM | | |

### CONTROL

Signalized

| | | | |
|---|---|---|---|
| TEV | 3754 AM | 0 NOON | 3810 PM |
| PHF | 0.93 | | 0.92 |

### WESTBOUND — E Spring St

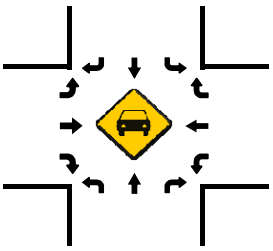
| PM | NOON | AM | | |
|---|---|---|---|---|
| 6 | 0 | 8 | ↶ | 0 |
| 1405 | 0 | 1800 | ← | 3 |
| 65 | 0 | 92 | ↰ | 1 |
| 2 | 0 | 1 | ↰ | 0 |
| 1592 | 0 | 1121 | ⇨ | |
| PM | NOON | AM | | |

### Temple Ave — NORTHBOUND

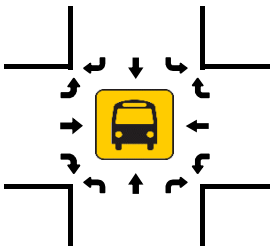
| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 329 | 3 | 430 | 3 | 111 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 351 | 2 | 429 | 19 | 66 | AM |

0.5 1 0.5 0 — 0 2 0.5 0.5

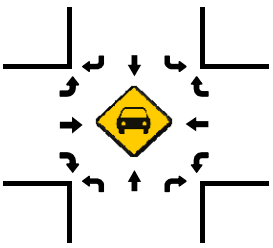
Total Vehicles (AM)



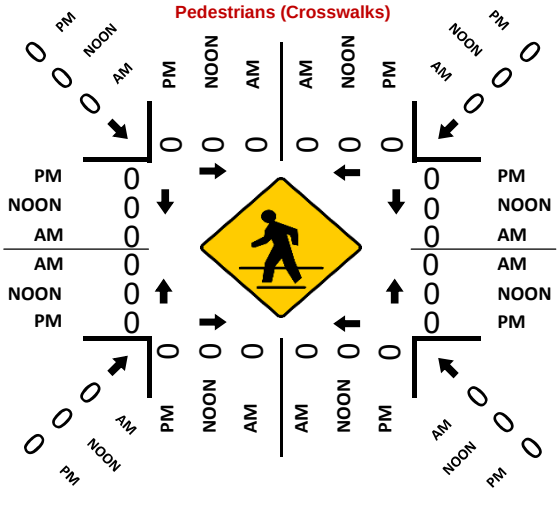
Total Vehicles (AM)



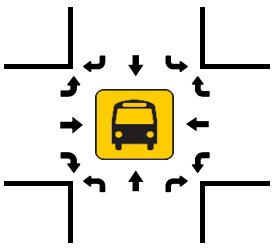
Total Vehicles (NOON)



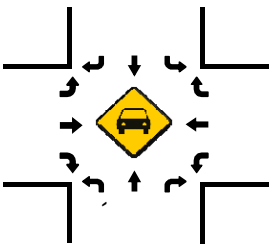
Pedestrians (Crosswalks)



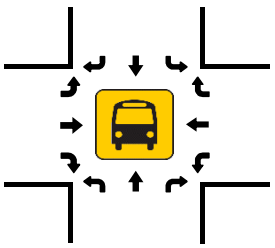
Total Vehicles (NOON)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

**Location:** Temple Ave & E Spring St
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05321-016
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | Temple Ave | | | | Temple Ave | | | | E Spring St | | | | E Spring St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 2 | 0.5 | 0.5 | 0 | 0.5 | 1 | 0.5 | 0 | 1 | 3 | 0 | 0 | 1 | 3 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 89 | 0 | 20 | 3 | 0 | 0 | 0 | 0 | 2 | 167 | 58 | 1 | 12 | 352 | 0 | 0 | 704 |
| 7:15 AM | 93 | 1 | 13 | 0 | 0 | 0 | 0 | 0 | 4 | 189 | 45 | 4 | 18 | 374 | 1 | 0 | 742 |
| 7:30 AM | 118 | 3 | 16 | 1 | 0 | 0 | 0 | 0 | 3 | 272 | 57 | 4 | 27 | 468 | 2 | 1 | 972 |
| 7:45 AM | 107 | 6 | 14 | 0 | 0 | 0 | 0 | 0 | 1 | 318 | 77 | 2 | 18 | 462 | 1 | 0 | 1006 |
| 8:00 AM | 102 | 6 | 17 | 0 | 1 | 1 | 0 | 0 | 2 | 239 | 73 | 2 | 22 | 497 | 4 | 0 | 966 |
| 8:15 AM | 102 | 4 | 19 | 1 | 1 | 1 | 1 | 0 | 9 | 223 | 48 | 2 | 25 | 373 | 1 | 0 | 810 |
| 8:30 AM | 92 | 6 | 27 | 0 | 3 | 2 | 1 | 0 | 2 | 223 | 48 | 5 | 14 | 377 | 2 | 0 | 802 |
| 8:45 AM | 110 | 6 | 18 | 1 | 0 | 0 | 0 | 0 | 9 | 224 | 34 | 2 | 13 | 352 | 2 | 1 | 772 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 813 | 32 | 144 | 6 | 5 | 4 | 2 | 0 | 32 | 1855 | 440 | 22 | 149 | 3255 | 13 | 2 | 6774 |
| **APPROACH %'s :** | 81.71% | 3.22% | 14.47% | 0.60% | 45.45% | 36.36% | 18.18% | 0.00% | 1.36% | 78.97% | 18.73% | 0.94% | 4.36% | 95.20% | 0.38% | 0.06% | |
| **PEAK HR :** | 07:30 AM - 08:30 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 429 | 19 | 66 | 2 | 2 | 2 | 1 | 0 | 15 | 1052 | 255 | 10 | 92 | 1800 | 8 | 1 | 3754 |
| **PEAK HR FACTOR :** | 0.909 | 0.792 | 0.868 | 0.500 | 0.500 | 0.500 | 0.250 | 0.000 | 0.417 | 0.827 | 0.828 | 0.625 | 0.852 | 0.905 | 0.500 | 0.250 | 0.933 |
| | 0.935 | | | | 0.417 | | | | 0.837 | | | | 0.909 | | | | |

| **PM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 0.5 | 0.5 | 0 | 0.5 | 1 | 0.5 | 0 | 1 | 3 | 0 | 0 | 1 | 3 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 122 | 5 | 35 | 1 | 7 | 0 | 1 | 0 | 1 | 305 | 74 | 9 | 6 | 365 | 4 | 0 | 935 |
| 4:15 PM | 88 | 0 | 40 | 0 | 6 | 2 | 2 | 0 | 2 | 303 | 69 | 3 | 10 | 278 | 1 | 1 | 805 |
| 4:30 PM | 110 | 2 | 26 | 2 | 7 | 2 | 8 | 0 | 2 | 361 | 62 | 2 | 14 | 362 | 1 | 0 | 961 |
| 4:45 PM | 96 | 1 | 26 | 0 | 10 | 2 | 4 | 0 | 2 | 346 | 58 | 2 | 14 | 288 | 1 | 0 | 850 |
| 5:00 PM | 144 | 0 | 41 | 0 | 6 | 5 | 8 | 0 | 0 | 353 | 59 | 4 | 23 | 390 | 3 | 1 | 1037 |
| 5:15 PM | 80 | 0 | 18 | 1 | 10 | 0 | 8 | 0 | 1 | 386 | 73 | 4 | 14 | 365 | 1 | 1 | 962 |
| 5:30 PM | 86 | 1 | 26 | 0 | 8 | 5 | 7 | 0 | 2 | 320 | 65 | 4 | 20 | 365 | 0 | 0 | 909 |
| 5:45 PM | 71 | 0 | 17 | 0 | 3 | 1 | 5 | 0 | 4 | 309 | 60 | 3 | 19 | 281 | 0 | 0 | 773 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 797 | 9 | 229 | 4 | 57 | 17 | 43 | 0 | 14 | 2683 | 520 | 31 | 120 | 2694 | 11 | 3 | 7232 |
| **APPROACH %'s :** | 76.71% | 0.87% | 22.04% | 0.38% | 48.72% | 14.53% | 36.75% | 0.00% | 0.43% | 82.60% | 16.01% | 0.95% | 4.24% | 95.26% | 0.39% | 0.11% | |
| **PEAK HR :** | 04:30 PM - 05:30 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 430 | 3 | 111 | 3 | 33 | 9 | 28 | 0 | 5 | 1446 | 252 | 12 | 65 | 1405 | 6 | 2 | 3810 |
| **PEAK HR FACTOR :** | 0.747 | 0.375 | 0.677 | 0.375 | 0.825 | 0.450 | 0.875 | 0.000 | 0.625 | 0.937 | 0.863 | 0.750 | 0.707 | 0.901 | 0.500 | 0.500 | 0.919 |
| | 0.739 | | | | 0.921 | | | | 0.924 | | | | 0.886 | | | | |

Prepared by National Data & Surveying Services

# Temple Ave & I-405 NB Off-Ramp

## Peak Hour Turning Movement Count

**ID:** 18-05321-017
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:30 AM - 08:30 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 04:15 PM - 05:15 PM | 04:00 PM - 06:00 PM |

### Temple Ave — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 0 | 345 | 0 | 0 | 523 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 0 | 326 | 0 | 0 | 575 | PM |

### I-405 NB Off-Ramp — EASTBOUND

| AM | NOON | PM | |
|---|---|---|---|
| 0 | 0 | 0 | |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 |
| AM | NOON | PM | |

### I-405 NB Off-Ramp — WESTBOUND

| PM | NOON | AM | |
|---|---|---|---|
| 115 | 0 | 136 | 1 |
| 0 | 0 | 0 | 0 |
| 343 | 0 | 246 | 1 |
| 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | |
| PM | NOON | AM | |

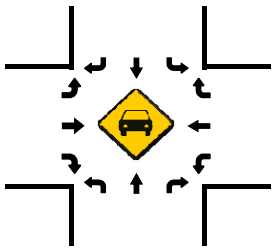
### Temple Ave — NORTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 669 | 0 | 0 | 460 | 0 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 591 | 0 | 0 | 387 | 0 | AM |

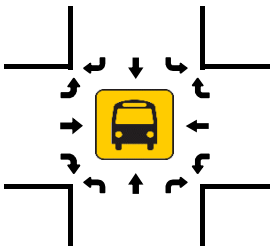
| | | | | |
|---|---|---|---|---|
| 0 | 2 | 0 | 0 | |
| 0 | 0 | 2 | 0 | |

| CONTROL | | | |
|---|---|---|---|
| Signalized | | | |
| TEV | 1114 | 0 | 1244 |
| | AM | NOON | PM |
| PHF | 0.95 | | 0.89 |

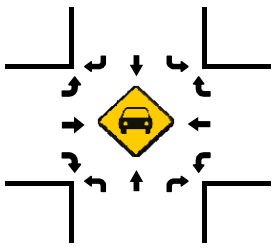
Total Vehicles (AM)



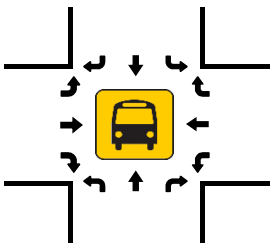
Total Vehicles (AM)



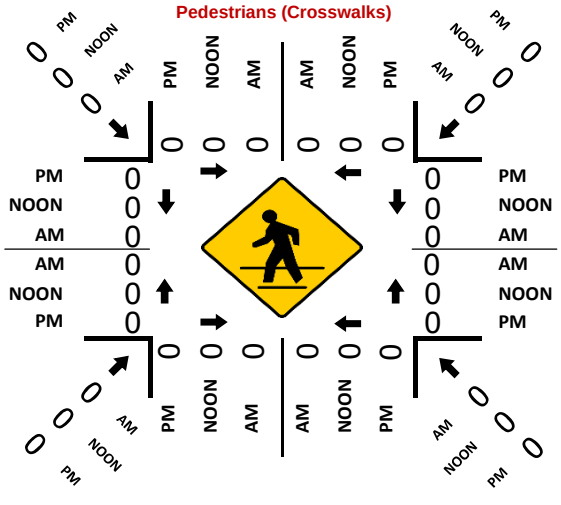
Total Vehicles (NOON)



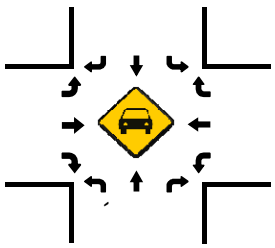
Total Vehicles (NOON)



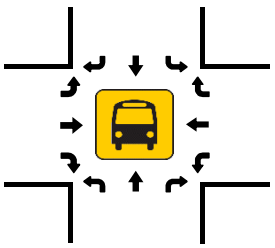
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

**Location:** Temple Ave & I-405 NB Off-Ramp
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05321-017
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | Temple Ave | | | | Temple Ave | | | | I-405 NB Off-Ramp | | | | I-405 NB Off-Ramp | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 0 | 74 | 0 | 0 | 0 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 68 | 0 | 33 | 0 | 245 |
| 7:15 AM | 0 | 78 | 0 | 0 | 0 | 65 | 0 | 0 | 0 | 0 | 0 | 0 | 42 | 0 | 34 | 0 | 219 |
| 7:30 AM | 0 | 100 | 0 | 0 | 0 | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 62 | 0 | 44 | 0 | 278 |
| 7:45 AM | 0 | 101 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 0 | 33 | 0 | 294 |
| 8:00 AM | 0 | 96 | 0 | 0 | 0 | 101 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 0 | 31 | 0 | 288 |
| 8:15 AM | 0 | 90 | 0 | 0 | 0 | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 64 | 0 | 28 | 0 | 254 |
| 8:30 AM | 0 | 93 | 0 | 0 | 0 | 67 | 0 | 0 | 0 | 0 | 0 | 0 | 61 | 0 | 39 | 0 | 260 |
| 8:45 AM | 0 | 95 | 0 | 0 | 0 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 64 | 0 | 38 | 0 | 251 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 0 | 727 | 0 | 0 | 0 | 601 | 0 | 0 | 0 | 0 | 0 | 0 | 481 | 0 | 280 | 0 | 2089 |
| **APPROACH %'s :** | 0.00% | 100.00% | 0.00% | 0.00% | 0.00% | 100.00% | 0.00% | 0.00% | | | | | 63.21% | 0.00% | 36.79% | 0.00% | |
| **PEAK HR :** | 07:30 AM - 08:30 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 0 | 387 | 0 | 0 | 0 | 345 | 0 | 0 | 0 | 0 | 0 | 0 | 246 | 0 | 136 | 0 | 1114 |
| **PEAK HR FACTOR :** | 0.000 | 0.958 | 0.000 | 0.000 | 0.000 | 0.854 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.961 | 0.000 | 0.773 | 0.000 | 0.947 |
| | | 0.958 | | | | 0.854 | | | | | | | | 0.901 | | | |

| PM | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 0 | 127 | 0 | 0 | 0 | 81 | 0 | 0 | 0 | 0 | 0 | 0 | 93 | 0 | 35 | 0 | 336 |
| 4:15 PM | 0 | 104 | 0 | 0 | 0 | 89 | 0 | 0 | 0 | 0 | 0 | 0 | 80 | 0 | 30 | 0 | 303 |
| 4:30 PM | 0 | 108 | 0 | 0 | 0 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 82 | 0 | 26 | 0 | 286 |
| 4:45 PM | 0 | 97 | 0 | 0 | 0 | 86 | 0 | 0 | 0 | 0 | 0 | 0 | 90 | 0 | 32 | 0 | 305 |
| 5:00 PM | 0 | 151 | 0 | 0 | 0 | 81 | 0 | 0 | 0 | 0 | 0 | 0 | 91 | 0 | 27 | 0 | 350 |
| 5:15 PM | 0 | 79 | 0 | 0 | 0 | 93 | 0 | 0 | 0 | 0 | 0 | 0 | 65 | 0 | 28 | 0 | 265 |
| 5:30 PM | 0 | 104 | 0 | 0 | 0 | 88 | 0 | 0 | 0 | 0 | 0 | 0 | 71 | 0 | 14 | 0 | 277 |
| 5:45 PM | 0 | 65 | 0 | 0 | 0 | 87 | 0 | 0 | 0 | 0 | 0 | 0 | 102 | 0 | 24 | 0 | 278 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 0 | 835 | 0 | 0 | 0 | 675 | 0 | 0 | 0 | 0 | 0 | 0 | 674 | 0 | 216 | 0 | 2400 |
| **APPROACH %'s :** | 0.00% | 100.00% | 0.00% | 0.00% | 0.00% | 100.00% | 0.00% | 0.00% | | | | | 75.73% | 0.00% | 24.27% | 0.00% | |
| **PEAK HR :** | 04:15 PM - 05:15 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 0 | 460 | 0 | 0 | 0 | 326 | 0 | 0 | 0 | 0 | 0 | 0 | 343 | 0 | 115 | 0 | 1244 |
| **PEAK HR FACTOR :** | 0.000 | 0.762 | 0.000 | 0.000 | 0.000 | 0.916 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.942 | 0.000 | 0.898 | 0.000 | 0.889 |
| | | 0.762 | | | | 0.916 | | | | | | | | 0.939 | | | |

Prepared by National Data & Surveying Services

# Redondo Ave & E Spring St

## Peak Hour Turning Movement Count

**ID:** 18-05321-018
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

**PEAK HOURS**

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

**COUNT PERIODS**

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

### Redondo Ave — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 2 | 1 | 6 | 0 | 14 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 10 | 3 | 4 | 0 | 23 | PM |

### E Spring St — EASTBOUND

| AM | NOON | PM | | |
|---|---|---|---|---|
| 1992 | 0 | 1435 | ⇦ | |
| 2 | 0 | 3 | ↶ | 0 |
| 4 | 0 | 6 | ↱ | 1 |
| 684 | 0 | 1233 | → | 3 |
| 339 | 0 | 385 | ↴ | 0 |
| AM | NOON | PM | | |

### CONTROL

Signalized

| | | | |
|---|---|---|---|
| TEV | 3622 AM | 0 NOON | 3721 PM |
| PHF | 0.94 | | 0.93 |

### WESTBOUND — E Spring St

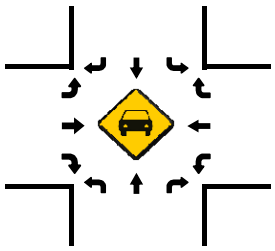
| PM | NOON | AM | | |
|---|---|---|---|---|
| 8 | 0 | 10 | ↰ | 0 |
| 857 | 0 | 1374 | ← | 3 |
| 237 | 0 | 291 | ↰ | 2 |
| 0 | 0 | 0 | ↰ | 0 |
| 1638 | 0 | 985 | ⇨ | |
| PM | NOON | AM | | |

### Redondo Ave — NORTHBOUND

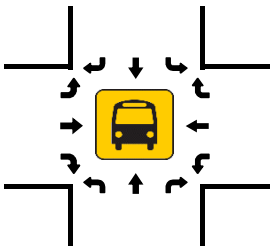
| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 625 | 0 | 565 | 9 | 401 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 631 | 0 | 614 | 0 | 295 | AM |

0.5 1.5 1 0 — 0 2 0.5 1.5

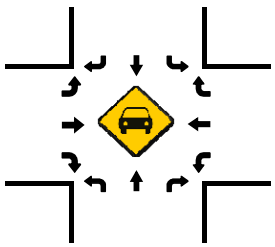
Total Vehicles (AM)



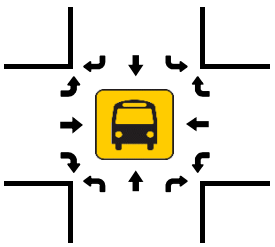
Total Vehicles (AM)



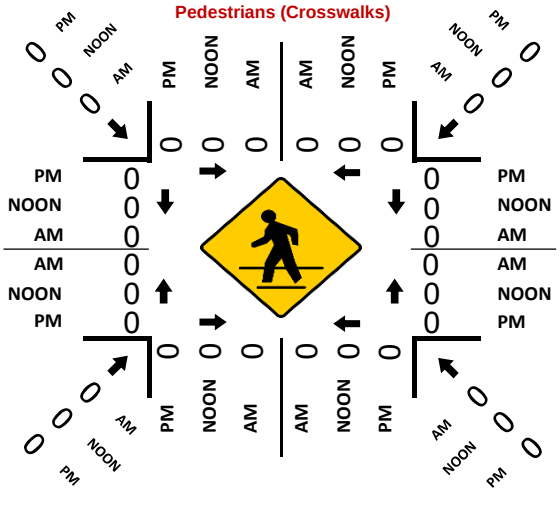
Total Vehicles (NOON)



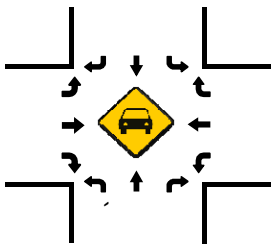
Total Vehicles (NOON)



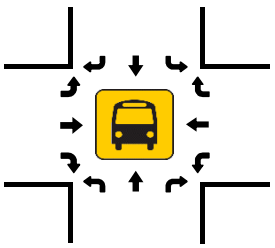
Pedestrians (Crosswalks)




Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

**Location:** Redondo Ave & E Spring St
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05321-018
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | Redondo Ave | | | | Redondo Ave | | | | E Spring St | | | | E Spring St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 2 | 0.5 | 1.5 | 0 | 1 | 1.5 | 0.5 | 0 | 1 | 3 | 0 | 0 | 2 | 3 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 144 | 0 | 55 | 0 | 1 | 0 | 0 | 0 | 0 | 108 | 49 | 0 | 39 | 214 | 6 | 0 | 616 |
| 7:15 AM | 127 | 0 | 42 | 0 | 0 | 0 | 2 | 0 | 1 | 141 | 44 | 0 | 66 | 281 | 4 | 0 | 708 |
| 7:30 AM | 140 | 0 | 97 | 0 | 2 | 1 | 1 | 0 | 2 | 187 | 76 | 0 | 75 | 382 | 2 | 0 | 965 |
| 7:45 AM | 158 | 0 | 71 | 0 | 2 | 0 | 0 | 0 | 0 | 192 | 113 | 0 | 78 | 351 | 1 | 0 | 966 |
| 8:00 AM | 167 | 0 | 60 | 0 | 0 | 0 | 1 | 0 | 1 | 139 | 76 | 0 | 91 | 372 | 4 | 0 | 911 |
| 8:15 AM | 149 | 0 | 67 | 0 | 2 | 0 | 0 | 0 | 1 | 166 | 74 | 2 | 47 | 269 | 3 | 0 | 780 |
| 8:30 AM | 138 | 0 | 86 | 0 | 1 | 0 | 1 | 0 | 3 | 157 | 64 | 0 | 53 | 282 | 2 | 0 | 787 |
| 8:45 AM | 125 | 1 | 59 | 0 | 3 | 2 | 1 | 0 | 6 | 161 | 64 | 0 | 69 | 284 | 1 | 0 | 776 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 1148 | 1 | 537 | 0 | 11 | 3 | 6 | 0 | 14 | 1251 | 560 | 2 | 518 | 2435 | 23 | 0 | 6509 |
| **APPROACH %'s :** | 68.09% | 0.06% | 31.85% | 0.00% | 55.00% | 15.00% | 30.00% | 0.00% | 0.77% | 68.47% | 30.65% | 0.11% | 17.41% | 81.82% | 0.77% | 0.00% | |
| **PEAK HR :** | 07:30 AM - 08:30 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 614 | 0 | 295 | 0 | 6 | 1 | 2 | 0 | 4 | 684 | 339 | 2 | 291 | 1374 | 10 | 0 | 3622 |
| **PEAK HR FACTOR :** | 0.919 | 0.000 | 0.760 | 0.000 | 0.750 | 0.250 | 0.500 | 0.000 | 0.500 | 0.891 | 0.750 | 0.250 | 0.799 | 0.899 | 0.625 | 0.000 | 0.937 |
| | 0.959 | | | | 0.563 | | | | 0.843 | | | | 0.897 | | | | |

| **PM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 0.5 | 1.5 | 0 | 1 | 1.5 | 0.5 | 0 | 1 | 3 | 0 | 0 | 2 | 3 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 130 | 0 | 81 | 0 | 4 | 0 | 5 | 0 | 1 | 267 | 87 | 1 | 46 | 218 | 0 | 1 | 841 |
| 4:15 PM | 134 | 3 | 79 | 0 | 5 | 1 | 4 | 0 | 0 | 279 | 78 | 0 | 55 | 157 | 2 | 0 | 797 |
| 4:30 PM | 143 | 1 | 99 | 0 | 0 | 2 | 1 | 0 | 2 | 330 | 90 | 1 | 45 | 206 | 1 | 0 | 921 |
| 4:45 PM | 131 | 4 | 89 | 0 | 1 | 2 | 3 | 0 | 1 | 300 | 82 | 0 | 52 | 173 | 3 | 0 | 841 |
| 5:00 PM | 164 | 3 | 121 | 0 | 2 | 1 | 3 | 0 | 0 | 341 | 91 | 2 | 47 | 218 | 2 | 0 | 995 |
| 5:15 PM | 136 | 1 | 105 | 0 | 0 | 0 | 0 | 0 | 2 | 285 | 117 | 1 | 77 | 231 | 1 | 0 | 956 |
| 5:30 PM | 134 | 1 | 86 | 0 | 1 | 0 | 4 | 0 | 3 | 307 | 95 | 0 | 61 | 235 | 2 | 0 | 929 |
| 5:45 PM | 105 | 1 | 91 | 0 | 4 | 0 | 4 | 0 | 4 | 232 | 103 | 0 | 57 | 173 | 3 | 1 | 778 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 1077 | 14 | 751 | 0 | 17 | 6 | 24 | 0 | 13 | 2341 | 743 | 5 | 440 | 1611 | 14 | 2 | 7058 |
| **APPROACH %'s :** | 58.47% | 0.76% | 40.77% | 0.00% | 36.17% | 12.77% | 51.06% | 0.00% | 0.42% | 75.47% | 23.95% | 0.16% | 21.29% | 77.94% | 0.68% | 0.10% | |
| **PEAK HR :** | 04:45 PM - 05:45 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 565 | 9 | 401 | 0 | 4 | 3 | 10 | 0 | 6 | 1233 | 385 | 3 | 237 | 857 | 8 | 0 | 3721 |
| **PEAK HR FACTOR :** | 0.861 | 0.563 | 0.829 | 0.000 | 0.500 | 0.375 | 0.625 | 0.000 | 0.500 | 0.904 | 0.823 | 0.375 | 0.769 | 0.912 | 0.667 | 0.000 | 0.935 |
| | 0.846 | | | | 0.708 | | | | 0.937 | | | | 0.892 | | | | |

Prepared by National Data & Surveying Services

# Kilroy Airport Way & E Spring St

## Peak Hour Turning Movement Count

**ID:** 18-05321-019
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:30 AM - 08:30 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 04:30 PM - 05:30 PM | 04:00 PM - 06:00 PM |

**CONTROL:** Signalized

| | AM | NOON | PM |
|---|---|---|---|
| TEV | 3109 | 0 | 3310 |
| PHF | 0.93 | | 0.91 |

### Kilroy Airport Way — SOUTHBOUND

| | Left | Thru | Right | U-Turn | |
|---|---|---|---|---|---|
| AM | 0 | 0 | 0 | 0 | 0 AM |
| NOON | 0 | 0 | 0 | 0 | 0 NOON |
| PM | 0 | 0 | 0 | 0 | 0 PM |

### E Spring St — EASTBOUND

| | AM | NOON | PM |
|---|---|---|---|
| Left | 1607 | 0 | 1051 |
| U-Turn | 0 | 0 | 0 |
| Thru | 744 | 0 | 1650 |
| Right | 245 | 0 | 34 |

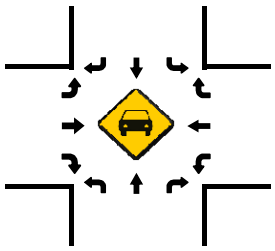
### E Spring St — WESTBOUND

| | PM | NOON | AM |
|---|---|---|---|
| Left | 0 | 0 | 0 |
| Thru | 887 | 0 | 1594 |
| Right | 46 | 0 | 471 |
| U-Turn | 8 | 0 | 2 |
| | 2179 | 0 | 786 |

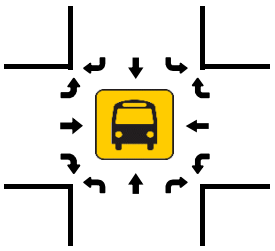
### Kilroy Airport Way — NORTHBOUND

| | Left | Thru | Right | U-Turn | |
|---|---|---|---|---|---|
| PM | 80 | 0 | 164 | 0 | 521 PM |
| NOON | 0 | 0 | 0 | 0 | 0 NOON |
| AM | 716 | 0 | 13 | 0 | 40 AM |

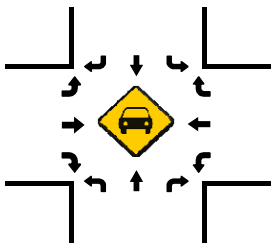
Total Vehicles (AM)



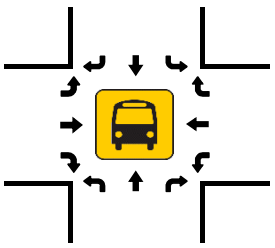
Total Vehicles (AM)



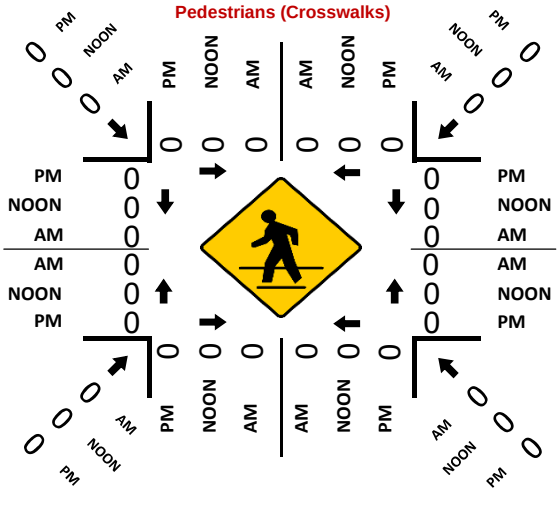
Total Vehicles (NOON)



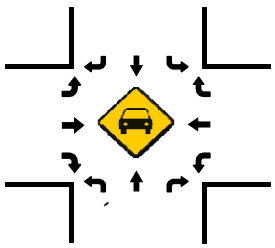
Total Vehicles (NOON)



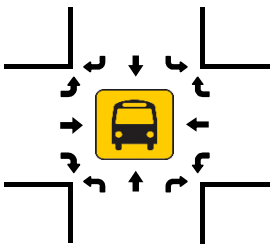
Pedestrians (Crosswalks)



Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

**Location:** Kilroy Airport Way & E Spring St
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05321-019
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | Kilroy Airport Way | | | | Kilroy Airport Way | | | | E Spring St | | | | E Spring St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 2 | 2 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 125 | 36 | 0 | 64 | 284 | 0 | 0 | 516 |
| 7:15 AM | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 149 | 37 | 0 | 85 | 360 | 0 | 0 | 636 |
| 7:30 AM | 1 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 224 | 59 | 0 | 99 | 435 | 0 | 2 | 827 |
| 7:45 AM | 5 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 197 | 76 | 0 | 120 | 429 | 0 | 0 | 837 |
| 8:00 AM | 1 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 143 | 58 | 0 | 136 | 421 | 0 | 0 | 772 |
| 8:15 AM | 6 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 180 | 52 | 0 | 116 | 309 | 0 | 0 | 673 |
| 8:30 AM | 5 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 195 | 57 | 0 | 106 | 350 | 0 | 2 | 724 |
| 8:45 AM | 6 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 151 | 54 | 0 | 108 | 347 | 0 | 1 | 678 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 31 | 0 | 65 | 0 | 0 | 0 | 0 | 0 | 0 | 1364 | 429 | 0 | 834 | 2935 | 0 | 5 | 5663 |
| **APPROACH %'s :** | 32.29% | 0.00% | 67.71% | 0.00% | | | | | 0.00% | 76.07% | 23.93% | 0.00% | 22.10% | 77.77% | 0.00% | 0.13% | |
| **PEAK HR :** | 07:30 AM - 08:30 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 13 | 0 | 40 | 0 | 0 | 0 | 0 | 0 | 0 | 744 | 245 | 0 | 471 | 1594 | 0 | 2 | 3109 |
| **PEAK HR FACTOR :** | 0.542 | 0.000 | 0.769 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.830 | 0.806 | 0.000 | 0.866 | 0.916 | 0.000 | 0.250 | 0.929 |
| | 0.828 | | | | | | | | 0.874 | | | | 0.928 | | | | |

| **PM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 2 | 2 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 35 | 0 | 82 | 0 | 0 | 0 | 0 | 0 | 0 | 349 | 1 | 0 | 12 | 228 | 0 | 1 | 708 |
| 4:15 PM | 36 | 0 | 67 | 0 | 0 | 0 | 0 | 0 | 0 | 357 | 8 | 0 | 12 | 179 | 0 | 1 | 660 |
| 4:30 PM | 37 | 0 | 127 | 0 | 0 | 0 | 0 | 0 | 0 | 432 | 7 | 0 | 12 | 221 | 0 | 1 | 837 |
| 4:45 PM | 25 | 0 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 381 | 6 | 0 | 16 | 191 | 0 | 4 | 703 |
| 5:00 PM | 54 | 0 | 185 | 0 | 0 | 0 | 0 | 0 | 0 | 417 | 9 | 0 | 11 | 232 | 0 | 3 | 911 |
| 5:15 PM | 48 | 0 | 129 | 0 | 0 | 0 | 0 | 0 | 0 | 420 | 12 | 0 | 7 | 243 | 0 | 0 | 859 |
| 5:30 PM | 50 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 368 | 13 | 0 | 15 | 252 | 0 | 0 | 798 |
| 5:45 PM | 30 | 0 | 85 | 0 | 0 | 0 | 0 | 0 | 0 | 310 | 7 | 0 | 6 | 194 | 0 | 2 | 634 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 315 | 0 | 855 | 0 | 0 | 0 | 0 | 0 | 0 | 3034 | 63 | 0 | 91 | 1740 | 0 | 12 | 6110 |
| **APPROACH %'s :** | 26.92% | 0.00% | 73.08% | 0.00% | | | | | 0.00% | 97.97% | 2.03% | 0.00% | 4.94% | 94.41% | 0.00% | 0.65% | |
| **PEAK HR :** | 04:30 PM - 05:30 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 164 | 0 | 521 | 0 | 0 | 0 | 0 | 0 | 0 | 1650 | 34 | 0 | 46 | 887 | 0 | 8 | 3310 |
| **PEAK HR FACTOR :** | 0.759 | 0.000 | 0.704 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.955 | 0.708 | 0.000 | 0.719 | 0.913 | 0.000 | 0.500 | 0.908 |
| | 0.717 | | | | | | | | 0.959 | | | | 0.941 | | | | |

Prepared by National Data & Surveying Services

# N Lakewood Blvd & E Spring St

## Peak Hour Turning Movement Count

**ID:** 18-05321-020
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

**PEAK HOURS**

AM: 07:15 AM - 08:15 AM
NOON: NONE
PM: 04:45 PM - 05:45 PM

**COUNT PERIODS**

AM: 07:00 AM - 09:00 AM
NOON: NONE
PM: 04:00 PM - 06:00 PM

### N Lakewood Blvd — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 571 | 1304 | 239 | 10 | 1799 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 406 | 1586 | 221 | 37 | 2460 | PM |
| | 2 | 3 | 2 | 0 | | |

### E Spring St — EASTBOUND

| AM | NOON | PM | |
|---|---|---|---|
| 2092 | 0 | 966 | |
| 0 | 0 | 0 | 0 |
| 312 | 0 | 672 | 2 |
| 416 | 0 | 1277 | 3 |
| 22 | 0 | 182 | 0 |
| AM | NOON | PM | |

### CONTROL

Signalized

| | | | |
|---|---|---|---|
| TEV | 6359 AM | 0 NOON | 7158 PM |
| PHF | 0.91 | | 0.95 |

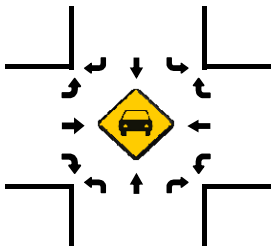
### WESTBOUND — E Spring St

| PM | NOON | AM | |
|---|---|---|---|
| 271 | 0 | 200 | 1 |
| 529 | 0 | 1377 | 3 |
| 246 | 0 | 208 | 2 |
| 0 | 0 | 0 | 0 |
| 1702 | 0 | 930 | |
| PM | NOON | AM | |

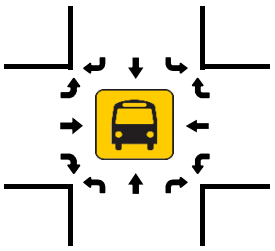
| | | | | | | |
|---|---|---|---|---|---|---|
| | | | 0 | 2 | 4 | 1 |
| PM | 2030 | 16 | 31 | 1480 | 204 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 1538 | 4 | 144 | 1277 | 275 | AM |

### N Lakewood Blvd — NORTHBOUND

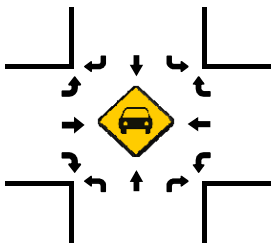
Total Vehicles (AM)



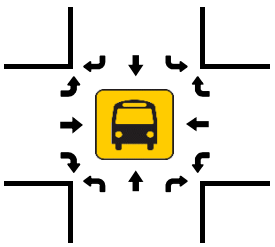
Total Vehicles (AM)



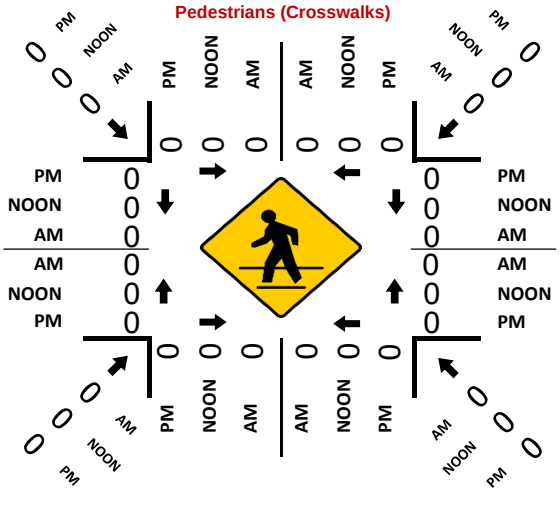
Total Vehicles (NOON)



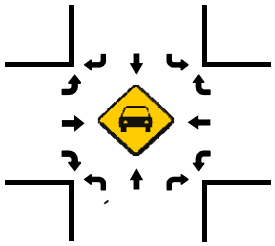
Total Vehicles (NOON)



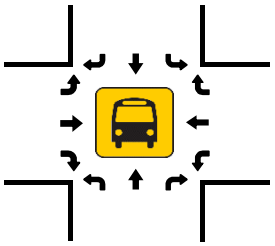
Pedestrians (Crosswalks)




Total Vehicles (PM)



Total Vehicles (PM)



National Data & Surveying Services

# Intersection Turning Movement Count

**Location:** N Lakewood Blvd & E Spring St
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05321-020
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | N Lakewood Blvd | | | | N Lakewood Blvd | | | | E Spring St | | | | E Spring St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 2 | 4 | 1 | 0 | 2 | 3 | 2 | 0 | 2 | 3 | 0 | 0 | 2 | 3 | 1 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 27 | 279 | 48 | 1 | 49 | 287 | 77 | 1 | 42 | 63 | 6 | 0 | 67 | 222 | 31 | 1 | 1201 |
| 7:15 AM | 27 | 285 | 58 | 0 | 60 | 299 | 116 | 2 | 67 | 107 | 7 | 0 | 50 | 328 | 43 | 0 | 1449 |
| 7:30 AM | 22 | 337 | 75 | 4 | 80 | 319 | 158 | 2 | 76 | 120 | 8 | 0 | 56 | 325 | 40 | 0 | 1622 |
| 7:45 AM | 54 | 366 | 87 | 0 | 54 | 324 | 152 | 4 | 98 | 125 | 2 | 0 | 51 | 354 | 69 | 0 | 1740 |
| 8:00 AM | 41 | 289 | 55 | 0 | 45 | 362 | 145 | 2 | 71 | 64 | 5 | 0 | 51 | 370 | 48 | 0 | 1548 |
| 8:15 AM | 55 | 288 | 67 | 0 | 42 | 283 | 107 | 0 | 80 | 111 | 10 | 0 | 50 | 268 | 33 | 0 | 1394 |
| 8:30 AM | 47 | 312 | 53 | 6 | 52 | 315 | 119 | 5 | 63 | 113 | 13 | 0 | 34 | 272 | 37 | 0 | 1441 |
| 8:45 AM | 49 | 275 | 46 | 0 | 48 | 247 | 94 | 1 | 74 | 84 | 11 | 0 | 50 | 330 | 42 | 1 | 1352 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 322 | 2431 | 489 | 11 | 430 | 2436 | 968 | 17 | 571 | 787 | 62 | 0 | 409 | 2469 | 343 | 2 | 11747 |
| **APPROACH %'s :** | 9.90% | 74.73% | 15.03% | 0.34% | 11.17% | 63.26% | 25.14% | 0.44% | 40.21% | 55.42% | 4.37% | 0.00% | 12.69% | 76.61% | 10.64% | 0.06% | |
| **PEAK HR :** | 07:15 AM - 08:15 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 144 | 1277 | 275 | 4 | 239 | 1304 | 571 | 10 | 312 | 416 | 22 | 0 | 208 | 1377 | 200 | 0 | 6359 |
| **PEAK HR FACTOR :** | 0.667 | 0.872 | 0.790 | 0.250 | 0.747 | 0.901 | 0.903 | 0.625 | 0.796 | 0.832 | 0.688 | 0.000 | 0.929 | 0.930 | 0.725 | 0.000 | 0.914 |
| | 0.838 | | | | 0.950 | | | | 0.833 | | | | 0.941 | | | | |

| **PM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2 | 4 | 1 | 0 | 2 | 3 | 2 | 0 | 2 | 3 | 0 | 0 | 2 | 3 | 1 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 4 | 344 | 56 | 1 | 50 | 367 | 86 | 5 | 122 | 275 | 31 | 0 | 65 | 158 | 45 | 0 | 1609 |
| 4:15 PM | 10 | 322 | 43 | 4 | 48 | 359 | 73 | 3 | 124 | 288 | 39 | 0 | 58 | 100 | 48 | 0 | 1519 |
| 4:30 PM | 8 | 311 | 31 | 3 | 54 | 436 | 90 | 7 | 144 | 299 | 56 | 0 | 43 | 131 | 50 | 0 | 1663 |
| 4:45 PM | 7 | 348 | 54 | 6 | 42 | 341 | 79 | 6 | 164 | 314 | 39 | 0 | 60 | 125 | 62 | 0 | 1647 |
| 5:00 PM | 11 | 354 | 46 | 7 | 56 | 412 | 112 | 13 | 159 | 316 | 53 | 0 | 70 | 120 | 82 | 0 | 1811 |
| 5:15 PM | 8 | 379 | 58 | 1 | 57 | 372 | 100 | 8 | 173 | 356 | 50 | 0 | 62 | 128 | 58 | 0 | 1810 |
| 5:30 PM | 5 | 399 | 46 | 2 | 66 | 461 | 115 | 10 | 176 | 291 | 40 | 0 | 54 | 156 | 69 | 0 | 1890 |
| 5:45 PM | 9 | 422 | 54 | 5 | 37 | 322 | 91 | 5 | 130 | 246 | 48 | 0 | 43 | 98 | 48 | 0 | 1558 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 62 | 2879 | 388 | 29 | 410 | 3070 | 746 | 57 | 1192 | 2385 | 356 | 0 | 455 | 1016 | 462 | 0 | 13507 |
| **APPROACH %'s :** | 1.85% | 85.74% | 11.55% | 0.86% | 9.57% | 71.68% | 17.42% | 1.33% | 30.31% | 60.64% | 9.05% | 0.00% | 23.54% | 52.56% | 23.90% | 0.00% | |
| **PEAK HR :** | 04:45 PM - 05:45 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 31 | 1480 | 204 | 16 | 221 | 1586 | 406 | 37 | 672 | 1277 | 182 | 0 | 246 | 529 | 271 | 0 | 7158 |
| **PEAK HR FACTOR :** | 0.705 | 0.927 | 0.879 | 0.571 | 0.837 | 0.860 | 0.883 | 0.712 | 0.955 | 0.897 | 0.858 | 0.000 | 0.879 | 0.848 | 0.826 | 0.000 | 0.947 |
| | 0.957 | | | | 0.863 | | | | 0.920 | | | | 0.937 | | | | |

Prepared by National Data & Surveying Services

# Orange Ave & E 29th St

## Peak Hour Turning Movement Count

**ID:** 18-05322-004
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:15 AM - 08:15 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 05:00 PM - 06:00 PM | 04:00 PM - 06:00 PM |

### Orange Ave — SOUTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 0 | 659 | 33 | 0 | 645 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 0 | 690 | 10 | 2 | 679 | PM |

### E 29th St — EASTBOUND

| AM | NOON | PM | |
|---|---|---|---|
| 0 | 0 | 0 | ⇦ |
| 0 | 0 | 0 | ↶ 0 |
| 0 | 0 | 0 | ↱ 0 |
| 0 | 0 | 0 | → 0 |
| 0 | 0 | 0 | ↷ 0 |

### WESTBOUND — E 29th St

| PM | NOON | AM | |
|---|---|---|---|
| 48 | 0 | 33 | ↶ 0 |
| 0 | 0 | 0 | ← 1 |
| 2 | 0 | 2 | ↰ 0 |
| 0 | 0 | 0 | ↷ 0 |
| 16 | 0 | 41 | ⇨ |

### CONTROL

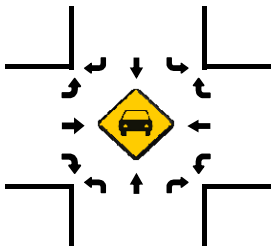
1-Way Stop(WB)

| | | | |
|---|---|---|---|
| TEV | 1347 AM | 0 NOON | 1387 PM |
| PHF | 0.94 | | 0.93 |

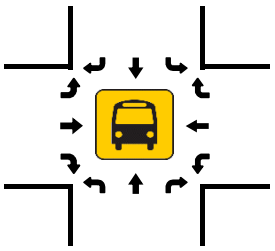
### Orange Ave — NORTHBOUND

| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 692 | 0 | 0 | 629 | 6 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 661 | 0 | 0 | 612 | 8 | AM |

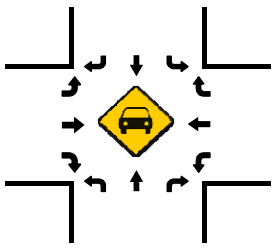
Total Vehicles (AM)



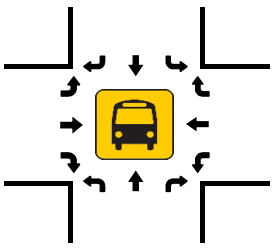
Total Vehicles (AM)



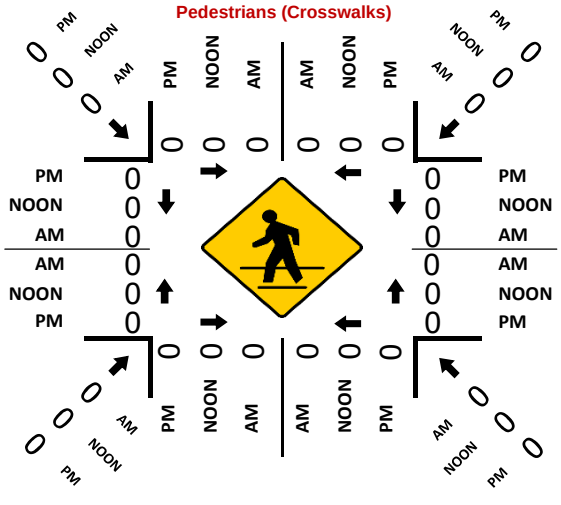
Total Vehicles (NOON)



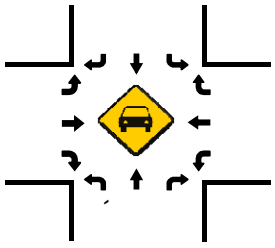
Total Vehicles (NOON)



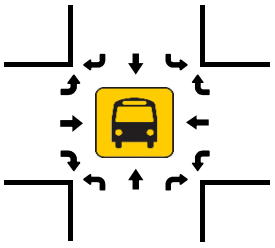
Pedestrians (Crosswalks)




Total Vehicles (PM)



Total Vehicles (PM)



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** Orange Ave & E 29th St
**City:** Long Beach
**Control:** 1-Way Stop(WB)

**Project ID:** 18-05322-004
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | Orange Ave | | | | Orange Ave | | | | E 29th St | | | | E 29th St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 0 | 112 | 1 | 0 | 6 | 120 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 245 |
| 7:15 AM | 0 | 131 | 1 | 0 | 8 | 152 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 303 |
| 7:30 AM | 0 | 150 | 3 | 0 | 8 | 166 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 12 | 0 | 340 |
| 7:45 AM | 0 | 167 | 1 | 0 | 11 | 177 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 359 |
| 8:00 AM | 0 | 164 | 3 | 0 | 6 | 164 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 7 | 0 | 345 |
| 8:15 AM | 0 | 145 | 4 | 0 | 8 | 139 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 303 |
| 8:30 AM | 0 | 162 | 1 | 0 | 6 | 111 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 290 |
| 8:45 AM | 0 | 136 | 2 | 0 | 8 | 133 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 7 | 0 | 287 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 0 | 1167 | 16 | 0 | 61 | 1162 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 63 | 0 | 2472 |
| **APPROACH %'s :** | 0.00% | 98.65% | 1.35% | 0.00% | 4.99% | 95.01% | 0.00% | 0.00% | | | | | 4.55% | 0.00% | 95.45% | 0.00% | |
| **PEAK HR :** | 07:15 AM - 08:15 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 0 | 612 | 8 | 0 | 33 | 659 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 33 | 0 | 1347 |
| **PEAK HR FACTOR :** | 0.000 | 0.916 | 0.667 | 0.000 | 0.750 | 0.931 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | 0.688 | 0.000 | 0.938 |
| | | 0.923 | | | | 0.920 | | | | | | | | 0.673 | | | |

| PM | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 0 | 165 | 4 | 0 | 8 | 176 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 15 | 0 | 369 |
| 4:15 PM | 0 | 155 | 1 | 0 | 9 | 171 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 344 |
| 4:30 PM | 0 | 141 | 3 | 0 | 3 | 139 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 17 | 0 | 305 |
| 4:45 PM | 0 | 162 | 0 | 0 | 2 | 163 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 8 | 0 | 338 |
| 5:00 PM | 0 | 164 | 3 | 0 | 4 | 180 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 22 | 0 | 374 |
| 5:15 PM | 0 | 155 | 0 | 0 | 2 | 166 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 11 | 0 | 336 |
| 5:30 PM | 0 | 157 | 1 | 0 | 1 | 158 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 328 |
| 5:45 PM | 0 | 153 | 2 | 0 | 3 | 186 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 349 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 0 | 1252 | 14 | 0 | 32 | 1339 | 0 | 2 | 0 | 0 | 0 | 0 | 8 | 0 | 96 | 0 | 2743 |
| **APPROACH %'s :** | 0.00% | 98.89% | 1.11% | 0.00% | 2.33% | 97.52% | 0.00% | 0.15% | | | | | 7.69% | 0.00% | 92.31% | 0.00% | |
| **PEAK HR :** | 05:00 PM - 06:00 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 0 | 629 | 6 | 0 | 10 | 690 | 0 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | 48 | 0 | 1387 |
| **PEAK HR FACTOR :** | 0.000 | 0.959 | 0.500 | 0.000 | 0.625 | 0.927 | 0.000 | 0.500 | 0.000 | 0.000 | 0.000 | 0.000 | 0.500 | 0.000 | 0.545 | 0.000 | 0.927 |
| | | 0.951 | | | | 0.929 | | | | | | | | 0.543 | | | |

Prepared by National Data & Surveying Services

# California Ave & E Willow St

## Peak Hour Turning Movement Count

**ID:** 18-05322-005
**City:** Long Beach

**Day:** Wednesday
**Date:** 05/09/2018

| PEAK HOURS | COUNT PERIODS |
|---|---|
| 07:30 AM - 08:30 AM | 07:00 AM - 09:00 AM |
| NONE | NONE |
| 04:30 PM - 05:30 PM | 04:00 PM - 06:00 PM |

### SOUTHBOUND — California Ave

| | | | | | | |
|---|---|---|---|---|---|---|
| AM | 92 | 99 | 36 | 0 | 310 | AM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| PM | 72 | 136 | 67 | 0 | 305 | PM |

### EASTBOUND — E Willow St

| AM | NOON | PM | |
|---|---|---|---|
| 1422 | 0 | 1221 | |
| 0 | 0 | 0 | 0 |
| 88 | 0 | 121 | 1 |
| 1039 | 0 | 1454 | 3 |
| 28 | 0 | 53 | 0 |

### WESTBOUND — E Willow St

| | PM | NOON | AM |
|---|---|---|---|
| 0 | 76 | 0 | 56 |
| 3 | 1118 | 0 | 1295 |
| 1 | 41 | 0 | 25 |
| 0 | 0 | 0 | 1 |
| | 1561 | 0 | 1121 |

### NORTHBOUND — California Ave

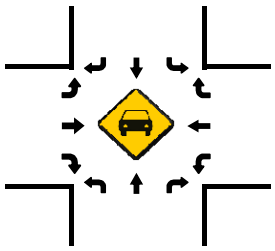
| | | | | | | |
|---|---|---|---|---|---|---|
| PM | 230 | 0 | 31 | 108 | 40 | PM |
| NOON | 0 | 0 | 0 | 0 | 0 | NOON |
| AM | 152 | 0 | 35 | 166 | 45 | AM |

| | | | | |
|---|---|---|---|---|
| 1 | 1 | 0 | 0 | |
| | | 0 | 0 | 1 | 0 |

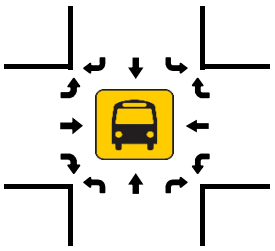
**CONTROL:** Signalized

| | | | |
|---|---|---|---|
| TEV | 3005 AM | 0 NOON | 3317 PM |
| PHF | 0.91 | | 0.88 |

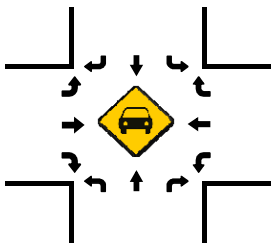
Total Vehicles (AM)



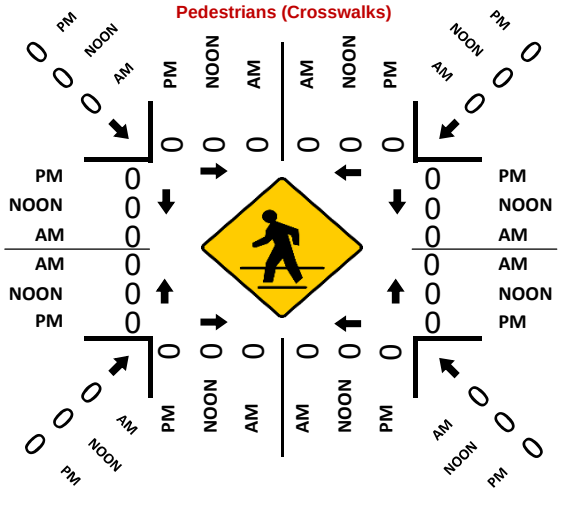
Total Vehicles (AM)



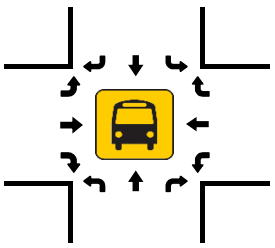
Total Vehicles (NOON)



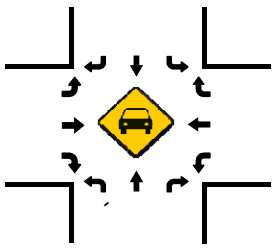
Pedestrians (Crosswalks)



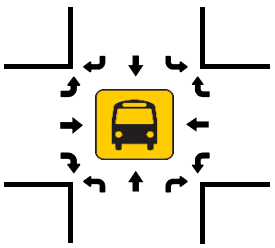
Total Vehicles (NOON)



Total Vehicles (PM)



Total Vehicles (PM)



# National Data & Surveying Services Intersection Turning Movement Count

**Location:** California Ave & E Willow St
**City:** Long Beach
**Control:** Signalized

**Project ID:** 18-05322-005
**Date:** 5/9/2018

**Total**

| NS/EW Streets: | California Ave | | | | California Ave | | | | E Willow St | | | | E Willow St | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AM** | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
| | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 3 | 0 | 0 | 1 | 3 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 7:00 AM | 6 | 20 | 7 | 0 | 5 | 15 | 19 | 0 | 9 | 158 | 9 | 0 | 9 | 243 | 5 | 0 | 505 |
| 7:15 AM | 9 | 25 | 11 | 0 | 8 | 26 | 19 | 0 | 19 | 239 | 5 | 1 | 7 | 273 | 17 | 0 | 659 |
| 7:30 AM | 2 | 43 | 10 | 0 | 7 | 40 | 24 | 0 | 12 | 260 | 5 | 0 | 6 | 324 | 12 | 0 | 745 |
| 7:45 AM | 17 | 58 | 12 | 0 | 8 | 21 | 28 | 0 | 33 | 268 | 6 | 0 | 7 | 350 | 15 | 1 | 824 |
| 8:00 AM | 11 | 31 | 12 | 0 | 8 | 21 | 19 | 0 | 18 | 245 | 7 | 0 | 7 | 305 | 13 | 0 | 697 |
| 8:15 AM | 5 | 34 | 11 | 0 | 13 | 17 | 21 | 0 | 25 | 266 | 10 | 0 | 5 | 316 | 16 | 0 | 739 |
| 8:30 AM | 13 | 35 | 11 | 0 | 11 | 15 | 13 | 0 | 15 | 243 | 5 | 0 | 8 | 280 | 21 | 0 | 670 |
| 8:45 AM | 7 | 24 | 6 | 0 | 10 | 16 | 11 | 0 | 16 | 212 | 5 | 1 | 9 | 260 | 15 | 0 | 592 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 70 | 270 | 80 | 0 | 70 | 171 | 154 | 0 | 147 | 1891 | 52 | 2 | 58 | 2351 | 114 | 1 | 5431 |
| **APPROACH %'s :** | 16.67% | 64.29% | 19.05% | 0.00% | 17.72% | 43.29% | 38.99% | 0.00% | 7.03% | 90.39% | 2.49% | 0.10% | 2.30% | 93.15% | 4.52% | 0.04% | |
| **PEAK HR :** | 07:30 AM - 08:30 AM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 35 | 166 | 45 | 0 | 36 | 99 | 92 | 0 | 88 | 1039 | 28 | 0 | 25 | 1295 | 56 | 1 | 3005 |
| **PEAK HR FACTOR :** | 0.515 | 0.716 | 0.938 | 0.000 | 0.692 | 0.619 | 0.821 | 0.000 | 0.667 | 0.969 | 0.700 | 0.000 | 0.893 | 0.925 | 0.875 | 0.250 | 0.912 |
| | 0.707 | | | | 0.799 | | | | 0.941 | | | | 0.923 | | | | |

| PM | NORTHBOUND | | | | SOUTHBOUND | | | | EASTBOUND | | | | WESTBOUND | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 3 | 0 | 0 | 1 | 3 | 0 | 0 | |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| 4:00 PM | 12 | 38 | 7 | 0 | 14 | 47 | 40 | 0 | 18 | 337 | 14 | 1 | 19 | 271 | 10 | 2 | 830 |
| 4:15 PM | 6 | 26 | 6 | 0 | 10 | 39 | 25 | 0 | 29 | 325 | 8 | 0 | 13 | 291 | 10 | 2 | 790 |
| 4:30 PM | 10 | 32 | 13 | 0 | 22 | 30 | 17 | 0 | 21 | 380 | 16 | 0 | 4 | 252 | 18 | 0 | 815 |
| 4:45 PM | 6 | 15 | 9 | 0 | 14 | 30 | 21 | 0 | 26 | 344 | 4 | 0 | 16 | 265 | 23 | 0 | 773 |
| 5:00 PM | 7 | 30 | 6 | 0 | 13 | 39 | 17 | 0 | 27 | 357 | 14 | 0 | 8 | 256 | 17 | 0 | 791 |
| 5:15 PM | 8 | 31 | 12 | 0 | 18 | 37 | 17 | 0 | 47 | 373 | 19 | 0 | 13 | 345 | 18 | 0 | 938 |
| 5:30 PM | 13 | 33 | 16 | 0 | 13 | 33 | 22 | 0 | 25 | 331 | 19 | 2 | 9 | 244 | 19 | 0 | 779 |
| 5:45 PM | 6 | 23 | 7 | 0 | 9 | 35 | 21 | 0 | 26 | 356 | 18 | 0 | 12 | 248 | 15 | 0 | 776 |
| | NL | NT | NR | NU | SL | ST | SR | SU | EL | ET | ER | EU | WL | WT | WR | WU | TOTAL |
| **TOTAL VOLUMES :** | 68 | 228 | 76 | 0 | 113 | 290 | 180 | 0 | 219 | 2803 | 112 | 3 | 94 | 2172 | 130 | 4 | 6492 |
| **APPROACH %'s :** | 18.28% | 61.29% | 20.43% | 0.00% | 19.38% | 49.74% | 30.87% | 0.00% | 6.98% | 89.35% | 3.57% | 0.10% | 3.92% | 90.50% | 5.42% | 0.17% | |
| **PEAK HR :** | 04:30 PM - 05:30 PM | | | | | | | | | | | | | | | | TOTAL |
| **PEAK HR VOL :** | 31 | 108 | 40 | 0 | 67 | 136 | 72 | 0 | 121 | 1454 | 53 | 0 | 41 | 1118 | 76 | 0 | 3317 |
| **PEAK HR FACTOR :** | 0.775 | 0.844 | 0.769 | 0.000 | 0.761 | 0.872 | 0.857 | 0.000 | 0.644 | 0.957 | 0.697 | 0.000 | 0.641 | 0.810 | 0.826 | 0.000 | 0.884 |
| | 0.814 | | | | 0.955 | | | | 0.927 | | | | 0.821 | | | | |

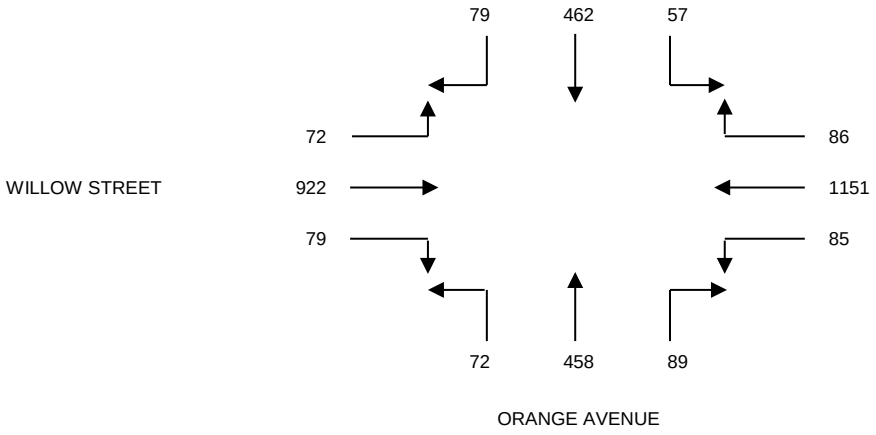
# INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: LLG - PASADENA
PROJECT: SIGNAL HILL HERITAGE SQUARE
DATE: TUESDAY, MARCH 27, 2018
PERIOD: 07:00 AM TO 09:00 AM
INTERSECTION: N/S ORANGE AVENUE
E/W WILLOW STREET
FILE NUMBER: 1-AM

| 15 MINUTE TOTALS | 1 SBRT | 2 SBTH | 3 SBLT | 4 WBRT | 5 WBTH | 6 WBLT | 7 NBRT | 8 NBTH | 9 NBLT | 10 EBRT | 11 EBTH | 12 EBLT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0700-0715 | 8 | 85 | 11 | 6 | 212 | 8 | 22 | 85 | 14 | 13 | 157 | 18 |
| 0715-0730 | 13 | 116 | 12 | 10 | 245 | 13 | 21 | 105 | 19 | 15 | 207 | 17 |
| 0730-0745 | 21 | 131 | 11 | 19 | 289 | 23 | 19 | 128 | 16 | 22 | 206 | 14 |
| 0745-0800 | 24 | 114 | 10 | 17 | 326 | 18 | 23 | 131 | 25 | 20 | 277 | 21 |
| 0800-0815 | 18 | 113 | 15 | 21 | 273 | 20 | 25 | 107 | 18 | 20 | 223 | 22 |
| 0815-0830 | 16 | 104 | 21 | 29 | 263 | 24 | 22 | 92 | 13 | 17 | 216 | 15 |
| 0830-0845 | 12 | 90 | 16 | 22 | 239 | 20 | 17 | 77 | 15 | 11 | 191 | 17 |
| 0845-0900 | 18 | 103 | 19 | 10 | 244 | 23 | 21 | 78 | 18 | 13 | 194 | 18 |

| 1 HOUR TOTALS | 1 SBRT | 2 SBTH | 3 SBLT | 4 WBRT | 5 WBTH | 6 WBLT | 7 NBRT | 8 NBTH | 9 NBLT | 10 EBRT | 11 EBTH | 12 EBLT | TOTALS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0700-0800 | 66 | 446 | 44 | 52 | 1072 | 62 | 85 | 449 | 74 | 70 | 847 | 70 | 3337 |
| 0715-0815 | 76 | 474 | 48 | 67 | 1133 | 74 | 88 | 471 | 78 | 77 | 913 | 74 | 3573 |
| 0730-0830 | 79 | 462 | 57 | 86 | 1151 | 85 | 89 | 458 | 72 | 79 | 922 | 72 | 3612 |
| 0745-0845 | 70 | 421 | 62 | 89 | 1101 | 82 | 87 | 407 | 71 | 68 | 907 | 75 | 3440 |
| 0800-0900 | 64 | 410 | 71 | 82 | 1019 | 87 | 85 | 354 | 64 | 61 | 824 | 72 | 3193 |

A.M. PEAK HOUR
0730-0830



# INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: LLG - PASADENA
PROJECT: SIGNAL HILL HERITAGE SQUARE
DATE: TUESDAY, MARCH 27, 2018
PERIOD: 04:00 PM TO 06:00 PM
INTERSECTION: N/S ORANGE AVENUE
E/W WILLOW STREET
FILE NUMBER: 1-PM

| 15 MINUTE TOTALS | 1 SBRT | 2 SBTH | 3 SBLT | 4 WBRT | 5 WBTH | 6 WBLT | 7 NBRT | 8 NBTH | 9 NBLT | 10 EBRT | 11 EBTH | 12 EBLT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0400-0415 | 22 | 129 | 29 | 26 | 286 | 24 | 25 | 105 | 18 | 20 | 346 | 25 |
| 0415-0430 | 20 | 108 | 27 | 23 | 245 | 29 | 31 | 107 | 10 | 21 | 308 | 20 |
| 0430-0445 | 21 | 139 | 22 | 20 | 270 | 28 | 28 | 121 | 13 | 27 | 363 | 33 |
| 0445-0500 | 18 | 110 | 17 | 15 | 224 | 22 | 22 | 166 | 10 | 24 | 306 | 20 |
| 0500-0515 | 16 | 127 | 13 | 19 | 287 | 24 | 24 | 120 | 19 | 18 | 334 | 27 |
| 0515-0530 | 21 | 143 | 12 | 16 | 303 | 32 | 23 | 116 | 18 | 22 | 403 | 38 |
| 0530-0545 | 20 | 121 | 17 | 11 | 250 | 33 | 25 | 95 | 16 | 17 | 336 | 24 |
| 0545-0600 | 26 | 120 | 12 | 17 | 261 | 46 | 27 | 82 | 17 | 21 | 331 | 21 |

| 1 HOUR TOTALS | 1 SBRT | 2 SBTH | 3 SBLT | 4 WBRT | 5 WBTH | 6 WBLT | 7 NBRT | 8 NBTH | 9 NBLT | 10 EBRT | 11 EBTH | 12 EBLT | TOTALS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0400-0500 | 81 | 486 | 95 | 84 | 1025 | 103 | 106 | 499 | 51 | 92 | 1323 | 98 | 4043 |
| 0415-0515 | 75 | 484 | 79 | 77 | 1026 | 103 | 105 | 514 | 52 | 90 | 1311 | 100 | 4016 |
| 0430-0530 | 76 | 519 | 64 | 70 | 1084 | 106 | 97 | 523 | 60 | 91 | 1406 | 118 | 4214 |
| 0445-0545 | 75 | 501 | 59 | 61 | 1064 | 111 | 94 | 497 | 63 | 81 | 1379 | 109 | 4094 |
| 0500-0600 | 83 | 511 | 54 | 63 | 1101 | 135 | 99 | 413 | 70 | 78 | 1404 | 110 | 4121 |

P.M. PEAK HOUR
0430-0530

# PEDESTRIAN - BICYCLE COUNT SUMMARY

CLIENT: LLG - PASADENA

PROJECT: SIGNAL HILL HERITAGE SQUARE

DATE: TUESDAY, MARCH 27, 2018

PERIOD: 07:00 AM TO 09:00 AM

INTERSECTION: ORANGE AVENUE / WILLOW STREET

FILE: 1AMPED-BIKE

| | PEDESTRIAN MOVEMENTS | | | |
|---|---|---|---|---|
| 15-MINUTE PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D |
| 0700-0715 | 0 | 0 | 1 | 0 |
| 0715-0730 | 0 | 0 | 1 | 0 |
| 0730-0745 | 0 | 0 | 4 | 2 |
| 0745-0800 | 1 | 1 | 0 | 0 |
| 0800-0815 | 1 | 0 | 3 | 2 |
| 0815-0830 | 0 | 0 | 1 | 0 |
| 0830-0845 | 0 | 1 | 0 | 0 |
| 0845-0900 | 1 | 2 | 1 | 0 |

| | BICYCLIST MOVEMENTS | | | |
|---|---|---|---|---|
| 15-MINUTE PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D |
| 0700-0715 | 0 | 0 | 0 | 0 |
| 0715-0730 | 0 | 0 | 0 | 0 |
| 0730-0745 | 0 | 0 | 0 | 0 |
| 0745-0800 | 0 | 0 | 1 | 1 |
| 0800-0815 | 0 | 0 | 1 | 0 |
| 0815-0830 | 1 | 0 | 0 | 0 |
| 0830-0845 | 0 | 0 | 1 | 0 |
| 0845-0900 | 0 | 0 | 1 | 0 |

| | PEDESTRIAN MOVEMENTS | | | | |
|---|---|---|---|---|---|
| 1-HOUR PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D | TOTALS |
| 0700-0800 | 1 | 1 | 6 | 2 | 10 |
| 0715-0815 | 2 | 1 | 8 | 4 | 15 |
| 0730-0830 | 2 | 1 | 8 | 4 | 15 |
| 0745-0845 | 2 | 2 | 4 | 2 | 10 |
| 0800-0900 | 2 | 3 | 5 | 2 | 12 |

| | BICYCLIST MOVEMENTS | | | | |
|---|---|---|---|---|---|
| 1-HOUR PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D | TOTALS |
| 0700-0800 | 0 | 0 | 1 | 1 | 2 |
| 0715-0815 | 0 | 0 | 2 | 1 | 3 |
| 0730-0830 | 1 | 0 | 2 | 1 | 4 |
| 0745-0845 | 1 | 0 | 3 | 1 | 5 |
| 0800-0900 | 1 | 0 | 3 | 0 | 4 |

# PEDESTRIAN - BICYCLE COUNT SUMMARY

CLIENT: LLG - PASADENA

PROJECT: SIGNAL HILL HERITAGE SQUARE

DATE: TUESDAY, MARCH 27, 2018

PERIOD: 04:00 PM TO 06:00 PM

INTERSECTION: ORANGE AVENUE / WILLOW STREET

FILE: 1PMPED-BIKE

| | PEDESTRIAN MOVEMENTS | | | |
|---|---|---|---|---|
| 15-MINUTE PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D |
| 0400-0415 | 0 | 0 | 0 | 3 |
| 0415-0430 | 0 | 0 | 1 | 0 |
| 0430-0445 | 2 | 0 | 1 | 2 |
| 0445-0500 | 0 | 0 | 3 | 0 |
| 0500-0515 | 0 | 0 | 2 | 3 |
| 0515-0530 | 1 | 1 | 6 | 1 |
| 0530-0545 | 0 | 0 | 4 | 0 |
| 0545-0600 | 0 | 1 | 1 | 1 |

| | BICYCLIST MOVEMENTS | | | |
|---|---|---|---|---|
| 15-MINUTE PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D |
| 0400-0415 | 0 | 0 | 0 | 0 |
| 0415-0430 | 1 | 0 | 1 | 0 |
| 0430-0445 | 1 | 0 | 0 | 0 |
| 0445-0500 | 0 | 0 | 0 | 0 |
| 0500-0515 | 1 | 0 | 0 | 0 |
| 0515-0530 | 2 | 0 | 2 | 0 |
| 0530-0545 | 1 | 0 | 0 | 0 |
| 0545-0600 | 1 | 0 | 0 | 0 |

| | PEDESTRIAN MOVEMENTS | | | | |
|---|---|---|---|---|---|
| 1-HOUR PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D | TOTALS |
| 0400-0500 | 2 | 0 | 5 | 5 | 12 |
| 0415-0515 | 2 | 0 | 7 | 5 | 14 |
| 0430-0530 | 3 | 1 | 12 | 6 | 22 |
| 0445-0545 | 1 | 1 | 15 | 4 | 21 |
| 0500-0600 | 1 | 2 | 13 | 5 | 21 |

| | BICYCLIST MOVEMENTS | | | | |
|---|---|---|---|---|---|
| 1-HOUR PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D | TOTALS |
| 0400-0500 | 2 | 0 | 1 | 0 | 3 |
| 0415-0515 | 3 | 0 | 1 | 0 | 4 |
| 0430-0530 | 4 | 0 | 2 | 0 | 6 |
| 0445-0545 | 4 | 0 | 2 | 0 | 6 |
| 0500-0600 | 5 | 0 | 2 | 0 | 7 |

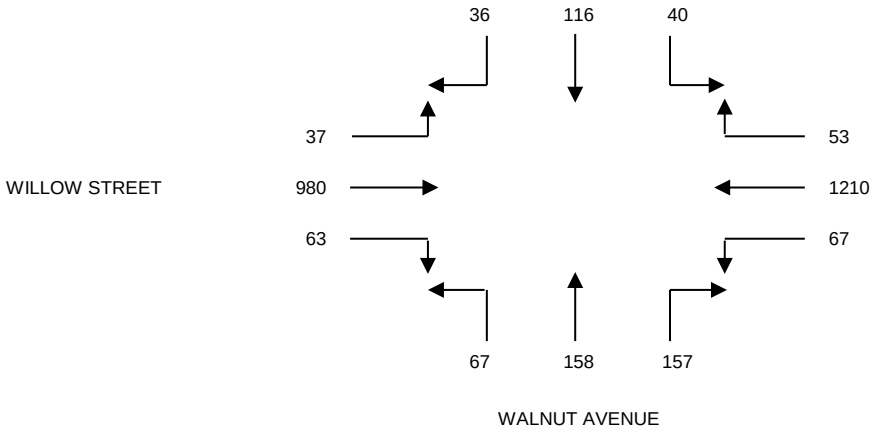
# INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: LLG - PASADENA
PROJECT: SIGNAL HILL HERITAGE SQUARE
DATE: TUESDAY, MARCH 27, 2018
PERIOD: 07:00 AM TO 09:00 AM
INTERSECTION: N/S WALNUT AVENUE
E/W WILLOW STREET
FILE NUMBER: 2-AM

| 15 MINUTE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOTALS | SBRT | SBTH | SBLT | WBRT | WBTH | WBLT | NBRT | NBTH | NBLT | EBRT | EBTH | EBLT |
| 0700-0715 | 3 | 19 | 2 | 11 | 231 | 14 | 32 | 25 | 9 | 3 | 154 | 9 |
| 0715-0730 | 6 | 21 | 6 | 9 | 255 | 10 | 31 | 34 | 16 | 8 | 233 | 12 |
| 0730-0745 | 9 | 41 | 9 | 10 | 293 | 17 | 46 | 50 | 20 | 19 | 221 | 9 |
| 0745-0800 | 9 | 32 | 7 | 15 | 332 | 18 | 40 | 45 | 19 | 16 | 254 | 12 |
| 0800-0815 | 9 | 23 | 13 | 14 | 329 | 18 | 46 | 36 | 14 | 12 | 256 | 9 |
| 0815-0830 | 9 | 20 | 11 | 14 | 256 | 14 | 25 | 27 | 14 | 16 | 249 | 7 |
| 0830-0845 | 8 | 26 | 10 | 10 | 270 | 14 | 37 | 38 | 15 | 11 | 226 | 8 |
| 0845-0900 | 7 | 23 | 12 | 9 | 257 | 19 | 33 | 34 | 17 | 12 | 213 | 5 |

| 1 HOUR | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TOTALS | SBRT | SBTH | SBLT | WBRT | WBTH | WBLT | NBRT | NBTH | NBLT | EBRT | EBTH | EBLT | TOTALS |
| 0700-0800 | 27 | 113 | 24 | 45 | 1111 | 59 | 149 | 154 | 64 | 46 | 862 | 42 | 2696 |
| 0715-0815 | 33 | 117 | 35 | 48 | 1209 | 63 | 163 | 165 | 69 | 55 | 964 | 42 | 2963 |
| 0730-0830 | 36 | 116 | 40 | 53 | 1210 | 67 | 157 | 158 | 67 | 63 | 980 | 37 | 2984 |
| 0745-0845 | 35 | 101 | 41 | 53 | 1187 | 64 | 148 | 146 | 62 | 55 | 985 | 36 | 2913 |
| 0800-0900 | 33 | 92 | 46 | 47 | 1112 | 65 | 141 | 135 | 60 | 51 | 944 | 29 | 2755 |

A.M. PEAK HOUR
0730-0830



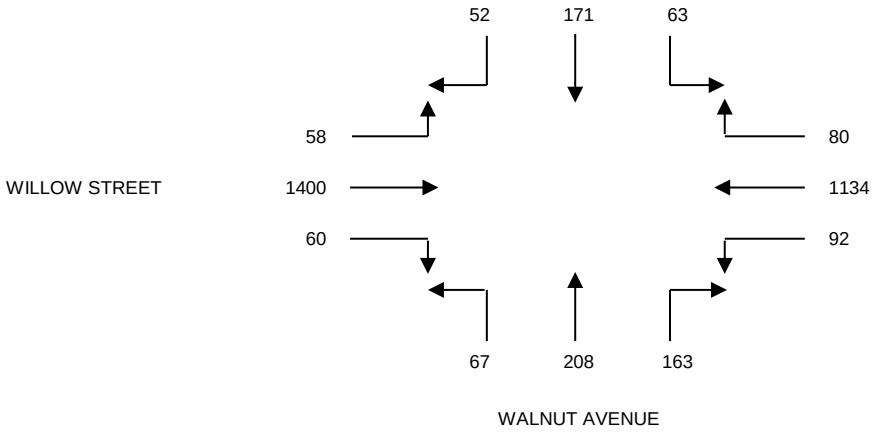
# INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: LLG - PASADENA
PROJECT: SIGNAL HILL HERITAGE SQUARE
DATE: TUESDAY, MARCH 27, 2018
PERIOD: 04:00 PM TO 06:00 PM
INTERSECTION: N/S WALNUT AVENUE
E/W WILLOW STREET
FILE NUMBER: 2-PM

| 15 MINUTE TOTALS | 1 SBRT | 2 SBTH | 3 SBLT | 4 WBRT | 5 WBTH | 6 WBLT | 7 NBRT | 8 NBTH | 9 NBLT | 10 EBRT | 11 EBTH | 12 EBLT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0400-0415 | 17 | 35 | 27 | 5 | 329 | 22 | 41 | 63 | 18 | 15 | 338 | 11 |
| 0415-0430 | 13 | 33 | 23 | 10 | 293 | 15 | 41 | 50 | 17 | 19 | 354 | 15 |
| 0430-0445 | 8 | 35 | 20 | 15 | 227 | 19 | 49 | 59 | 22 | 19 | 362 | 15 |
| 0445-0500 | 11 | 30 | 22 | 17 | 280 | 17 | 33 | 40 | 14 | 13 | 323 | 12 |
| 0500-0515 | 17 | 43 | 18 | 17 | 307 | 25 | 46 | 42 | 21 | 19 | 320 | 14 |
| 0515-0530 | 15 | 47 | 14 | 23 | 296 | 21 | 33 | 50 | 16 | 11 | 388 | 15 |
| 0530-0545 | 12 | 44 | 17 | 23 | 260 | 25 | 49 | 63 | 19 | 16 | 356 | 19 |
| 0545-0600 | 8 | 37 | 14 | 17 | 271 | 21 | 35 | 53 | 11 | 14 | 336 | 10 |

| 1 HOUR TOTALS | 1 SBRT | 2 SBTH | 3 SBLT | 4 WBRT | 5 WBTH | 6 WBLT | 7 NBRT | 8 NBTH | 9 NBLT | 10 EBRT | 11 EBTH | 12 EBLT | TOTALS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0400-0500 | 49 | 133 | 92 | 47 | 1129 | 73 | 164 | 212 | 71 | 66 | 1377 | 53 | 3466 |
| 0415-0515 | 49 | 141 | 83 | 59 | 1107 | 76 | 169 | 191 | 74 | 70 | 1359 | 56 | 3434 |
| 0430-0530 | 51 | 155 | 74 | 72 | 1110 | 82 | 161 | 191 | 73 | 62 | 1393 | 56 | 3480 |
| 0445-0545 | 55 | 164 | 71 | 80 | 1143 | 88 | 161 | 195 | 70 | 59 | 1387 | 60 | 3533 |
| 0500-0600 | 52 | 171 | 63 | 80 | 1134 | 92 | 163 | 208 | 67 | 60 | 1400 | 58 | 3548 |

P.M. PEAK HOUR
0500-0600



# PEDESTRIAN - BICYCLE COUNT SUMMARY

CLIENT: LLG - PASADENA

PROJECT: SIGNAL HILL HERITAGE SQUARE

DATE: TUESDAY, MARCH 27, 2018

PERIOD: 07:00 AM TO 09:00 AM

INTERSECTION: WALNUT AVENUE / WILLOW STREET

FILE: 2AMPED-BIKE

| | PEDESTRIAN MOVEMENTS | | | |
|---|---|---|---|---|
| 15-MINUTE PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D |
| 0700-0715 | 0 | 0 | 0 | 0 |
| 0715-0730 | 1 | 0 | 3 | 3 |
| 0730-0745 | 2 | 0 | 4 | 0 |
| 0745-0800 | 1 | 0 | 0 | 0 |
| 0800-0815 | 0 | 1 | 0 | 0 |
| 0815-0830 | 0 | 0 | 1 | 0 |
| 0830-0845 | 1 | 0 | 0 | 0 |
| 0845-0900 | 1 | 1 | 2 | 0 |

| | BICYCLIST MOVEMENTS | | | |
|---|---|---|---|---|
| 15-MINUTE PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D |
| 0700-0715 | 0 | 0 | 0 | 0 |
| 0715-0730 | 0 | 0 | 0 | 0 |
| 0730-0745 | 0 | 0 | 0 | 0 |
| 0745-0800 | 0 | 0 | 1 | 0 |
| 0800-0815 | 0 | 0 | 0 | 0 |
| 0815-0830 | 0 | 0 | 2 | 0 |
| 0830-0845 | 1 | 0 | 0 | 0 |
| 0845-0900 | 0 | 0 | 1 | 0 |

| | PEDESTRIAN MOVEMENTS | | | | |
|---|---|---|---|---|---|
| 1-HOUR PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D | TOTALS |
| 0700-0800 | 4 | 0 | 7 | 3 | 14 |
| 0715-0815 | 4 | 1 | 7 | 3 | 15 |
| 0730-0830 | 3 | 1 | 5 | 0 | 9 |
| 0745-0845 | 2 | 1 | 1 | 0 | 4 |
| 0800-0900 | 2 | 2 | 3 | 0 | 7 |

| | BICYCLIST MOVEMENTS | | | | |
|---|---|---|---|---|---|
| 1-HOUR PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D | TOTALS |
| 0700-0800 | 0 | 0 | 1 | 0 | 1 |
| 0715-0815 | 0 | 0 | 1 | 0 | 1 |
| 0730-0830 | 0 | 0 | 3 | 0 | 3 |
| 0745-0845 | 1 | 0 | 3 | 0 | 4 |
| 0800-0900 | 1 | 0 | 3 | 0 | 4 |

# PEDESTRIAN - BICYCLE COUNT SUMMARY

CLIENT: LLG - PASADENA

PROJECT: SIGNAL HILL HERITAGE SQUARE

DATE: TUESDAY, MARCH 27, 2018

PERIOD: 04:00 PM TO 06:00 PM

INTERSECTION: WALNUT AVENUE / WILLOW STREET

FILE: 2PMPED-BIKE

| | PEDESTRIAN MOVEMENTS | | | |
|---|---|---|---|---|
| 15-MINUTE PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D |
| 0400-0415 | 0 | 0 | 0 | 0 |
| 0415-0430 | 0 | 0 | 0 | 0 |
| 0430-0445 | 0 | 0 | 4 | 0 |
| 0445-0500 | 0 | 0 | 4 | 0 |
| 0500-0515 | 0 | 0 | 2 | 0 |
| 0515-0530 | 0 | 0 | 2 | 0 |
| 0530-0545 | 1 | 0 | 6 | 1 |
| 0545-0600 | 0 | 0 | 2 | 0 |

| | BICYCLIST MOVEMENTS | | | |
|---|---|---|---|---|
| 15-MINUTE PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D |
| 0400-0415 | 1 | 0 | 0 | 3 |
| 0415-0430 | 0 | 1 | 1 | 1 |
| 0430-0445 | 1 | 0 | 0 | 0 |
| 0445-0500 | 0 | 1 | 0 | 0 |
| 0500-0515 | 2 | 0 | 0 | 2 |
| 0515-0530 | 3 | 0 | 0 | 0 |
| 0530-0545 | 0 | 0 | 0 | 0 |
| 0545-0600 | 0 | 1 | 0 | 0 |

| | PEDESTRIAN MOVEMENTS | | | | |
|---|---|---|---|---|---|
| 1-HOUR PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D | TOTALS |
| 0400-0500 | 0 | 0 | 8 | 0 | 8 |
| 0415-0515 | 0 | 0 | 10 | 0 | 10 |
| 0430-0530 | 0 | 0 | 12 | 0 | 12 |
| 0445-0545 | 1 | 0 | 14 | 1 | 16 |
| 0500-0600 | 1 | 0 | 12 | 1 | 14 |

| | BICYCLIST MOVEMENTS | | | | |
|---|---|---|---|---|---|
| 1-HOUR PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D | TOTALS |
| 0400-0500 | 2 | 2 | 1 | 4 | 9 |
| 0415-0515 | 3 | 2 | 1 | 3 | 9 |
| 0430-0530 | 6 | 1 | 0 | 2 | 9 |
| 0445-0545 | 5 | 1 | 0 | 2 | 8 |
| 0500-0600 | 5 | 1 | 0 | 2 | 8 |

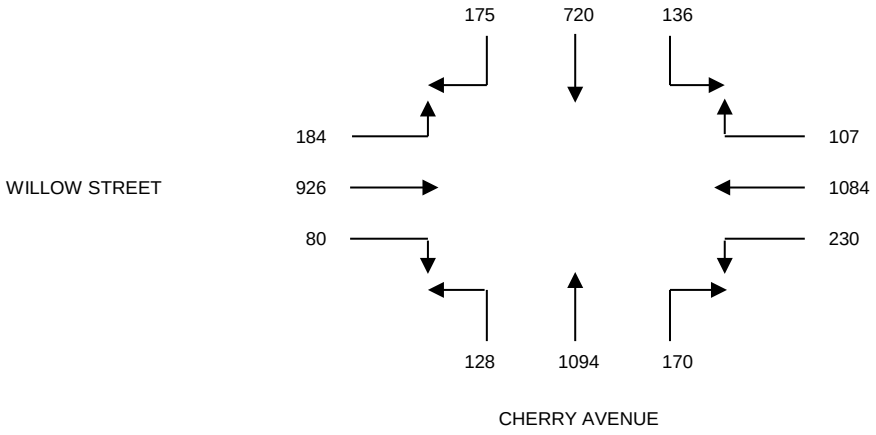
# INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: LLG - PASADENA
PROJECT: SIGNAL HILL HERITAGE SQUARE
DATE: WEDNESDAY, MARCH 28, 2018
PERIOD: 07:00 AM TO 09:00 AM
INTERSECTION: N/S CHERRY AVENUE
E/W WILLOW STREET
FILE NUMBER: 7-AM

| 15 MINUTE TOTALS | 1 SBRT | 2 SBTH | 3 SBLT | 4 WBRT | 5 WBTH | 6 WBLT | 7 NBRT | 8 NBTH | 9 NBLT | 10 EBRT | 11 EBTH | 12 EBLT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0700-0715 | 31 | 128 | 33 | 18 | 208 | 34 | 26 | 199 | 34 | 6 | 148 | 29 |
| 0715-0730 | 35 | 160 | 22 | 38 | 251 | 54 | 48 | 238 | 21 | 12 | 193 | 35 |
| 0730-0745 | 45 | 198 | 36 | 20 | 273 | 45 | 39 | 285 | 31 | 12 | 232 | 47 |
| 0745-0800 | 41 | 187 | 31 | 28 | 299 | 55 | 44 | 270 | 24 | 21 | 228 | 51 |
| 0800-0815 | 44 | 177 | 39 | 25 | 270 | 66 | 53 | 268 | 38 | 20 | 227 | 47 |
| 0815-0830 | 45 | 158 | 30 | 34 | 242 | 64 | 34 | 271 | 35 | 27 | 239 | 39 |
| 0830-0845 | 54 | 175 | 39 | 31 | 225 | 49 | 34 | 239 | 34 | 23 | 200 | 33 |
| 0845-0900 | 50 | 168 | 21 | 34 | 215 | 41 | 34 | 217 | 37 | 23 | 182 | 45 |

| 1 HOUR TOTALS | 1 SBRT | 2 SBTH | 3 SBLT | 4 WBRT | 5 WBTH | 6 WBLT | 7 NBRT | 8 NBTH | 9 NBLT | 10 EBRT | 11 EBTH | 12 EBLT | TOTALS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0700-0800 | 152 | 673 | 122 | 104 | 1031 | 188 | 157 | 992 | 110 | 51 | 801 | 162 | 4543 |
| 0715-0815 | 165 | 722 | 128 | 111 | 1093 | 220 | 184 | 1061 | 114 | 65 | 880 | 180 | 4923 |
| 0730-0830 | 175 | 720 | 136 | 107 | 1084 | 230 | 170 | 1094 | 128 | 80 | 926 | 184 | 5034 |
| 0745-0845 | 184 | 697 | 139 | 118 | 1036 | 234 | 165 | 1048 | 131 | 91 | 894 | 170 | 4907 |
| 0800-0900 | 193 | 678 | 129 | 124 | 952 | 220 | 155 | 995 | 144 | 93 | 848 | 164 | 4695 |

A.M. PEAK HOUR
0730-0830



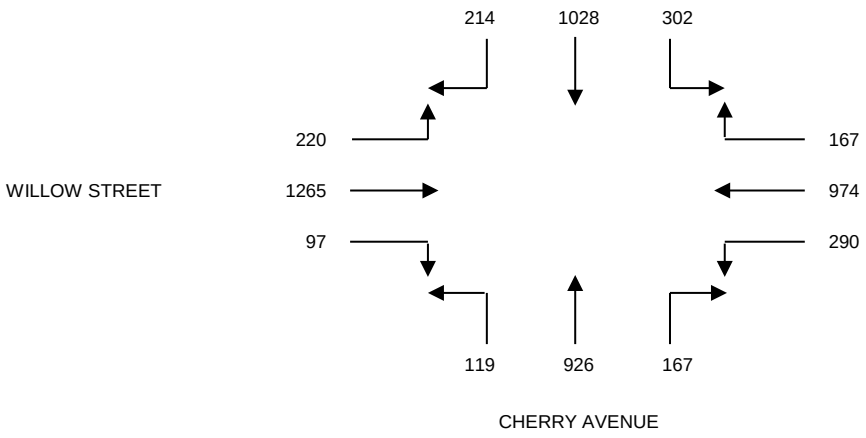
# INTERSECTION TURNING MOVEMENT COUNT SUMMARY

CLIENT: LLG - PASADENA
PROJECT: SIGNAL HILL HERITAGE SQUARE
DATE: WEDNESDAY, MARCH 28, 2018
PERIOD: 04:00 PM TO 06:00 PM
INTERSECTION: N/S CHERRY AVENUE
E/W WILLOW STREET
FILE NUMBER: 7-PM

| 15 MINUTE TOTALS | 1 SBRT | 2 SBTH | 3 SBLT | 4 WBRT | 5 WBTH | 6 WBLT | 7 NBRT | 8 NBTH | 9 NBLT | 10 EBRT | 11 EBTH | 12 EBLT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0400-0415 | 37 | 211 | 65 | 35 | 235 | 62 | 51 | 204 | 39 | 25 | 290 | 48 |
| 0415-0430 | 44 | 220 | 89 | 44 | 247 | 59 | 34 | 215 | 31 | 24 | 341 | 40 |
| 0430-0445 | 66 | 234 | 76 | 51 | 233 | 68 | 38 | 220 | 41 | 27 | 326 | 52 |
| 0445-0500 | 50 | 248 | 87 | 52 | 245 | 68 | 44 | 234 | 30 | 22 | 325 | 58 |
| 0500-0515 | 57 | 255 | 70 | 31 | 243 | 88 | 46 | 232 | 28 | 22 | 275 | 61 |
| 0515-0530 | 41 | 291 | 69 | 33 | 253 | 66 | 39 | 240 | 20 | 26 | 339 | 49 |
| 0530-0545 | 46 | 259 | 61 | 31 | 220 | 84 | 35 | 246 | 37 | 23 | 316 | 48 |
| 0545-0600 | 55 | 222 | 77 | 41 | 243 | 61 | 40 | 263 | 27 | 33 | 334 | 52 |

| 1 HOUR TOTALS | 1 SBRT | 2 SBTH | 3 SBLT | 4 WBRT | 5 WBTH | 6 WBLT | 7 NBRT | 8 NBTH | 9 NBLT | 10 EBRT | 11 EBTH | 12 EBLT | TOTALS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0400-0500 | 197 | 913 | 317 | 182 | 960 | 257 | 167 | 873 | 141 | 98 | 1282 | 198 | 5585 |
| 0415-0515 | 217 | 957 | 322 | 178 | 968 | 283 | 162 | 901 | 130 | 95 | 1267 | 211 | 5691 |
| 0430-0530 | 214 | 1028 | 302 | 167 | 974 | 290 | 167 | 926 | 119 | 97 | 1265 | 220 | 5769 |
| 0445-0545 | 194 | 1053 | 287 | 147 | 961 | 306 | 164 | 952 | 115 | 93 | 1255 | 216 | 5743 |
| 0500-0600 | 199 | 1027 | 277 | 136 | 959 | 299 | 160 | 981 | 112 | 104 | 1264 | 210 | 5728 |

P.M. PEAK HOUR
0430-0530



# PEDESTRIAN - BICYCLE COUNT SUMMARY

CLIENT: LLG - PASADENA

PROJECT: SIGNAL HILL HERITAGE SQUARE

DATE: WEDNESDAY, MARCH 28, 2018

PERIOD: 07:00 AM TO 09:00 AM

INTERSECTION: CHERRY STREET / WILLOW STREET

FILE: 7AMPED-BIKE

| | PEDESTRIAN MOVEMENTS | | | |
|---|---|---|---|---|
| 15-MINUTE PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D |
| 0700-0715 | 0 | 0 | 0 | 2 |
| 0715-0730 | 1 | 0 | 0 | 1 |
| 0730-0745 | 1 | 2 | 1 | 0 |
| 0745-0800 | 0 | 0 | 0 | 0 |
| 0800-0815 | 0 | 2 | 0 | 0 |
| 0815-0830 | 0 | 0 | 2 | 0 |
| 0830-0845 | 1 | 2 | 1 | 1 |
| 0845-0900 | 3 | 0 | 1 | 0 |

| | BICYCLIST MOVEMENTS | | | |
|---|---|---|---|---|
| 15-MINUTE PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D |
| 0700-0715 | 0 | 0 | 0 | 0 |
| 0715-0730 | 0 | 0 | 0 | 0 |
| 0730-0745 | 0 | 0 | 0 | 0 |
| 0745-0800 | 0 | 0 | 0 | 1 |
| 0800-0815 | 0 | 0 | 0 | 0 |
| 0815-0830 | 0 | 1 | 0 | 0 |
| 0830-0845 | 2 | 1 | 0 | 0 |
| 0845-0900 | 1 | 2 | 0 | 0 |

| | PEDESTRIAN MOVEMENTS | | | | |
|---|---|---|---|---|---|
| 1-HOUR PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D | TOTALS |
| 0700-0800 | 2 | 2 | 1 | 3 | 8 |
| 0715-0815 | 2 | 4 | 1 | 1 | 8 |
| 0730-0830 | 1 | 4 | 3 | 0 | 8 |
| 0745-0845 | 1 | 4 | 3 | 1 | 9 |
| 0800-0900 | 4 | 4 | 4 | 1 | 13 |

| | BICYCLIST MOVEMENTS | | | | |
|---|---|---|---|---|---|
| 1-HOUR PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D | TOTALS |
| 0700-0800 | 0 | 0 | 0 | 1 | 1 |
| 0715-0815 | 0 | 0 | 0 | 1 | 1 |
| 0730-0830 | 0 | 1 | 0 | 1 | 2 |
| 0745-0845 | 2 | 2 | 0 | 1 | 5 |
| 0800-0900 | 3 | 4 | 0 | 0 | 7 |

# PEDESTRIAN - BICYCLE COUNT SUMMARY

CLIENT: LLG - PASADENA

PROJECT: SIGNAL HILL HERITAGE SQUARE

DATE: WEDNESDAY, MARCH 28, 2018

PERIOD: 04:00 PM TO 06:00 PM

INTERSECTION: CHERRY STREET / WILLOW STREET

FILE: 7PMPED-BIKE

| | PEDESTRIAN MOVEMENTS | | | |
|---|---|---|---|---|
| 15-MINUTE PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D |
| 0400-0415 | 0 | 5 | 1 | 2 |
| 0415-0430 | 0 | 3 | 4 | 0 |
| 0430-0445 | 1 | 3 | 1 | 0 |
| 0445-0500 | 4 | 5 | 4 | 0 |
| 0500-0515 | 2 | 3 | 3 | 0 |
| 0515-0530 | 0 | 1 | 1 | 0 |
| 0530-0545 | 1 | 2 | 0 | 0 |
| 0545-0600 | 0 | 3 | 1 | 0 |

| | BICYCLIST MOVEMENTS | | | |
|---|---|---|---|---|
| 15-MINUTE PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D |
| 0400-0415 | 0 | 0 | 0 | 2 |
| 0415-0430 | 0 | 1 | 0 | 0 |
| 0430-0445 | 0 | 0 | 0 | 0 |
| 0445-0500 | 0 | 0 | 2 | 0 |
| 0500-0515 | 0 | 1 | 2 | 0 |
| 0515-0530 | 0 | 1 | 1 | 0 |
| 0530-0545 | 0 | 0 | 0 | 0 |
| 0545-0600 | 0 | 0 | 1 | 0 |

| | PEDESTRIAN MOVEMENTS | | | | |
|---|---|---|---|---|---|
| 1-HOUR PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D | TOTALS |
| 0400-0500 | 5 | 16 | 10 | 2 | 33 |
| 0415-0515 | 7 | 14 | 12 | 0 | 33 |
| 0430-0530 | 7 | 12 | 9 | 0 | 28 |
| 0445-0545 | 7 | 11 | 8 | 0 | 26 |
| 0500-0600 | 3 | 9 | 5 | 0 | 17 |

| | BICYCLIST MOVEMENTS | | | | |
|---|---|---|---|---|---|
| 1-HOUR PERIOD | NORTH LEG A | EAST LEG B | SOUTH LEG C | WEST LEG D | TOTALS |
| 0400-0500 | 0 | 1 | 2 | 2 | 5 |
| 0415-0515 | 0 | 2 | 4 | 0 | 6 |
| 0430-0530 | 0 | 2 | 5 | 0 | 7 |
| 0445-0545 | 0 | 2 | 5 | 0 | 7 |
| 0500-0600 | 0 | 2 | 4 | 0 | 6 |

# APPENDIX B

## INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS

*APPENDIX B-IA*

# EXISTING (2018) TRAFFIC CONDITIONS

**Intersection Level Of Service Report**
**Intersection 1: Cherry Avenue at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.706 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 104 | 579 | 176 | 310 | 1270 | 67 | 58 | 604 | 99 | 373 | 754 | 170 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 104 | 579 | 176 | 310 | 1270 | 67 | 58 | 604 | 99 | 373 | 754 | 170 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 26 | 145 | 44 | 78 | 318 | 17 | 15 | 151 | 25 | 93 | 189 | 43 |
| Total Analysis Volume [veh/h] | 104 | 579 | 176 | 310 | 1270 | 67 | 58 | 604 | 99 | 373 | 754 | 170 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.07 | 0.12 | 0.00 | 0.11 | 0.26 | 0.04 | 0.02 | 0.15 | 0.15 | 0.13 | 0.19 | 0.19 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.706 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 2: Shopping Center at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.401 |

**Intersection Setup**

| Name | Shopping Center | | | Shopping Center | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | No | | | Yes | | |

**Volumes**

| Name | Shopping Center | | | Shopping Center | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 73 | 0 | 26 | 0 | 0 | 3 | 1 | 997 | 51 | 30 | 1212 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 73 | 0 | 26 | 0 | 0 | 3 | 1 | 997 | 51 | 30 | 1212 | 0 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 18 | 0 | 7 | 0 | 0 | 1 | 0 | 249 | 13 | 8 | 303 | 0 |
| Total Analysis Volume [veh/h] | 73 | 0 | 26 | 0 | 0 | 3 | 1 | 997 | 51 | 30 | 1212 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.22 | 0.22 | 0.02 | 0.25 | 0.00 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.401 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Cherry Avenue at Cover Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.544 |

**Intersection Setup**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 873 | 385 | 77 | 1631 | 299 | 84 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 873 | 385 | 77 | 1631 | 299 | 84 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 218 | 96 | 19 | 408 | 75 | 21 |
| Total Analysis Volume [veh/h] | 873 | 385 | 77 | 1631 | 299 | 84 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Overlap | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 2 | 2 | 1 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | 2,7 | | | | |
| Lead / Lag | - | - | Lead | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.27 | 0.14 | 0.05 | 0.34 | 0.10 | 0.05 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.544 | | | | | |

**Intersection Level Of Service Report**
**Intersection 4: Cherry Avenue at Bixby Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.602 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Bixby Road | | | Bixby Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Bixby Road | | | Bixby Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 48 | 1171 | 19 | 41 | 1902 | 52 | 50 | 9 | 38 | 7 | 24 | 7 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 48 | 1171 | 19 | 41 | 1902 | 52 | 50 | 9 | 38 | 7 | 24 | 7 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 12 | 293 | 5 | 10 | 476 | 13 | 13 | 2 | 10 | 2 | 6 | 2 |
| Total Analysis Volume [veh/h] | 48 | 1171 | 19 | 41 | 1902 | 52 | 50 | 9 | 38 | 7 | 24 | 7 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.25 | 0.25 | 0.03 | 0.41 | 0.41 | 0.03 | 0.06 | 0.06 | 0.00 | 0.02 | 0.02 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.602 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 5: Cherry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.640 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 14 | 1230 | 193 | 11 | 1943 | 28 | 26 | 14 | 30 | 220 | 14 | 11 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 14 | 1230 | 193 | 11 | 1943 | 28 | 26 | 14 | 30 | 220 | 14 | 11 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 4 | 308 | 48 | 3 | 486 | 7 | 7 | 4 | 8 | 55 | 4 | 3 |
| Total Analysis Volume [veh/h] | 14 | 1230 | 193 | 11 | 1943 | 28 | 26 | 14 | 30 | 220 | 14 | 11 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.30 | 0.30 | 0.01 | 0.41 | 0.41 | 0.02 | 0.04 | 0.04 | 0.08 | 0.02 | 0.02 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.640 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 6: Industry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.369 |

**Intersection Setup**

| Name | Industry Avenue | | | Industry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | | 25.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Industry Avenue | | | Industry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 13 | 0 | 252 | 178 | 6 | 0 | 0 | 1 | 1 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 13 | 0 | 252 | 178 | 6 | 0 | 0 | 1 | 1 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 3 | 0 | 63 | 45 | 2 | 0 | 0 | 0 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 13 | 0 | 252 | 178 | 6 | 0 | 0 | 1 | 1 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.16 | 0.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.369 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: Cherry Avenue at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.766 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 35.00 | | | 40.00 | | | 35.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 183 | 1213 | 42 | 47 | 1851 | 249 | 262 | 23 | 131 | 39 | 17 | 23 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 183 | 1213 | 42 | 47 | 1851 | 249 | 262 | 23 | 131 | 39 | 17 | 23 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 46 | 303 | 11 | 12 | 463 | 62 | 66 | 6 | 33 | 10 | 4 | 6 |
| Total Analysis Volume [veh/h] | 183 | 1213 | 42 | 47 | 1851 | 249 | 262 | 23 | 131 | 39 | 17 | 23 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.11 | 0.38 | 0.03 | 0.03 | 0.44 | 0.44 | 0.09 | 0.10 | 0.10 | 0.01 | 0.02 | 0.02 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.766 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 8: Boeing at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.117 |

**Intersection Setup**

| Name | Boeing | | Wardlow Road | | Wardlow Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 30.00 | | 30.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Boeing | | Wardlow Road | | Wardlow Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 3 | 0 | 48 | 1 | 1 | 21 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 3 | 0 | 48 | 1 | 1 | 21 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 0 | 12 | 0 | 0 | 5 |
| Total Analysis Volume [veh/h] | 3 | 0 | 48 | 1 | 1 | 21 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Permissive | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 5 | 0 | 8 | 0 | 0 | 4 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | 0.01 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.117 | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Orange Avenue at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.719 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 35.00 | | | 35.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 13 | 380 | 293 | 177 | 688 | 6 | 0 | 26 | 51 | 64 | 0 | 62 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 13 | 380 | 293 | 177 | 688 | 6 | 0 | 26 | 51 | 64 | 0 | 62 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 3 | 95 | 73 | 44 | 172 | 2 | 0 | 7 | 13 | 16 | 0 | 16 |
| Total Analysis Volume [veh/h] | 13 | 380 | 293 | 177 | 688 | 6 | 0 | 26 | 51 | 64 | 0 | 62 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 7 | 0 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.42 | 0.42 | 0.11 | 0.43 | 0.43 | 0.00 | 0.05 | 0.05 | 0.04 | 0.00 | 0.04 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.719 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 10: I-405 NB Ramps at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 11.2 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.197 |

**Intersection Setup**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 25.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 137 | 11 | 14 | 455 | 0 | 3 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 137 | 11 | 14 | 455 | 0 | 3 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 36 | 3 | 4 | 120 | 0 | 1 |
| Total Analysis Volume [veh/h] | 144 | 12 | 15 | 479 | 0 | 3 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.20 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 11.24 | 10.91 | 0.00 | 0.00 | 8.37 | 0.00 |
| Movement LOS | B | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.80 | 0.80 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 19.98 | 19.98 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 11.21 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 2.68 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Orange Avenue at I-405 SB Ramps**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 275.4 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.310 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 168 | 581 | 496 | 274 | 113 | 265 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 168 | 581 | 496 | 274 | 113 | 265 |
| Peak Hour Factor | 0.8900 | 0.8900 | 0.8900 | 0.8900 | 0.8900 | 0.8900 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 47 | 163 | 139 | 77 | 32 | 74 |
| Total Analysis Volume [veh/h] | 189 | 653 | 557 | 308 | 127 | 298 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Free | Free | Stop |
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.24 | 0.01 | 0.01 | 0.00 | 1.31 | 0.52 |
| d_M, Delay for Movement [s/veh] | 11.15 | 0.00 | 0.00 | 0.00 | 275.44 | 17.97 |
| Movement LOS | B | A | A | A | F | C |
| 95th-Percentile Queue Length [veh/ln] | 0.96 | 0.00 | 0.00 | 0.00 | 9.03 | 3.01 |
| 95th-Percentile Queue Length [ft/ln] | 23.93 | 0.00 | 0.00 | 0.00 | 225.76 | 75.18 |
| d_A, Approach Delay [s/veh] | 2.50 | | 0.00 | | 94.91 | |
| Approach LOS | A | | A | | F | |
| d_I, Intersection Delay [s/veh] | 19.91 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 12: Atlantic Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.732 |

**Intersection Setup**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 35.00 | | | 35.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 32 | 764 | 86 | 104 | 878 | 144 | 163 | 458 | 54 | 211 | 611 | 116 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 32 | 764 | 86 | 104 | 878 | 144 | 163 | 458 | 54 | 211 | 611 | 116 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 8 | 191 | 22 | 26 | 220 | 36 | 41 | 115 | 14 | 53 | 153 | 29 |
| Total Analysis Volume [veh/h] | 32 | 764 | 86 | 104 | 878 | 144 | 163 | 458 | 54 | 211 | 611 | 116 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.27 | 0.27 | 0.07 | 0.32 | 0.32 | 0.10 | 0.14 | 0.03 | 0.13 | 0.19 | 0.07 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.732 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 13: Olive Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.454 |

**Intersection Setup**

| Name | Olive Avenue | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Olive Avenue | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 28 | 48 | 55 | 591 | 885 | 43 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 28 | 48 | 55 | 591 | 885 | 43 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 7 | 12 | 14 | 148 | 221 | 11 |
| Total Analysis Volume [veh/h] | 28 | 48 | 55 | 591 | 885 | 43 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 1 | 0 | 3 | 8 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | Lead | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.03 | 0.03 | 0.18 | 0.29 | 0.29 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.454 | | | | | |

**Intersection Level Of Service Report**
**Intersection 14: California Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.590 |

**Intersection Setup**

| Name | California Avenue | | | California Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | California Avenue | | | California Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 69 | 175 | 70 | 102 | 136 | 72 | 38 | 509 | 47 | 98 | 797 | 98 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 69 | 175 | 70 | 102 | 136 | 72 | 38 | 509 | 47 | 98 | 797 | 98 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 17 | 44 | 18 | 26 | 34 | 18 | 10 | 127 | 12 | 25 | 199 | 25 |
| Total Analysis Volume [veh/h] | 69 | 175 | 70 | 102 | 136 | 72 | 38 | 509 | 47 | 98 | 797 | 98 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.15 | 0.15 | 0.06 | 0.09 | 0.05 | 0.02 | 0.16 | 0.03 | 0.06 | 0.25 | 0.06 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.590 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 15: Orange Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.826 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 46 | 539 | 60 | 93 | 544 | 133 | 101 | 547 | 66 | 82 | 815 | 125 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 46 | 539 | 60 | 93 | 544 | 133 | 101 | 547 | 66 | 82 | 815 | 125 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 12 | 135 | 15 | 23 | 136 | 33 | 25 | 137 | 17 | 21 | 204 | 31 |
| Total Analysis Volume [veh/h] | 46 | 539 | 60 | 93 | 544 | 133 | 101 | 547 | 66 | 82 | 815 | 125 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.17 | 0.04 | 0.06 | 0.34 | 0.08 | 0.06 | 0.19 | 0.19 | 0.05 | 0.29 | 0.29 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.826 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 16: Walnut Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.584 |

**Intersection Setup**

| Name | Walnut Avenue | | | Walnut Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 35.00 | | | 45.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Walnut Avenue | | | Walnut Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 81 | 139 | 56 | 35 | 129 | 51 | 29 | 572 | 87 | 67 | 927 | 41 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 81 | 139 | 56 | 35 | 129 | 51 | 29 | 572 | 87 | 67 | 927 | 41 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 20 | 35 | 14 | 9 | 32 | 13 | 7 | 143 | 22 | 17 | 232 | 10 |
| Total Analysis Volume [veh/h] | 81 | 139 | 56 | 35 | 129 | 51 | 29 | 572 | 87 | 67 | 927 | 41 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.12 | 0.12 | 0.02 | 0.11 | 0.11 | 0.02 | 0.21 | 0.21 | 0.04 | 0.30 | 0.30 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.584 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 17: Cherry Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.690 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | No | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 78 | 1158 | 76 | 202 | 954 | 137 | 103 | 518 | 44 | 78 | 953 | 271 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 78 | 1158 | 76 | 202 | 954 | 137 | 103 | 518 | 44 | 78 | 953 | 271 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 20 | 290 | 19 | 51 | 239 | 34 | 26 | 130 | 11 | 20 | 238 | 68 |
| Total Analysis Volume [veh/h] | 78 | 1158 | 76 | 202 | 954 | 137 | 103 | 518 | 44 | 78 | 953 | 271 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.26 | 0.26 | 0.07 | 0.23 | 0.23 | 0.06 | 0.12 | 0.12 | 0.05 | 0.20 | 0.17 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.690 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 18: I-405 SB Off-Ramp at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.732 |

**Intersection Setup**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 25.00 | | | 40.00 | | | 40.00 | |
| Grade [%] | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | |
| Crosswalk | | Yes | | | Yes | | | Yes | | | No | |

**Volumes**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 699 | 4 | 210 | 0 | 867 | 8 | 0 | 1240 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 699 | 4 | 210 | 0 | 867 | 8 | 0 | 1240 | 0 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 175 | 1 | 53 | 0 | 217 | 2 | 0 | 310 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 699 | 4 | 210 | 0 | 867 | 8 | 0 | 1240 | 0 |
| Pedestrian Volume [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Split | Split | Split | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.24 | 0.24 | 0.13 | 0.00 | 0.27 | 0.27 | 0.00 | 0.39 | 0.00 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.732 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 19: Temple Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.644 |

**Intersection Setup**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | No | | | No | | | Yes | | |

**Volumes**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 431 | 19 | 66 | 2 | 2 | 1 | 25 | 1052 | 255 | 93 | 1800 | 8 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 431 | 19 | 66 | 2 | 2 | 1 | 25 | 1052 | 255 | 93 | 1800 | 8 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 108 | 5 | 17 | 1 | 1 | 0 | 6 | 263 | 64 | 23 | 450 | 2 |
| Total Analysis Volume [veh/h] | 431 | 19 | 66 | 2 | 2 | 1 | 25 | 1052 | 255 | 93 | 1800 | 8 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.15 | 0.05 | 0.05 | 0.00 | 0.00 | 0.00 | 0.02 | 0.27 | 0.27 | 0.06 | 0.38 | 0.38 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.644 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 20: Temple Avenue at I-405 NB Off-Ramp**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.375 |

**Intersection Setup**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 387 | 0 | 0 | 345 | 246 | 136 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 387 | 0 | 0 | 345 | 246 | 136 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h] | 97 | 0 | 0 | 86 | 62 | 0 |
| Total Analysis Volume [veh/h] | 387 | 0 | 0 | 345 | 246 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 2 | 0 | 0 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | - | - | - | - | Lead | - |

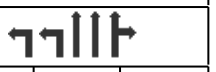
**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.12 | 0.00 | 0.00 | 0.11 | 0.15 | 0.00 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.375 | | | | | |

**Intersection Level Of Service Report**
**Intersection 21: Redondo Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.631 |

**Intersection Setup**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 614 | 0 | 295 | 6 | 1 | 2 | 6 | 684 | 339 | 291 | 1374 | 10 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 614 | 0 | 295 | 6 | 1 | 2 | 6 | 684 | 339 | 291 | 1374 | 10 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 154 | 0 | 74 | 2 | 0 | 1 | 2 | 171 | 85 | 73 | 344 | 3 |
| Total Analysis Volume [veh/h] | 614 | 0 | 295 | 6 | 1 | 2 | 6 | 684 | 339 | 291 | 1374 | 10 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.21 | 0.00 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.21 | 0.21 | 0.10 | 0.29 | 0.29 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.631 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 22: Kilroy Airport Way at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.612 |

**Intersection Setup**

| Name | Kilroy Airport Way | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Kilroy Airport Way | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 13 | 40 | 744 | 245 | 473 | 1594 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 13 | 40 | 744 | 245 | 473 | 1594 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 3 | 10 | 186 | 61 | 118 | 399 |
| Total Analysis Volume [veh/h] | 13 | 40 | 744 | 245 | 473 | 1594 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Protected | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 5 | 0 | 8 | 0 | 7 | 4 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.01 | 0.23 | 0.15 | 0.16 | 0.50 |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.612 | | | | | |

**Intersection Level Of Service Report**
**Intersection 23: Lakewood Boulevard at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.818 |

**Intersection Setup**

| Name | Lakewood Boulevard | | | Lakewood Boulevard | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Lakewood Boulevard | | | Lakewood Boulevard | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 148 | 1277 | 275 | 249 | 1304 | 571 | 312 | 416 | 22 | 208 | 1377 | 200 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 148 | 1277 | 275 | 249 | 1304 | 571 | 312 | 416 | 22 | 208 | 1377 | 200 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 37 | 319 | 69 | 62 | 326 | 143 | 78 | 104 | 6 | 52 | 344 | 50 |
| Total Analysis Volume [veh/h] | 148 | 1277 | 275 | 249 | 1304 | 571 | 312 | 416 | 22 | 208 | 1377 | 200 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 6 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | 3,6 | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.20 | 0.17 | 0.09 | 0.27 | 0.09 | 0.11 | 0.09 | 0.09 | 0.07 | 0.29 | 0.13 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.818 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 24: Orange Avenue at 29th Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 30.9 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.014 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | 29th Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | 29th Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 612 | 8 | 33 | 659 | 2 | 33 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 612 | 8 | 33 | 659 | 2 | 33 |
| Peak Hour Factor | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 163 | 2 | 9 | 175 | 1 | 9 |
| Total Analysis Volume [veh/h] | 651 | 9 | 35 | 701 | 2 | 35 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | No |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.01 | 0.00 | 0.04 | 0.01 | 0.01 | 0.08 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 9.03 | 0.00 | 30.95 | 13.58 |
| Movement LOS | A | A | A | A | D | B |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.12 | 0.00 | 0.29 | 0.29 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 2.94 | 0.00 | 7.29 | 7.29 |
| d_A, Approach Delay [s/veh] | 0.00 | | 0.43 | | 14.51 | |
| Approach LOS | A | | A | | B | |
| d_I, Intersection Delay [s/veh] | 0.60 | | | | | |
| Intersection LOS | D | | | | | |

**Intersection Level Of Service Report**
**Intersection 25: California Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.613 |

**Intersection Setup**

| Name | California Ave | | | California Ave | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | California Ave | | | California Ave | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 35 | 166 | 45 | 36 | 99 | 92 | 88 | 1039 | 28 | 26 | 1295 | 56 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 35 | 166 | 45 | 36 | 99 | 92 | 88 | 1039 | 28 | 26 | 1295 | 56 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 9 | 42 | 11 | 9 | 25 | 23 | 22 | 260 | 7 | 7 | 324 | 14 |
| Total Analysis Volume [veh/h] | 35 | 166 | 45 | 36 | 99 | 92 | 88 | 1039 | 28 | 26 | 1295 | 56 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.15 | 0.15 | 0.02 | 0.08 | 0.06 | 0.06 | 0.22 | 0.22 | 0.02 | 0.28 | 0.28 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.613 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 26: Orange Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.736 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 72 | 458 | 89 | 57 | 462 | 79 | 72 | 922 | 79 | 85 | 1151 | 86 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 72 | 458 | 89 | 57 | 462 | 79 | 72 | 922 | 79 | 85 | 1151 | 86 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 18 | 115 | 22 | 14 | 116 | 20 | 18 | 231 | 20 | 21 | 288 | 22 |
| Total Analysis Volume [veh/h] | 72 | 458 | 89 | 57 | 462 | 79 | 72 | 922 | 79 | 85 | 1151 | 86 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Unsigna | ProtPer | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.29 | 0.00 | 0.04 | 0.29 | 0.05 | 0.05 | 0.21 | 0.21 | 0.05 | 0.26 | 0.26 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.736 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 27: Walnut Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.510 |

**Intersection Setup**

| Name | Walnut Avenue | | | Walnut Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Walnut Avenue | | | Walnut Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 67 | 158 | 157 | 40 | 116 | 36 | 37 | 980 | 63 | 67 | 1210 | 53 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 67 | 158 | 157 | 40 | 116 | 36 | 37 | 980 | 63 | 67 | 1210 | 53 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 17 | 40 | 39 | 10 | 29 | 9 | 9 | 245 | 16 | 17 | 303 | 13 |
| Total Analysis Volume [veh/h] | 67 | 158 | 157 | 40 | 116 | 36 | 37 | 980 | 63 | 67 | 1210 | 53 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.10 | 0.10 | 0.03 | 0.05 | 0.05 | 0.02 | 0.22 | 0.22 | 0.04 | 0.26 | 0.26 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.510 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 28: Cherry Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.687 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 128 | 1094 | 170 | 136 | 720 | 175 | 184 | 926 | 80 | 230 | 1084 | 107 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 128 | 1094 | 170 | 136 | 720 | 175 | 184 | 926 | 80 | 230 | 1084 | 107 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 32 | 274 | 43 | 34 | 180 | 44 | 46 | 232 | 20 | 58 | 271 | 27 |
| Total Analysis Volume [veh/h] | 128 | 1094 | 170 | 136 | 720 | 175 | 184 | 926 | 80 | 230 | 1084 | 107 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

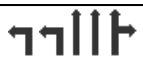
**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.08 | 0.23 | 0.03 | 0.05 | 0.19 | 0.19 | 0.06 | 0.21 | 0.21 | 0.08 | 0.25 | 0.25 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.687 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: Cherry Avenue at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.807 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 140 | 1123 | 303 | 370 | 752 | 55 | 137 | 1062 | 72 | 312 | 653 | 266 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 140 | 1123 | 303 | 370 | 752 | 55 | 137 | 1062 | 72 | 312 | 653 | 266 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 35 | 281 | 76 | 93 | 188 | 14 | 34 | 266 | 18 | 78 | 163 | 67 |
| Total Analysis Volume [veh/h] | 140 | 1123 | 303 | 370 | 752 | 55 | 137 | 1062 | 72 | 312 | 653 | 266 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.09 | 0.23 | 0.08 | 0.13 | 0.16 | 0.03 | 0.05 | 0.24 | 0.24 | 0.11 | 0.19 | 0.19 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.807 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 2: Shopping Center at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.609 |

**Intersection Setup**

| Name | Shopping Center | | | Shopping Center | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | No | | | Yes | | |

**Volumes**

| Name | Shopping Center | | | Shopping Center | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 188 | 2 | 76 | 1 | 1 | 1 | 3 | 1571 | 120 | 59 | 1020 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 188 | 2 | 76 | 1 | 1 | 1 | 3 | 1571 | 120 | 59 | 1020 | 0 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 47 | 1 | 19 | 0 | 0 | 0 | 1 | 393 | 30 | 15 | 255 | 0 |
| Total Analysis Volume [veh/h] | 188 | 2 | 76 | 1 | 1 | 1 | 3 | 1571 | 120 | 59 | 1020 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.12 | 0.12 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.35 | 0.35 | 0.04 | 0.21 | 0.00 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.609 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Cherry Avenue at Cover Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.790 |

**Intersection Setup**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1560 | 478 | 63 | 1122 | 469 | 123 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 1560 | 478 | 63 | 1122 | 469 | 123 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 390 | 120 | 16 | 281 | 117 | 31 |
| Total Analysis Volume [veh/h] | 1560 | 478 | 63 | 1122 | 469 | 123 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Overlap | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 2 | 2 | 1 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | 2,7 | | | | |
| Lead / Lag | - | - | Lead | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.49 | 0.14 | 0.04 | 0.23 | 0.16 | 0.08 |
| Intersection LOS | C | | | | | |
| Intersection V/C | 0.790 | | | | | |

**Intersection Level Of Service Report**
**Intersection 4: Cherry Avenue at Bixby Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.625 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Bixby Road | | | Bixby Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Bixby Road | | | Bixby Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 47 | 1926 | 55 | 13 | 1494 | 84 | 97 | 21 | 24 | 24 | 35 | 16 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 47 | 1926 | 55 | 13 | 1494 | 84 | 97 | 21 | 24 | 24 | 35 | 16 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 12 | 482 | 14 | 3 | 374 | 21 | 24 | 5 | 6 | 6 | 9 | 4 |
| Total Analysis Volume [veh/h] | 47 | 1926 | 55 | 13 | 1494 | 84 | 97 | 21 | 24 | 24 | 35 | 16 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.41 | 0.41 | 0.01 | 0.33 | 0.33 | 0.06 | 0.09 | 0.09 | 0.02 | 0.03 | 0.03 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.625 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 5: Cherry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.748 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 29 | 1909 | 299 | 8 | 1524 | 38 | 75 | 46 | 31 | 252 | 16 | 22 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 29 | 1909 | 299 | 8 | 1524 | 38 | 75 | 46 | 31 | 252 | 16 | 22 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 7 | 477 | 75 | 2 | 381 | 10 | 19 | 12 | 8 | 63 | 4 | 6 |
| Total Analysis Volume [veh/h] | 29 | 1909 | 299 | 8 | 1524 | 38 | 75 | 46 | 31 | 252 | 16 | 22 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.46 | 0.46 | 0.01 | 0.33 | 0.33 | 0.05 | 0.10 | 0.10 | 0.09 | 0.02 | 0.02 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.748 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 6: Industry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.513 |

**Intersection Setup**

| Name | Industry Avenue | | | Industry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | | 25.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Industry Avenue | | | Industry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 5 | 0 | 280 | 377 | 1 | 0 | 0 | 4 | 4 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 5 | 0 | 280 | 377 | 1 | 0 | 0 | 4 | 4 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 1 | 0 | 70 | 94 | 0 | 0 | 0 | 1 | 1 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 5 | 0 | 280 | 377 | 1 | 0 | 0 | 4 | 4 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.18 | 0.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.513 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: Cherry Avenue at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.857 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 35.00 | | | 40.00 | | | 35.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 147 | 1689 | 50 | 34 | 1555 | 226 | 505 | 26 | 148 | 68 | 22 | 48 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 147 | 1689 | 50 | 34 | 1555 | 226 | 505 | 26 | 148 | 68 | 22 | 48 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 37 | 422 | 13 | 9 | 389 | 57 | 126 | 7 | 37 | 17 | 6 | 12 |
| Total Analysis Volume [veh/h] | 147 | 1689 | 50 | 34 | 1555 | 226 | 505 | 26 | 148 | 68 | 22 | 48 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.09 | 0.53 | 0.03 | 0.02 | 0.37 | 0.37 | 0.18 | 0.12 | 0.12 | 0.02 | 0.03 | 0.03 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.857 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 8: Boeing at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.114 |

**Intersection Setup**

| Name | Boeing | | Wardlow Road | | Wardlow Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 30.00 | | 30.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Boeing | | Wardlow Road | | Wardlow Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 4 | 0 | 29 | 3 | 0 | 39 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 4 | 0 | 29 | 3 | 0 | 39 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 0 | 7 | 1 | 0 | 10 |
| Total Analysis Volume [veh/h] | 4 | 0 | 29 | 3 | 0 | 39 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Permissive | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 5 | 0 | 8 | 0 | 0 | 4 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.01 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.114 | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Orange Avenue at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.856 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 35.00 | | | 35.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 34 | 581 | 276 | 79 | 544 | 6 | 4 | 2 | 27 | 240 | 0 | 220 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 34 | 581 | 276 | 79 | 544 | 6 | 4 | 2 | 27 | 240 | 0 | 220 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 9 | 145 | 69 | 20 | 136 | 2 | 1 | 1 | 7 | 60 | 0 | 55 |
| Total Analysis Volume [veh/h] | 34 | 581 | 276 | 79 | 544 | 6 | 4 | 2 | 27 | 240 | 0 | 220 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 7 | 0 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.54 | 0.54 | 0.05 | 0.34 | 0.34 | 0.00 | 0.02 | 0.02 | 0.15 | 0.00 | 0.14 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.856 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 10: I-405 NB Ramps at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 19.7 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.646 |

**Intersection Setup**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 25.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 348 | 2 | 35 | 307 | 11 | 37 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 348 | 2 | 35 | 307 | 11 | 37 |
| Peak Hour Factor | 0.8000 | 0.8000 | 0.8000 | 0.8000 | 0.8000 | 0.8000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 109 | 1 | 11 | 96 | 3 | 12 |
| Total Analysis Volume [veh/h] | 435 | 3 | 44 | 384 | 14 | 46 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.65 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 |
| d_M, Delay for Movement [s/veh] | 19.68 | 18.82 | 0.00 | 0.00 | 8.22 | 0.00 |
| Movement LOS | C | C | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 4.78 | 4.78 | 0.00 | 0.00 | 0.03 | 0.03 |
| 95th-Percentile Queue Length [ft/ln] | 119.57 | 119.57 | 0.00 | 0.00 | 0.74 | 0.74 |
| d_A, Approach Delay [s/veh] | 19.67 | | 0.00 | | 1.92 | |
| Approach LOS | C | | A | | A | |
| d_I, Intersection Delay [s/veh] | 9.43 | | | | | |
| Intersection LOS | C | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Orange Avenue at I-405 SB Ramps**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 399.7 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.588 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 127 | 782 | 685 | 141 | 120 | 146 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 127 | 782 | 685 | 141 | 120 | 146 |
| Peak Hour Factor | 0.9000 | 0.9000 | 0.9000 | 0.9000 | 0.9000 | 0.9000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 35 | 217 | 190 | 39 | 33 | 41 |
| Total Analysis Volume [veh/h] | 141 | 869 | 761 | 157 | 133 | 162 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Free | Free | Stop |
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.19 | 0.01 | 0.01 | 0.00 | 1.59 | 0.30 |
| d_M, Delay for Movement [s/veh] | 11.02 | 0.00 | 0.00 | 0.00 | 399.66 | 14.28 |
| Movement LOS | B | A | A | A | F | B |
| 95th-Percentile Queue Length [veh/ln] | 0.70 | 0.00 | 0.00 | 0.00 | 10.78 | 1.22 |
| 95th-Percentile Queue Length [ft/ln] | 17.52 | 0.00 | 0.00 | 0.00 | 269.49 | 30.62 |
| d_A, Approach Delay [s/veh] | 1.54 | | 0.00 | | 188.03 | |
| Approach LOS | A | | A | | F | |
| d_I, Intersection Delay [s/veh] | 25.65 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 12: Atlantic Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.828 |

**Intersection Setup**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 35.00 | | | 35.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 44 | 863 | 189 | 98 | 730 | 187 | 192 | 833 | 32 | 124 | 590 | 133 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 44 | 863 | 189 | 98 | 730 | 187 | 192 | 833 | 32 | 124 | 590 | 133 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 11 | 216 | 47 | 25 | 183 | 47 | 48 | 208 | 8 | 31 | 148 | 33 |
| Total Analysis Volume [veh/h] | 44 | 863 | 189 | 98 | 730 | 187 | 192 | 833 | 32 | 124 | 590 | 133 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.33 | 0.33 | 0.06 | 0.29 | 0.29 | 0.12 | 0.26 | 0.02 | 0.08 | 0.18 | 0.08 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.828 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 13: Olive Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.519 |

**Intersection Setup**

| Name | Olive Avenue | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Olive Avenue | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 60 | 150 | 112 | 982 | 743 | 75 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 60 | 150 | 112 | 982 | 743 | 75 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 15 | 38 | 28 | 246 | 186 | 19 |
| Total Analysis Volume [veh/h] | 60 | 150 | 112 | 982 | 743 | 75 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 1 | 0 | 3 | 8 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | Lead | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.09 | 0.07 | 0.31 | 0.26 | 0.26 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.519 | | | | | |

**Intersection Level Of Service Report**
**Intersection 14: California Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.714 |

**Intersection Setup**

| Name | California Avenue | | | California Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | California Avenue | | | California Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 53 | 223 | 94 | 120 | 156 | 74 | 97 | 902 | 41 | 95 | 665 | 178 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 53 | 223 | 94 | 120 | 156 | 74 | 97 | 902 | 41 | 95 | 665 | 178 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 13 | 56 | 24 | 30 | 39 | 19 | 24 | 226 | 10 | 24 | 166 | 45 |
| Total Analysis Volume [veh/h] | 53 | 223 | 94 | 120 | 156 | 74 | 97 | 902 | 41 | 95 | 665 | 178 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.20 | 0.20 | 0.08 | 0.10 | 0.05 | 0.06 | 0.28 | 0.03 | 0.06 | 0.21 | 0.11 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.714 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 15: Orange Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.833 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 52 | 572 | 54 | 117 | 541 | 165 | 120 | 964 | 69 | 64 | 715 | 180 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 52 | 572 | 54 | 117 | 541 | 165 | 120 | 964 | 69 | 64 | 715 | 180 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 13 | 143 | 14 | 29 | 135 | 41 | 30 | 241 | 17 | 16 | 179 | 45 |
| Total Analysis Volume [veh/h] | 52 | 572 | 54 | 117 | 541 | 165 | 120 | 964 | 69 | 64 | 715 | 180 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.18 | 0.03 | 0.07 | 0.34 | 0.10 | 0.08 | 0.32 | 0.32 | 0.04 | 0.28 | 0.28 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.833 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 16: Walnut Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.717 |

**Intersection Setup**

| Name | Walnut Avenue | | | Walnut Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 35.00 | | | 45.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Walnut Avenue | | | Walnut Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 117 | 239 | 124 | 36 | 110 | 34 | 68 | 984 | 97 | 48 | 784 | 80 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 117 | 239 | 124 | 36 | 110 | 34 | 68 | 984 | 97 | 48 | 784 | 80 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 29 | 60 | 31 | 9 | 28 | 9 | 17 | 246 | 24 | 12 | 196 | 20 |
| Total Analysis Volume [veh/h] | 117 | 239 | 124 | 36 | 110 | 34 | 68 | 984 | 97 | 48 | 784 | 80 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.07 | 0.23 | 0.23 | 0.02 | 0.09 | 0.09 | 0.04 | 0.34 | 0.34 | 0.03 | 0.27 | 0.27 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.717 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 17: Cherry Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.738 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | No | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 87 | 1144 | 21 | 264 | 1249 | 117 | 205 | 975 | 134 | 109 | 586 | 283 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 87 | 1144 | 21 | 264 | 1249 | 117 | 205 | 975 | 134 | 109 | 586 | 283 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 22 | 286 | 5 | 66 | 312 | 29 | 51 | 244 | 34 | 27 | 147 | 71 |
| Total Analysis Volume [veh/h] | 87 | 1144 | 21 | 264 | 1249 | 117 | 205 | 975 | 134 | 109 | 586 | 283 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.05 | 0.24 | 0.24 | 0.09 | 0.28 | 0.28 | 0.13 | 0.23 | 0.23 | 0.07 | 0.14 | 0.14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.738 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 18: I-405 SB Off-Ramp at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.719 |

**Intersection Setup**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 25.00 | | | 40.00 | | | 40.00 | |
| Grade [%] | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | |
| Crosswalk | | Yes | | | Yes | | | Yes | | | No | |

**Volumes**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 599 | 1 | 135 | 0 | 1297 | 16 | 0 | 1147 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 599 | 1 | 135 | 0 | 1297 | 16 | 0 | 1147 | 0 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 150 | 0 | 34 | 0 | 324 | 4 | 0 | 287 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 599 | 1 | 135 | 0 | 1297 | 16 | 0 | 1147 | 0 |
| Pedestrian Volume [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Split | Split | Split | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.21 | 0.21 | 0.08 | 0.00 | 0.41 | 0.41 | 0.00 | 0.36 | 0.00 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.719 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 19: Temple Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.668 |

**Intersection Setup**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | No | | | No | | | Yes | | |

**Volumes**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 433 | 3 | 111 | 33 | 9 | 28 | 17 | 1446 | 252 | 67 | 1405 | 6 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 433 | 3 | 111 | 33 | 9 | 28 | 17 | 1446 | 252 | 67 | 1405 | 6 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 108 | 1 | 28 | 8 | 2 | 7 | 4 | 362 | 63 | 17 | 351 | 2 |
| Total Analysis Volume [veh/h] | 433 | 3 | 111 | 33 | 9 | 28 | 17 | 1446 | 252 | 67 | 1405 | 6 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.15 | 0.07 | 0.07 | 0.02 | 0.02 | 0.02 | 0.01 | 0.35 | 0.35 | 0.04 | 0.29 | 0.29 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.668 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 20: Temple Avenue at I-405 NB Off-Ramp**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.458 |

**Intersection Setup**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 460 | 0 | 0 | 326 | 343 | 115 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 460 | 0 | 0 | 326 | 343 | 115 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h] | 115 | 0 | 0 | 82 | 86 | 0 |
| Total Analysis Volume [veh/h] | 460 | 0 | 0 | 326 | 343 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 2 | 0 | 0 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | - | - | - | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.14 | 0.00 | 0.00 | 0.10 | 0.21 | 0.00 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.458 | | | | | |

**Intersection Level Of Service Report**
**Intersection 21: Redondo Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.720 |

**Intersection Setup**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 565 | 9 | 401 | 4 | 3 | 10 | 9 | 1233 | 385 | 237 | 857 | 8 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 565 | 9 | 401 | 4 | 3 | 10 | 9 | 1233 | 385 | 237 | 857 | 8 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 141 | 2 | 100 | 1 | 1 | 3 | 2 | 308 | 96 | 59 | 214 | 2 |
| Total Analysis Volume [veh/h] | 565 | 9 | 401 | 4 | 3 | 10 | 9 | 1233 | 385 | 237 | 857 | 8 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.20 | 0.13 | 0.13 | 0.00 | 0.00 | 0.00 | 0.01 | 0.34 | 0.34 | 0.08 | 0.18 | 0.18 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.720 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 22: Kilroy Airport Way at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.815 |

**Intersection Setup**

| Name | Kilroy Airport Way | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Kilroy Airport Way | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 164 | 521 | 1650 | 34 | 54 | 887 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 164 | 521 | 1650 | 34 | 54 | 887 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 41 | 130 | 413 | 9 | 14 | 222 |
| Total Analysis Volume [veh/h] | 164 | 521 | 1650 | 34 | 54 | 887 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Protected | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 5 | 0 | 8 | 0 | 7 | 4 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.10 | 0.18 | 0.52 | 0.02 | 0.02 | 0.28 |
| Intersection LOS | D | | | | | |
| Intersection V/C | 0.815 | | | | | |

**Intersection Level Of Service Report**
**Intersection 23: Lakewood Boulevard at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.849 |

**Intersection Setup**

| Name | Lakewood Boulevard | | | Lakewood Boulevard | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Lakewood Boulevard | | | Lakewood Boulevard | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 47 | 1480 | 204 | 258 | 1586 | 406 | 672 | 1277 | 182 | 246 | 529 | 271 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 47 | 1480 | 204 | 258 | 1586 | 406 | 672 | 1277 | 182 | 246 | 529 | 271 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 12 | 370 | 51 | 65 | 397 | 102 | 168 | 319 | 46 | 62 | 132 | 68 |
| Total Analysis Volume [veh/h] | 47 | 1480 | 204 | 258 | 1586 | 406 | 672 | 1277 | 182 | 246 | 529 | 271 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 6 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | 3,6 | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.23 | 0.13 | 0.09 | 0.33 | 0.00 | 0.23 | 0.30 | 0.30 | 0.09 | 0.11 | 0.17 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.849 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 24: Orange Avenue at 29th Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 31.5 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.014 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | 29th Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | 29th Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 629 | 6 | 12 | 690 | 2 | 48 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 629 | 6 | 12 | 690 | 2 | 48 |
| Peak Hour Factor | 0.9300 | 0.9300 | 0.9300 | 0.9300 | 0.9300 | 0.9300 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 169 | 2 | 3 | 185 | 1 | 13 |
| Total Analysis Volume [veh/h] | 676 | 6 | 13 | 742 | 2 | 52 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | No |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.01 | 0.00 | 0.01 | 0.01 | 0.01 | 0.12 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 9.01 | 0.00 | 31.49 | 14.24 |
| Movement LOS | A | A | A | A | D | B |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.04 | 0.00 | 0.44 | 0.44 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 1.09 | 0.00 | 11.02 | 11.02 |
| d_A, Approach Delay [s/veh] | 0.00 | | 0.16 | | 14.88 | |
| Approach LOS | A | | A | | B | |
| d_I, Intersection Delay [s/veh] | 0.62 | | | | | |
| Intersection LOS | D | | | | | |

**Intersection Level Of Service Report**
**Intersection 25: California Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.593 |

**Intersection Setup**

| Name | California Ave | | | California Ave | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | California Ave | | | California Ave | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 31 | 108 | 40 | 67 | 136 | 72 | 121 | 1454 | 53 | 41 | 1118 | 76 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 31 | 108 | 40 | 67 | 136 | 72 | 121 | 1454 | 53 | 41 | 1118 | 76 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 8 | 27 | 10 | 17 | 34 | 18 | 30 | 364 | 13 | 10 | 280 | 19 |
| Total Analysis Volume [veh/h] | 31 | 108 | 40 | 67 | 136 | 72 | 121 | 1454 | 53 | 41 | 1118 | 76 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.11 | 0.11 | 0.04 | 0.13 | 0.05 | 0.08 | 0.31 | 0.31 | 0.03 | 0.25 | 0.25 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.593 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 26: Orange Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.845 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 60 | 523 | 97 | 64 | 519 | 76 | 118 | 1406 | 91 | 106 | 1084 | 70 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 60 | 523 | 97 | 64 | 519 | 76 | 118 | 1406 | 91 | 106 | 1084 | 70 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 15 | 131 | 24 | 16 | 130 | 19 | 30 | 352 | 23 | 27 | 271 | 18 |
| Total Analysis Volume [veh/h] | 60 | 523 | 97 | 64 | 519 | 76 | 118 | 1406 | 91 | 106 | 1084 | 70 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Unsigna | ProtPer | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.33 | 0.00 | 0.04 | 0.32 | 0.05 | 0.07 | 0.31 | 0.31 | 0.07 | 0.24 | 0.24 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.845 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 27: Walnut Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.617 |

**Intersection Setup**

| Name | Walnut Avenue | | | Walnut Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Walnut Avenue | | | Walnut Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 67 | 208 | 163 | 63 | 171 | 52 | 58 | 1400 | 60 | 92 | 1134 | 80 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 67 | 208 | 163 | 63 | 171 | 52 | 58 | 1400 | 60 | 92 | 1134 | 80 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 17 | 52 | 41 | 16 | 43 | 13 | 15 | 350 | 15 | 23 | 284 | 20 |
| Total Analysis Volume [veh/h] | 67 | 208 | 163 | 63 | 171 | 52 | 58 | 1400 | 60 | 92 | 1134 | 80 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.12 | 0.12 | 0.04 | 0.07 | 0.07 | 0.04 | 0.30 | 0.30 | 0.06 | 0.25 | 0.25 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.617 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 28: Cherry Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.818 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 119 | 926 | 167 | 302 | 1028 | 214 | 220 | 1265 | 97 | 290 | 974 | 167 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 119 | 926 | 167 | 302 | 1028 | 214 | 220 | 1265 | 97 | 290 | 974 | 167 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 30 | 232 | 42 | 76 | 257 | 54 | 55 | 316 | 24 | 73 | 244 | 42 |
| Total Analysis Volume [veh/h] | 119 | 926 | 167 | 302 | 1028 | 214 | 220 | 1265 | 97 | 290 | 974 | 167 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.07 | 0.19 | 0.00 | 0.10 | 0.26 | 0.26 | 0.08 | 0.28 | 0.28 | 0.10 | 0.24 | 0.24 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.818 | | | | | | | | | | | |

*APPENDIX B-IB*

## EXISTING (2018) TRAFFIC CONDITIONS – SIGNAL WARRANTS

Signal Warrants Report For Intersection 11: Orange Avenue at I-405 SB Ramps

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | Yes |
| #2 | Four Hour Vehicular Volume | Yes |
| #3 | Peak Hour | Yes |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | S, N |
| Minor Approaches | W |
| Speed > 40mph | No |
| Population < 10,000 | No |
| Warrant Factor | 100% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets |
|---|---|---|---|
| | S | N | W |
| 1 | 749 | 770 | 378 |
| 2 | 719 | 739 | 363 |
| 3 | 704 | 724 | 355 |
| 4 | 599 | 616 | 302 |
| 5 | 569 | 585 | 287 |
| 6 | 509 | 524 | 257 |
| 7 | 472 | 485 | 238 |
| 8 | 449 | 462 | 227 |
| 9 | 360 | 370 | 181 |
| 10 | 337 | 347 | 170 |
| 11 | 337 | 347 | 170 |
| 12 | 322 | 331 | 163 |
| 13 | 292 | 300 | 147 |
| 14 | 270 | 277 | 136 |
| 15 | 270 | 277 | 136 |
| 16 | 262 | 270 | 132 |
| 17 | 150 | 154 | 76 |
| 18 | 82 | 85 | 42 |
| 19 | 75 | 77 | 38 |
| 20 | 30 | 31 | 15 |
| 21 | 22 | 23 | 11 |
| 22 | 22 | 23 | 11 |
| 23 | 15 | 15 | 8 |
| 24 | 15 | 15 | 8 |

## Warrant Analysis by Hour

| Hour | Major Lanes | | Minor Lanes | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 5 | 1519 | 2 | 378 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 2 | 5 | 1458 | 2 | 363 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 3 | 5 | 1428 | 2 | 355 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 4 | 5 | 1215 | 2 | 302 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 5 | 5 | 1154 | 2 | 287 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No |
| 6 | 5 | 1033 | 2 | 257 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No |
| 7 | 5 | 957 | 2 | 238 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No |
| 8 | 5 | 911 | 2 | 227 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | No |
| 9 | 5 | 730 | 2 | 181 | No | Yes | Yes | Yes | No | Yes | Yes | Yes | No | No |
| 10 | 5 | 684 | 2 | 170 | No | Yes | Yes | Yes | No | No | Yes | Yes | No | No |
| 11 | 5 | 684 | 2 | 170 | No | Yes | Yes | Yes | No | No | Yes | Yes | No | No |
| 12 | 5 | 653 | 2 | 163 | No | Yes | Yes | Yes | No | No | Yes | Yes | No | No |
| 13 | 5 | 592 | 2 | 147 | No | No | Yes | Yes | No | No | No | Yes | No | No |
| 14 | 5 | 547 | 2 | 136 | No | No | No | Yes | No | No | No | Yes | No | No |
| 15 | 5 | 547 | 2 | 136 | No | No | No | Yes | No | No | No | Yes | No | No |
| 16 | 5 | 532 | 2 | 132 | No | No | No | Yes | No | No | No | Yes | No | No |
| 17 | 5 | 304 | 2 | 76 | No | No | No | No | No | No | No | No | No | No |
| 18 | 5 | 167 | 2 | 42 | No | No | No | No | No | No | No | No | No | No |
| 19 | 5 | 152 | 2 | 38 | No | No | No | No | No | No | No | No | No | No |
| 20 | 5 | 61 | 2 | 15 | No | No | No | No | No | No | No | No | No | No |
| 21 | 5 | 45 | 2 | 11 | No | No | No | No | No | No | No | No | No | No |
| 22 | 5 | 45 | 2 | 11 | No | No | No | No | No | No | No | No | No | No |
| 23 | 5 | 30 | 2 | 8 | No | No | No | No | No | No | No | No | No | No |
| 24 | 5 | 30 | 2 | 8 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 8 | 12 | 13 | 16 | 8 | 9 | 12 | 16 | 7 | 4 |

## Warrant 3 Condition A

| Orientation | W |
|---|---|
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 94.9 |
| Number of Lanes on Minor Street Approach | 2 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 9:57 |
| Delay Condition Met | Yes |
| Volume on Minor Street Approach During Same Hour | 378 |
| High Minor Volume Condition Met | Yes |
| Total Entering Volume on All Approaches During Same Hour | 1897 |
| Number of Approaches on Intersection | 3 |
| Total Volume Condition Met | Yes |
| Warrant Met for Approach | Yes |
| **Warrant Met for Intersection** | **Yes** |

Signal Warrants Report For Intersection 11: Orange Avenue at I-405 SB Ramps

## Warrants Summary

| Warrant | Name | Met? |
|---|---|---|
| #1 | Eight Hour Vehicular Volume | Yes |
| #2 | Four Hour Vehicular Volume | Yes |
| #3 | Peak Hour | Yes |

## Intersection Warrants Parameters

| | |
|---|---|
| Major Approaches | S, N |
| Minor Approaches | W |
| Speed > 40mph | No |
| Population < 10,000 | No |
| Warrant Factor | 100% |

## Warrant Analysis Traffic Volumes

| Hour | Major Streets | | Minor Streets |
|---|---|---|---|
| | S | N | W |
| 1 | 909 | 826 | 266 |
| 2 | 873 | 793 | 255 |
| 3 | 854 | 776 | 250 |
| 4 | 727 | 661 | 213 |
| 5 | 691 | 628 | 202 |
| 6 | 618 | 562 | 181 |
| 7 | 573 | 520 | 168 |
| 8 | 545 | 496 | 160 |
| 9 | 436 | 396 | 128 |
| 10 | 409 | 372 | 120 |
| 11 | 409 | 372 | 120 |
| 12 | 391 | 355 | 114 |
| 13 | 355 | 322 | 104 |
| 14 | 327 | 297 | 96 |
| 15 | 327 | 297 | 96 |
| 16 | 318 | 289 | 93 |
| 17 | 182 | 165 | 53 |
| 18 | 100 | 91 | 29 |
| 19 | 91 | 83 | 27 |
| 20 | 36 | 33 | 11 |
| 21 | 27 | 25 | 8 |
| 22 | 27 | 25 | 8 |
| 23 | 18 | 17 | 5 |
| 24 | 18 | 17 | 5 |

## Warrant Analysis by Hour

| Hour | Major Lanes | | Minor Lanes | | Warrant 1 Condition A | | | | Warrant 1 Condition B | | | | Warrant 2 | Warrant 3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Number | Volume | Number | Volume | 100% | 80% | 70% | 56% | 100% | 80% | 70% | 56% | | Condition B |
| 1 | 5 | 1735 | 2 | 266 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 2 | 5 | 1666 | 2 | 255 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 3 | 5 | 1630 | 2 | 250 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| 4 | 5 | 1388 | 2 | 213 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No |
| 5 | 5 | 1319 | 2 | 202 | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No |
| 6 | 5 | 1180 | 2 | 181 | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No |
| 7 | 5 | 1093 | 2 | 168 | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | No |
| 8 | 5 | 1041 | 2 | 160 | No | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | No |
| 9 | 5 | 832 | 2 | 128 | No | No | No | Yes | No | Yes | Yes | Yes | No | No |
| 10 | 5 | 781 | 2 | 120 | No | No | No | Yes | No | Yes | Yes | Yes | No | No |
| 11 | 5 | 781 | 2 | 120 | No | No | No | Yes | No | Yes | Yes | Yes | No | No |
| 12 | 5 | 746 | 2 | 114 | No | No | No | Yes | No | Yes | Yes | Yes | No | No |
| 13 | 5 | 677 | 2 | 104 | No | No | No | No | No | No | Yes | Yes | No | No |
| 14 | 5 | 624 | 2 | 96 | No | No | No | No | No | No | No | Yes | No | No |
| 15 | 5 | 624 | 2 | 96 | No | No | No | No | No | No | No | Yes | No | No |
| 16 | 5 | 607 | 2 | 93 | No | No | No | No | No | No | No | Yes | No | No |
| 17 | 5 | 347 | 2 | 53 | No | No | No | No | No | No | No | No | No | No |
| 18 | 5 | 191 | 2 | 29 | No | No | No | No | No | No | No | No | No | No |
| 19 | 5 | 174 | 2 | 27 | No | No | No | No | No | No | No | No | No | No |
| 20 | 5 | 69 | 2 | 11 | No | No | No | No | No | No | No | No | No | No |
| 21 | 5 | 52 | 2 | 8 | No | No | No | No | No | No | No | No | No | No |
| 22 | 5 | 52 | 2 | 8 | No | No | No | No | No | No | No | No | No | No |
| 23 | 5 | 35 | 2 | 5 | No | No | No | No | No | No | No | No | No | No |
| 24 | 5 | 35 | 2 | 5 | No | No | No | No | No | No | No | No | No | No |
| Hours Met | | | | | 5 | 8 | 8 | 12 | 8 | 12 | 13 | 16 | 6 | 3 |

## Warrant 3 Condition A

| Orientation | W |
|---|---|
| Total Stopped Delay Per Vehicle on Minor Approach (s) | 188 |
| Number of Lanes on Minor Street Approach | 2 |
| VehicleHours of Stopped Delay on Minor Approach ([h]h:mm) | 13:53 |
| Delay Condition Met | Yes |
| Volume on Minor Street Approach During Same Hour | 266 |
| High Minor Volume Condition Met | Yes |
| Total Entering Volume on All Approaches During Same Hour | 2001 |
| Number of Approaches on Intersection | 3 |
| Total Volume Condition Met | Yes |
| Warrant Met for Approach | Yes |
| **Warrant Met for Intersection** | **Yes** |

*APPENDIX B-II*

# EXISTING (2018) PLUS PROJECT TRAFFIC CONDITIONS

**Intersection Level Of Service Report**
**Intersection 1: Cherry Avenue at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.852 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 104 | 807 | 146 | 304 | 2010 | 67 | 58 | 601 | 99 | 352 | 751 | 159 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 104 | 807 | 146 | 304 | 2010 | 67 | 58 | 601 | 99 | 352 | 751 | 159 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 26 | 202 | 37 | 76 | 503 | 17 | 15 | 150 | 25 | 88 | 188 | 40 |
| Total Analysis Volume [veh/h] | 104 | 807 | 146 | 304 | 2010 | 67 | 58 | 601 | 99 | 352 | 751 | 159 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Overla | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.07 | 0.17 | 0.00 | 0.11 | 0.42 | 0.04 | 0.02 | 0.15 | 0.15 | 0.12 | 0.19 | 0.19 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.852 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 2: Shopping Center at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.401 |

**Intersection Setup**

| Name | Shopping Center | | | Shopping Center | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 25.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | No | | | Yes | | |

**Volumes**

| Name | Shopping Center | | | Shopping Center | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 78 | 0 | 27 | 0 | 0 | 0 | 0 | 997 | 65 | 31 | 1212 | 0 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 78 | 0 | 27 | 0 | 0 | 0 | 0 | 997 | 65 | 31 | 1212 | 0 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 20 | 0 | 7 | 0 | 0 | 0 | 0 | 249 | 16 | 8 | 303 | 0 |
| Total Analysis Volume [veh/h] | 78 | 0 | 27 | 0 | 0 | 0 | 0 | 997 | 65 | 31 | 1212 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.22 | 0.22 | 0.02 | 0.25 | 0.00 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.401 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Cherry Avenue at Cover Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.693 |

**Intersection Setup**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1071 | 385 | 77 | 2349 | 299 | 84 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 1071 | 385 | 77 | 2349 | 299 | 84 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 268 | 96 | 19 | 587 | 75 | 21 |
| Total Analysis Volume [veh/h] | 1071 | 385 | 77 | 2349 | 299 | 84 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Overlap | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 2 | 2 | 1 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | 2,7 | | | | |
| Lead / Lag | - | - | Lead | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.33 | 0.14 | 0.05 | 0.49 | 0.10 | 0.05 |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.693 | | | | | |

**Intersection Level Of Service Report**
**Intersection 4: Cherry Avenue at Bixby Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.752 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Bixby Road | | | Bixby Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Bixby Road | | | Bixby Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 48 | 1369 | 19 | 41 | 2620 | 52 | 50 | 9 | 38 | 7 | 24 | 7 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 48 | 1369 | 19 | 41 | 2620 | 52 | 50 | 9 | 38 | 7 | 24 | 7 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 12 | 342 | 5 | 10 | 655 | 13 | 13 | 2 | 10 | 2 | 6 | 2 |
| Total Analysis Volume [veh/h] | 48 | 1369 | 19 | 41 | 2620 | 52 | 50 | 9 | 38 | 7 | 24 | 7 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.29 | 0.29 | 0.03 | 0.56 | 0.56 | 0.03 | 0.06 | 0.06 | 0.00 | 0.02 | 0.02 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.752 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 5: Cherry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.766 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 14 | 1387 | 334 | 190 | 2481 | 28 | 26 | 14 | 30 | 261 | 14 | 52 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 14 | 1387 | 334 | 190 | 2481 | 28 | 26 | 14 | 30 | 261 | 14 | 52 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 4 | 347 | 84 | 48 | 620 | 7 | 7 | 4 | 8 | 65 | 4 | 13 |
| Total Analysis Volume [veh/h] | 14 | 1387 | 334 | 190 | 2481 | 28 | 26 | 14 | 30 | 261 | 14 | 52 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.36 | 0.36 | 0.12 | 0.52 | 0.52 | 0.02 | 0.04 | 0.04 | 0.09 | 0.04 | 0.04 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.766 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 6: Industry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.516 |

**Intersection Setup**

| Name | Industry Avenue | | | Industry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 25.00 | | | 25.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Industry Avenue | | | Industry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 13 | 0 | 252 | 178 | 325 | 3 | 0 | 86 | 1 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 13 | 0 | 252 | 178 | 325 | 3 | 0 | 86 | 1 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 3 | 0 | 63 | 45 | 81 | 1 | 0 | 22 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 13 | 0 | 252 | 178 | 325 | 3 | 0 | 86 | 1 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.16 | 0.11 | 0.21 | 0.21 | 0.00 | 0.05 | 0.00 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.516 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: Cherry Avenue at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.116 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 40.00 | | | 35.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 183 | 1403 | 312 | 502 | 1970 | 254 | 266 | 365 | 131 | 111 | 125 | 128 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 183 | 1403 | 312 | 502 | 1970 | 254 | 266 | 365 | 131 | 111 | 125 | 128 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 46 | 351 | 78 | 126 | 493 | 64 | 67 | 91 | 33 | 28 | 31 | 32 |
| Total Analysis Volume [veh/h] | 183 | 1403 | 312 | 502 | 1970 | 254 | 266 | 365 | 131 | 111 | 125 | 128 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.11 | 0.44 | 0.20 | 0.31 | 0.46 | 0.46 | 0.09 | 0.18 | 0.18 | 0.08 | 0.09 | 0.09 |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 1.116 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 8: Boeing at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.495 |

**Intersection Setup**

| Name | Boeing | | Wardlow Road | | Wardlow Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 30.00 | | 30.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Boeing | | Wardlow Road | | Wardlow Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 149 | 0 | 480 | 615 | 1 | 164 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 149 | 0 | 480 | 615 | 1 | 164 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 37 | 0 | 120 | 154 | 0 | 41 |
| Total Analysis Volume [veh/h] | 149 | 0 | 480 | 615 | 1 | 164 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Permissive | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 5 | 0 | 8 | 0 | 0 | 4 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.00 | 0.34 | 0.34 | 0.00 | 0.05 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.495 | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Orange Avenue at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.754 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 35.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 13 | 402 | 313 | 177 | 717 | 6 | 0 | 26 | 51 | 78 | 0 | 62 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 13 | 402 | 313 | 177 | 717 | 6 | 0 | 26 | 51 | 78 | 0 | 62 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 3 | 101 | 78 | 44 | 179 | 2 | 0 | 7 | 13 | 20 | 0 | 16 |
| Total Analysis Volume [veh/h] | 13 | 402 | 313 | 177 | 717 | 6 | 0 | 26 | 51 | 78 | 0 | 62 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 7 | 0 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.45 | 0.45 | 0.11 | 0.45 | 0.45 | 0.00 | 0.05 | 0.05 | 0.05 | 0.00 | 0.04 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.754 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 10: I-405 NB Ramps at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 11.7 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.224 |

**Intersection Setup**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 25.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 151 | 11 | 17 | 472 | 4 | 3 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 151 | 11 | 17 | 472 | 4 | 3 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 40 | 3 | 4 | 124 | 1 | 1 |
| Total Analysis Volume [veh/h] | 159 | 12 | 18 | 497 | 4 | 3 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.22 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 11.66 | 11.24 | 0.00 | 0.00 | 8.44 | 0.00 |
| Movement LOS | B | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.93 | 0.93 | 0.00 | 0.00 | 0.01 | 0.01 |
| 95th-Percentile Queue Length [ft/ln] | 23.32 | 23.32 | 0.00 | 0.00 | 0.29 | 0.29 |
| d_A, Approach Delay [s/veh] | 11.63 | | 0.00 | | 4.82 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 2.92 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Orange Avenue at I-405 SB Ramps**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 395.8 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.574 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 176 | 618 | 538 | 274 | 116 | 294 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 176 | 618 | 538 | 274 | 116 | 294 |
| Peak Hour Factor | 0.8900 | 0.8900 | 0.8900 | 0.8900 | 0.8900 | 0.8900 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 49 | 174 | 151 | 77 | 33 | 83 |
| Total Analysis Volume [veh/h] | 198 | 694 | 604 | 308 | 130 | 330 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.27 | 0.01 | 0.01 | 0.00 | 1.57 | 0.60 |
| d_M, Delay for Movement [s/veh] | 11.60 | 0.00 | 0.00 | 0.00 | 395.77 | 20.78 |
| Movement LOS | B | A | A | A | F | C |
| 95th-Percentile Queue Length [veh/ln] | 1.07 | 0.00 | 0.00 | 0.00 | 10.55 | 3.92 |
| 95th-Percentile Queue Length [ft/ln] | 26.83 | 0.00 | 0.00 | 0.00 | 263.69 | 97.91 |
| d_A, Approach Delay [s/veh] | 2.57 | | 0.00 | | 126.76 | |
| Approach LOS | A | | A | | F | |
| d_I, Intersection Delay [s/veh] | 26.77 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 12: Atlantic Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.818 |

**Intersection Setup**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 35.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 32 | 929 | 86 | 104 | 933 | 160 | 224 | 490 | 54 | 211 | 627 | 116 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 32 | 929 | 86 | 104 | 933 | 160 | 224 | 490 | 54 | 211 | 627 | 116 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 8 | 232 | 22 | 26 | 233 | 40 | 56 | 123 | 14 | 53 | 157 | 29 |
| Total Analysis Volume [veh/h] | 32 | 929 | 86 | 104 | 933 | 160 | 224 | 490 | 54 | 211 | 627 | 116 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | ProtP | Permi | Permi | ProtP | Permi | Permi | ProtP | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.32 | 0.32 | 0.07 | 0.34 | 0.34 | 0.14 | 0.15 | 0.03 | 0.13 | 0.20 | 0.07 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.818 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 13: Olive Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.459 |

**Intersection Setup**

| Name | Olive Avenue | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Olive Avenue | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 28 | 48 | 55 | 623 | 901 | 43 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 28 | 48 | 55 | 623 | 901 | 43 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 7 | 12 | 14 | 156 | 225 | 11 |
| Total Analysis Volume [veh/h] | 28 | 48 | 55 | 623 | 901 | 43 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 1 | 0 | 3 | 8 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | Lead | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.03 | 0.03 | 0.19 | 0.30 | 0.30 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.459 | | | | | |

**Intersection Level Of Service Report**
**Intersection 14: California Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.595 |

**Intersection Setup**

| Name | California Avenue | | | California Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | California Avenue | | | California Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 69 | 175 | 70 | 102 | 136 | 72 | 38 | 541 | 47 | 98 | 813 | 98 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 69 | 175 | 70 | 102 | 136 | 72 | 38 | 541 | 47 | 98 | 813 | 98 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 17 | 44 | 18 | 26 | 34 | 18 | 10 | 135 | 12 | 25 | 203 | 25 |
| Total Analysis Volume [veh/h] | 69 | 175 | 70 | 102 | 136 | 72 | 38 | 541 | 47 | 98 | 813 | 98 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.15 | 0.15 | 0.06 | 0.09 | 0.05 | 0.02 | 0.17 | 0.03 | 0.06 | 0.25 | 0.06 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.595 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 15: Orange Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.860 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 47 | 560 | 61 | 93 | 584 | 133 | 107 | 576 | 70 | 85 | 830 | 125 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 47 | 560 | 61 | 93 | 584 | 133 | 107 | 576 | 70 | 85 | 830 | 125 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 12 | 140 | 15 | 23 | 146 | 33 | 27 | 144 | 18 | 21 | 208 | 31 |
| Total Analysis Volume [veh/h] | 47 | 560 | 61 | 93 | 584 | 133 | 107 | 576 | 70 | 85 | 830 | 125 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.18 | 0.04 | 0.06 | 0.37 | 0.08 | 0.07 | 0.20 | 0.20 | 0.05 | 0.30 | 0.30 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.860 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 16: Walnut Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.596 |

**Intersection Setup**

| Name | Walnut Avenue | | | Walnut Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 35.00 | | | 45.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Walnut Avenue | | | Walnut Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 81 | 146 | 56 | 35 | 139 | 51 | 29 | 603 | 87 | 67 | 946 | 41 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 81 | 146 | 56 | 35 | 139 | 51 | 29 | 603 | 87 | 67 | 946 | 41 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 20 | 37 | 14 | 9 | 35 | 13 | 7 | 151 | 22 | 17 | 237 | 10 |
| Total Analysis Volume [veh/h] | 81 | 146 | 56 | 35 | 139 | 51 | 29 | 603 | 87 | 67 | 946 | 41 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.13 | 0.13 | 0.02 | 0.12 | 0.12 | 0.02 | 0.22 | 0.22 | 0.04 | 0.31 | 0.31 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.596 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 17: Cherry Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.797 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | No | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 77 | 1438 | 59 | 224 | 1035 | 139 | 131 | 526 | 46 | 70 | 959 | 487 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 77 | 1438 | 59 | 224 | 1035 | 139 | 131 | 526 | 46 | 70 | 959 | 487 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 19 | 360 | 15 | 56 | 259 | 35 | 33 | 132 | 12 | 18 | 240 | 122 |
| Total Analysis Volume [veh/h] | 77 | 1438 | 59 | 224 | 1035 | 139 | 131 | 526 | 46 | 70 | 959 | 487 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.31 | 0.31 | 0.08 | 0.24 | 0.24 | 0.08 | 0.12 | 0.12 | 0.04 | 0.23 | 0.23 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.797 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 18: I-405 SB Off-Ramp at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.765 |

**Intersection Setup**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 30.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 708 | 4 | 337 | 0 | 925 | 8 | 0 | 1336 | 0 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 708 | 4 | 337 | 0 | 925 | 8 | 0 | 1336 | 0 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 177 | 1 | 84 | 0 | 231 | 2 | 0 | 334 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 708 | 4 | 337 | 0 | 925 | 8 | 0 | 1336 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Split | Split | Split | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.25 | 0.25 | 0.21 | 0.00 | 0.29 | 0.29 | 0.00 | 0.42 | 0.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.765 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 19: Temple Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.704 |

**Intersection Setup**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | No | | | No | | | Yes | | |

**Volumes**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 423 | 57 | 86 | 3 | 30 | 30 | 63 | 1084 | 255 | 93 | 1902 | 10 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 423 | 57 | 86 | 3 | 30 | 30 | 63 | 1084 | 255 | 93 | 1902 | 10 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 106 | 14 | 22 | 1 | 8 | 8 | 16 | 271 | 64 | 23 | 476 | 3 |
| Total Analysis Volume [veh/h] | 423 | 57 | 86 | 3 | 30 | 30 | 63 | 1084 | 255 | 93 | 1902 | 10 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.15 | 0.09 | 0.09 | 0.00 | 0.02 | 0.02 | 0.04 | 0.28 | 0.28 | 0.06 | 0.40 | 0.40 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.704 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 20: Temple Avenue at I-405 NB Off-Ramp**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.389 |

**Intersection Setup**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 432 | 0 | 0 | 373 | 246 | 142 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 432 | 0 | 0 | 373 | 246 | 142 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h] | 108 | 0 | 0 | 93 | 62 | 0 |
| Total Analysis Volume [veh/h] | 432 | 0 | 0 | 373 | 246 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 2 | 0 | 0 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | - | - | - | - | Lead | - |

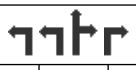
**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.14 | 0.00 | 0.00 | 0.12 | 0.15 | 0.00 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.389 | | | | | |

**Intersection Level Of Service Report**
**Intersection 21: Redondo Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.657 |

**Intersection Setup**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 628 | 28 | 295 | 30 | 20 | 2 | 6 | 705 | 349 | 291 | 1418 | 46 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 628 | 28 | 295 | 30 | 20 | 2 | 6 | 705 | 349 | 291 | 1418 | 46 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 157 | 7 | 74 | 8 | 5 | 1 | 2 | 176 | 87 | 73 | 355 | 12 |
| Total Analysis Volume [veh/h] | 628 | 28 | 295 | 30 | 20 | 2 | 6 | 705 | 349 | 291 | 1418 | 46 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.22 | 0.10 | 0.10 | 0.02 | 0.01 | 0.01 | 0.00 | 0.22 | 0.22 | 0.10 | 0.31 | 0.31 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.657 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 22: Kilroy Airport Way at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.637 |

**Intersection Setup**

| Name | Kilroy Airport Way | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Kilroy Airport Way | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 13 | 40 | 789 | 245 | 473 | 1674 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 13 | 40 | 789 | 245 | 473 | 1674 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 3 | 10 | 197 | 61 | 118 | 419 |
| Total Analysis Volume [veh/h] | 13 | 40 | 789 | 245 | 473 | 1674 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Protected | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 5 | 0 | 8 | 0 | 7 | 4 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | Lead | - |

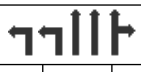
**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.01 | 0.25 | 0.15 | 0.16 | 0.52 |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.637 | | | | | |

**Intersection Level Of Service Report**
**Intersection 23: Lakewood Boulevard at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.838 |

**Intersection Setup**

| Name | Lakewood Boulevard | | | Lakewood Boulevard | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | |  | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 45.00 | | | 45.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Lakewood Boulevard | | | Lakewood Boulevard | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 154 | 1277 | 275 | 249 | 1304 | 582 | 326 | 443 | 27 | 208 | 1440 | 200 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 154 | 1277 | 275 | 249 | 1304 | 582 | 326 | 443 | 27 | 208 | 1440 | 200 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 39 | 319 | 69 | 62 | 326 | 146 | 82 | 111 | 7 | 52 | 360 | 50 |
| Total Analysis Volume [veh/h] | 154 | 1277 | 275 | 249 | 1304 | 582 | 326 | 443 | 27 | 208 | 1440 | 200 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Overla | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 6 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | 3,6 | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.20 | 0.17 | 0.09 | 0.27 | 0.09 | 0.11 | 0.10 | 0.10 | 0.07 | 0.30 | 0.13 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.838 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 24: Orange Avenue at 29th Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 32.6 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.015 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | 29th Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | 29th Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 636 | 8 | 33 | 674 | 2 | 33 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 636 | 8 | 33 | 674 | 2 | 33 |
| Peak Hour Factor | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 169 | 2 | 9 | 179 | 1 | 9 |
| Total Analysis Volume [veh/h] | 677 | 9 | 35 | 717 | 2 | 35 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | No |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.01 | 0.00 | 0.04 | 0.01 | 0.01 | 0.08 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 9.13 | 0.00 | 32.57 | 13.91 |
| Movement LOS | A | A | A | A | D | B |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.12 | 0.00 | 0.30 | 0.30 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 3.00 | 0.00 | 7.60 | 7.60 |
| d_A, Approach Delay [s/veh] | 0.00 | | 0.42 | | 14.92 | |
| Approach LOS | A | | A | | B | |
| d_I, Intersection Delay [s/veh] | 0.59 | | | | | |
| Intersection LOS | D | | | | | |

**Intersection Level Of Service Report**
**Intersection 25: California Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.621 |

**Intersection Setup**

| Name | California Ave | | | California Ave | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | California Ave | | | California Ave | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 35 | 166 | 45 | 36 | 99 | 92 | 88 | 1117 | 28 | 26 | 1336 | 56 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 35 | 166 | 45 | 36 | 99 | 92 | 88 | 1117 | 28 | 26 | 1336 | 56 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 9 | 42 | 11 | 9 | 25 | 23 | 22 | 279 | 7 | 7 | 334 | 14 |
| Total Analysis Volume [veh/h] | 35 | 166 | 45 | 36 | 99 | 92 | 88 | 1117 | 28 | 26 | 1336 | 56 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.15 | 0.15 | 0.02 | 0.08 | 0.06 | 0.06 | 0.24 | 0.24 | 0.02 | 0.29 | 0.29 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.621 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 26: Orange Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.756 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 72 | 469 | 89 | 58 | 470 | 85 | 83 | 989 | 79 | 85 | 1186 | 88 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 72 | 469 | 89 | 58 | 470 | 85 | 83 | 989 | 79 | 85 | 1186 | 88 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 18 | 117 | 22 | 15 | 118 | 21 | 21 | 247 | 20 | 21 | 297 | 22 |
| Total Analysis Volume [veh/h] | 72 | 469 | 89 | 58 | 470 | 85 | 83 | 989 | 79 | 85 | 1186 | 88 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | ProtP | Permi | Unsig | ProtP | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.29 | 0.00 | 0.04 | 0.29 | 0.05 | 0.05 | 0.22 | 0.22 | 0.05 | 0.27 | 0.27 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.756 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 27: Walnut Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.521 |

**Intersection Setup**

| Name | Walnut Avenue | | | Walnut Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Walnut Avenue | | | Walnut Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 67 | 159 | 157 | 42 | 117 | 43 | 42 | 1043 | 63 | 67 | 1240 | 54 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 67 | 159 | 157 | 42 | 117 | 43 | 42 | 1043 | 63 | 67 | 1240 | 54 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 17 | 40 | 39 | 11 | 29 | 11 | 11 | 261 | 16 | 17 | 310 | 14 |
| Total Analysis Volume [veh/h] | 67 | 159 | 157 | 42 | 117 | 43 | 42 | 1043 | 63 | 67 | 1240 | 54 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | ProtP | Permi | Permi | ProtP | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.10 | 0.10 | 0.03 | 0.05 | 0.05 | 0.03 | 0.23 | 0.23 | 0.04 | 0.27 | 0.27 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.521 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 28: Cherry Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.758 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 128 | 1251 | 170 | 155 | 762 | 186 | 224 | 951 | 80 | 230 | 1104 | 173 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 128 | 1251 | 170 | 155 | 762 | 186 | 224 | 951 | 80 | 230 | 1104 | 173 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 32 | 313 | 43 | 39 | 191 | 47 | 56 | 238 | 20 | 58 | 276 | 43 |
| Total Analysis Volume [veh/h] | 128 | 1251 | 170 | 155 | 762 | 186 | 224 | 951 | 80 | 230 | 1104 | 173 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Overla | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.08 | 0.26 | 0.03 | 0.05 | 0.20 | 0.20 | 0.08 | 0.21 | 0.21 | 0.08 | 0.27 | 0.27 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.758 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: Cherry Avenue at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.958 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 140 | 1965 | 280 | 344 | 1083 | 55 | 137 | 1057 | 72 | 272 | 646 | 234 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 140 | 1965 | 280 | 344 | 1083 | 55 | 137 | 1057 | 72 | 272 | 646 | 234 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 35 | 491 | 70 | 86 | 271 | 14 | 34 | 264 | 18 | 68 | 162 | 59 |
| Total Analysis Volume [veh/h] | 140 | 1965 | 280 | 344 | 1083 | 55 | 137 | 1057 | 72 | 272 | 646 | 234 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Overla | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.09 | 0.41 | 0.08 | 0.12 | 0.23 | 0.03 | 0.05 | 0.24 | 0.24 | 0.09 | 0.18 | 0.18 |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.958 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 2: Shopping Center at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.600 |

**Intersection Setup**

| Name | Shopping Center | | | Shopping Center | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 25.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | No | | | Yes | | |

**Volumes**

| Name | Shopping Center | | | Shopping Center | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 182 | 2 | 75 | 0 | 1 | 0 | 0 | 1571 | 106 | 57 | 1020 | 0 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 182 | 2 | 75 | 0 | 1 | 0 | 0 | 1571 | 106 | 57 | 1020 | 0 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 46 | 1 | 19 | 0 | 0 | 0 | 0 | 393 | 27 | 14 | 255 | 0 |
| Total Analysis Volume [veh/h] | 182 | 2 | 75 | 0 | 1 | 0 | 0 | 1571 | 106 | 57 | 1020 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.11 | 0.12 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.35 | 0.35 | 0.04 | 0.21 | 0.00 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.600 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Cherry Avenue at Cover Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.040 |

**Intersection Setup**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 2360 | 478 | 63 | 1396 | 469 | 123 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 2360 | 478 | 63 | 1396 | 469 | 123 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 590 | 120 | 16 | 349 | 117 | 31 |
| Total Analysis Volume [veh/h] | 2360 | 478 | 63 | 1396 | 469 | 123 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Overlap | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 2 | 2 | 1 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | 2,7 | | | | |
| Lead / Lag | - | - | Lead | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.74 | 0.14 | 0.04 | 0.29 | 0.16 | 0.08 |
| Intersection LOS | F | | | | | |
| Intersection V/C | 1.040 | | | | | |

**Intersection Level Of Service Report**
**Intersection 4: Cherry Avenue at Bixby Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.791 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Bixby Road | | | Bixby Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Bixby Road | | | Bixby Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 47 | 2726 | 55 | 13 | 1768 | 84 | 97 | 21 | 24 | 24 | 35 | 16 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 47 | 2726 | 55 | 13 | 1768 | 84 | 97 | 21 | 24 | 24 | 35 | 16 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 12 | 682 | 14 | 3 | 442 | 21 | 24 | 5 | 6 | 6 | 9 | 4 |
| Total Analysis Volume [veh/h] | 47 | 2726 | 55 | 13 | 1768 | 84 | 97 | 21 | 24 | 24 | 35 | 16 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.58 | 0.58 | 0.01 | 0.39 | 0.39 | 0.06 | 0.09 | 0.09 | 0.02 | 0.03 | 0.03 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.791 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 5: Cherry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.983 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 29 | 2508 | 349 | 67 | 1739 | 38 | 75 | 46 | 31 | 414 | 16 | 226 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 29 | 2508 | 349 | 67 | 1739 | 38 | 75 | 46 | 31 | 414 | 16 | 226 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 7 | 627 | 87 | 17 | 435 | 10 | 19 | 12 | 8 | 104 | 4 | 57 |
| Total Analysis Volume [veh/h] | 29 | 2508 | 349 | 67 | 1739 | 38 | 75 | 46 | 31 | 414 | 16 | 226 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.60 | 0.60 | 0.04 | 0.37 | 0.37 | 0.05 | 0.10 | 0.10 | 0.14 | 0.15 | 0.15 |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.983 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 6: Industry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.741 |

**Intersection Setup**

| Name | Industry Avenue | | | Industry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 25.00 | | | 25.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Industry Avenue | | | Industry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 5 | 0 | 0 | 5 | 0 | 280 | 377 | 108 | 2 | 0 | 363 | 4 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 5 | 0 | 0 | 5 | 0 | 280 | 377 | 108 | 2 | 0 | 363 | 4 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 1 | 0 | 0 | 1 | 0 | 70 | 94 | 27 | 1 | 0 | 91 | 1 |
| Total Analysis Volume [veh/h] | 5 | 0 | 0 | 5 | 0 | 280 | 377 | 108 | 2 | 0 | 363 | 4 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.18 | 0.24 | 0.07 | 0.07 | 0.00 | 0.23 | 0.00 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.741 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: Cherry Avenue at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.294 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 40.00 | | | 35.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 147 | 1846 | 149 | 164 | 1802 | 226 | 505 | 144 | 148 | 378 | 412 | 540 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 147 | 1846 | 149 | 164 | 1802 | 226 | 505 | 144 | 148 | 378 | 412 | 540 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 37 | 462 | 37 | 41 | 451 | 57 | 126 | 36 | 37 | 95 | 103 | 135 |
| Total Analysis Volume [veh/h] | 147 | 1846 | 149 | 164 | 1802 | 226 | 505 | 144 | 148 | 378 | 412 | 540 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.09 | 0.58 | 0.09 | 0.10 | 0.42 | 0.42 | 0.18 | 0.18 | 0.18 | 0.26 | 0.33 | 0.33 |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 1.294 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 8: Boeing at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.500 |

**Intersection Setup**

| Name | Boeing | | Wardlow Road | | Wardlow Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 30.00 | | 30.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Boeing | | Wardlow Road | | Wardlow Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 652 | 0 | 215 | 151 | 0 | 554 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 652 | 0 | 215 | 151 | 0 | 554 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 163 | 0 | 54 | 38 | 0 | 139 |
| Total Analysis Volume [veh/h] | 652 | 0 | 215 | 151 | 0 | 554 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Permissive | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 5 | 0 | 8 | 0 | 0 | 4 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.23 | 0.00 | 0.11 | 0.11 | 0.00 | 0.17 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.500 | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Orange Avenue at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.925 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 35.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 34 | 634 | 322 | 79 | 590 | 6 | 4 | 2 | 27 | 252 | 0 | 220 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 34 | 634 | 322 | 79 | 590 | 6 | 4 | 2 | 27 | 252 | 0 | 220 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 9 | 159 | 81 | 20 | 148 | 2 | 1 | 1 | 7 | 63 | 0 | 55 |
| Total Analysis Volume [veh/h] | 34 | 634 | 322 | 79 | 590 | 6 | 4 | 2 | 27 | 252 | 0 | 220 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 7 | 0 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.60 | 0.60 | 0.05 | 0.37 | 0.37 | 0.00 | 0.02 | 0.02 | 0.16 | 0.00 | 0.14 |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.925 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 10: I-405 NB Ramps at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 24.7 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.724 |

**Intersection Setup**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 25.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 360 | 2 | 43 | 345 | 19 | 37 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 360 | 2 | 43 | 345 | 19 | 37 |
| Peak Hour Factor | 0.8000 | 0.8000 | 0.8000 | 0.8000 | 0.8000 | 0.8000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 113 | 1 | 13 | 108 | 6 | 12 |
| Total Analysis Volume [veh/h] | 450 | 3 | 54 | 431 | 24 | 46 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.72 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 |
| d_M, Delay for Movement [s/veh] | 24.71 | 23.60 | 0.00 | 0.00 | 8.42 | 0.00 |
| Movement LOS | C | C | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 6.21 | 6.21 | 0.00 | 0.00 | 0.05 | 0.05 |
| 95th-Percentile Queue Length [ft/ln] | 155.30 | 155.30 | 0.00 | 0.00 | 1.35 | 1.35 |
| d_A, Approach Delay [s/veh] | 24.71 | | 0.00 | | 2.89 | |
| Approach LOS | C | | A | | A | |
| d_I, Intersection Delay [s/veh] | 11.30 | | | | | |
| Intersection LOS | C | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Orange Avenue at I-405 SB Ramps**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 726.2 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 2.276 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 146 | 874 | 743 | 141 | 128 | 169 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 146 | 874 | 743 | 141 | 128 | 169 |
| Peak Hour Factor | 0.9000 | 0.9000 | 0.9000 | 0.9000 | 0.9000 | 0.9000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 41 | 243 | 206 | 39 | 36 | 47 |
| Total Analysis Volume [veh/h] | 162 | 971 | 826 | 157 | 142 | 188 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Free | Free | Stop |
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.23 | 0.01 | 0.01 | 0.00 | 2.28 | 0.36 |
| d_M, Delay for Movement [s/veh] | 11.71 | 0.00 | 0.00 | 0.00 | 726.23 | 15.70 |
| Movement LOS | B | A | A | A | F | C |
| 95th-Percentile Queue Length [veh/ln] | 0.89 | 0.00 | 0.00 | 0.00 | 13.81 | 1.62 |
| 95th-Percentile Queue Length [ft/ln] | 22.36 | 0.00 | 0.00 | 0.00 | 345.23 | 40.54 |
| d_A, Approach Delay [s/veh] | 1.67 | | 0.00 | | 321.45 | |
| Approach LOS | A | | A | | F | |
| d_I, Intersection Delay [s/veh] | 44.14 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 12: Atlantic Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.854 |

**Intersection Setup**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 35.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 44 | 923 | 189 | 98 | 922 | 257 | 213 | 857 | 32 | 124 | 630 | 133 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 44 | 923 | 189 | 98 | 922 | 257 | 213 | 857 | 32 | 124 | 630 | 133 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 11 | 231 | 47 | 25 | 231 | 64 | 53 | 214 | 8 | 31 | 158 | 33 |
| Total Analysis Volume [veh/h] | 44 | 923 | 189 | 98 | 922 | 257 | 213 | 857 | 32 | 124 | 630 | 133 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | ProtP | Permi | Permi | ProtP | Permi | Permi | ProtP | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.35 | 0.35 | 0.06 | 0.37 | 0.37 | 0.13 | 0.27 | 0.02 | 0.08 | 0.20 | 0.08 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.854 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 13: Olive Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.532 |

**Intersection Setup**

| Name | Olive Avenue | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Olive Avenue | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 60 | 150 | 112 | 1006 | 783 | 75 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 60 | 150 | 112 | 1006 | 783 | 75 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 15 | 38 | 28 | 252 | 196 | 19 |
| Total Analysis Volume [veh/h] | 60 | 150 | 112 | 1006 | 783 | 75 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 1 | 0 | 3 | 8 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | Lead | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.09 | 0.07 | 0.31 | 0.27 | 0.27 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.532 | | | | | |

**Intersection Level Of Service Report**
**Intersection 14: California Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.722 |

**Intersection Setup**

| Name | California Avenue | | | California Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | California Avenue | | | California Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 53 | 223 | 94 | 120 | 156 | 74 | 97 | 926 | 41 | 95 | 705 | 178 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 53 | 223 | 94 | 120 | 156 | 74 | 97 | 926 | 41 | 95 | 705 | 178 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 13 | 56 | 24 | 30 | 39 | 19 | 24 | 232 | 10 | 24 | 176 | 45 |
| Total Analysis Volume [veh/h] | 53 | 223 | 94 | 120 | 156 | 74 | 97 | 926 | 41 | 95 | 705 | 178 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.20 | 0.20 | 0.08 | 0.10 | 0.05 | 0.06 | 0.29 | 0.03 | 0.06 | 0.22 | 0.11 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.722 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 15: Orange Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.876 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 56 | 619 | 57 | 117 | 587 | 165 | 132 | 987 | 77 | 66 | 751 | 180 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 56 | 619 | 57 | 117 | 587 | 165 | 132 | 987 | 77 | 66 | 751 | 180 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 14 | 155 | 14 | 29 | 147 | 41 | 33 | 247 | 19 | 17 | 188 | 45 |
| Total Analysis Volume [veh/h] | 56 | 619 | 57 | 117 | 587 | 165 | 132 | 987 | 77 | 66 | 751 | 180 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.19 | 0.04 | 0.07 | 0.37 | 0.10 | 0.08 | 0.33 | 0.33 | 0.04 | 0.29 | 0.29 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.876 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 16: Walnut Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.736 |

**Intersection Setup**

| Name | Walnut Avenue | | | Walnut Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 35.00 | | | 45.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Walnut Avenue | | | Walnut Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 117 | 255 | 124 | 37 | 128 | 35 | 69 | 1010 | 97 | 48 | 820 | 81 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 117 | 255 | 124 | 37 | 128 | 35 | 69 | 1010 | 97 | 48 | 820 | 81 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 29 | 64 | 31 | 9 | 32 | 9 | 17 | 253 | 24 | 12 | 205 | 20 |
| Total Analysis Volume [veh/h] | 117 | 255 | 124 | 37 | 128 | 35 | 69 | 1010 | 97 | 48 | 820 | 81 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.07 | 0.24 | 0.24 | 0.02 | 0.10 | 0.10 | 0.04 | 0.35 | 0.35 | 0.03 | 0.28 | 0.28 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.736 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 17: Cherry Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.806 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | No | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 90 | 1244 | 14 | 372 | 1545 | 154 | 209 | 987 | 134 | 99 | 599 | 383 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 90 | 1244 | 14 | 372 | 1545 | 154 | 209 | 987 | 134 | 99 | 599 | 383 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 23 | 311 | 4 | 93 | 386 | 39 | 52 | 247 | 34 | 25 | 150 | 96 |
| Total Analysis Volume [veh/h] | 90 | 1244 | 14 | 372 | 1545 | 154 | 209 | 987 | 134 | 99 | 599 | 383 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.06 | 0.26 | 0.26 | 0.13 | 0.35 | 0.35 | 0.13 | 0.23 | 0.23 | 0.06 | 0.15 | 0.15 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.806 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 18: I-405 SB Off-Ramp at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.764 |

**Intersection Setup**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 30.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 614 | 1 | 174 | 0 | 1426 | 16 | 0 | 1230 | 0 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 614 | 1 | 174 | 0 | 1426 | 16 | 0 | 1230 | 0 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 154 | 0 | 44 | 0 | 357 | 4 | 0 | 308 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 614 | 1 | 174 | 0 | 1426 | 16 | 0 | 1230 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Split | Split | Split | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.21 | 0.21 | 0.11 | 0.00 | 0.45 | 0.45 | 0.00 | 0.38 | 0.00 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.764 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 19: Temple Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.729 |

**Intersection Setup**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | No | | | No | | | Yes | | |

**Volumes**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 431 | 32 | 130 | 35 | 68 | 89 | 55 | 1558 | 252 | 67 | 1472 | 7 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 431 | 32 | 130 | 35 | 68 | 89 | 55 | 1558 | 252 | 67 | 1472 | 7 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 108 | 8 | 33 | 9 | 17 | 22 | 14 | 390 | 63 | 17 | 368 | 2 |
| Total Analysis Volume [veh/h] | 431 | 32 | 130 | 35 | 68 | 89 | 55 | 1558 | 252 | 67 | 1472 | 7 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.15 | 0.10 | 0.10 | 0.02 | 0.06 | 0.06 | 0.03 | 0.38 | 0.38 | 0.04 | 0.31 | 0.31 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.729 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 20: Temple Avenue at I-405 NB Off-Ramp**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.468 |

**Intersection Setup**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 492 | 0 | 0 | 385 | 343 | 129 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 492 | 0 | 0 | 385 | 343 | 129 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h] | 123 | 0 | 0 | 96 | 86 | 0 |
| Total Analysis Volume [veh/h] | 492 | 0 | 0 | 385 | 343 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 2 | 0 | 0 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | - | - | - | - | Lead | - |

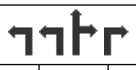
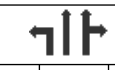
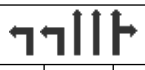
**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.15 | 0.00 | 0.00 | 0.12 | 0.21 | 0.00 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.468 | | | | | |

**Intersection Level Of Service Report**
**Intersection 21: Redondo Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.765 |

**Intersection Setup**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | | | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 576 | 30 | 401 | 49 | 38 | 10 | 9 | 1289 | 403 | 237 | 885 | 38 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 576 | 30 | 401 | 49 | 38 | 10 | 9 | 1289 | 403 | 237 | 885 | 38 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 144 | 8 | 100 | 12 | 10 | 3 | 2 | 322 | 101 | 59 | 221 | 10 |
| Total Analysis Volume [veh/h] | 576 | 30 | 401 | 49 | 38 | 10 | 9 | 1289 | 403 | 237 | 885 | 38 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.20 | 0.13 | 0.13 | 0.03 | 0.02 | 0.02 | 0.01 | 0.35 | 0.35 | 0.08 | 0.19 | 0.19 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.765 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 22: Kilroy Airport Way at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.847 |

**Intersection Setup**

| Name | Kilroy Airport Way | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Kilroy Airport Way | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 164 | 521 | 1751 | 34 | 54 | 945 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 164 | 521 | 1751 | 34 | 54 | 945 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 41 | 130 | 438 | 9 | 14 | 236 |
| Total Analysis Volume [veh/h] | 164 | 521 | 1751 | 34 | 54 | 945 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Protected | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 5 | 0 | 8 | 0 | 7 | 4 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | Lead | - |

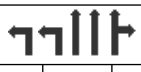
**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.10 | 0.18 | 0.55 | 0.02 | 0.02 | 0.30 |
| Intersection LOS | D | | | | | |
| Intersection V/C | 0.847 | | | | | |

**Intersection Level Of Service Report**
**Intersection 23: Lakewood Boulevard at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.857 |

**Intersection Setup**

| Name | Lakewood Boulevard | | | Lakewood Boulevard | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | |  | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 45.00 | | | 45.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Lakewood Boulevard | | | Lakewood Boulevard | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 53 | 1480 | 204 | 258 | 1586 | 425 | 686 | 1356 | 191 | 246 | 561 | 271 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 53 | 1480 | 204 | 258 | 1586 | 425 | 686 | 1356 | 191 | 246 | 561 | 271 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 13 | 370 | 51 | 65 | 397 | 106 | 172 | 339 | 48 | 62 | 140 | 68 |
| Total Analysis Volume [veh/h] | 53 | 1480 | 204 | 258 | 1586 | 425 | 686 | 1356 | 191 | 246 | 561 | 271 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Overla | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 6 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | 3,6 | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.23 | 0.13 | 0.09 | 0.33 | 0.00 | 0.24 | 0.32 | 0.32 | 0.09 | 0.12 | 0.17 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.857 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 24: Orange Avenue at 29th Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 34.0 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.015 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | 29th Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | 29th Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 653 | 6 | 12 | 726 | 2 | 48 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 653 | 6 | 12 | 726 | 2 | 48 |
| Peak Hour Factor | 0.9300 | 0.9300 | 0.9300 | 0.9300 | 0.9300 | 0.9300 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 176 | 2 | 3 | 195 | 1 | 13 |
| Total Analysis Volume [veh/h] | 702 | 6 | 13 | 781 | 2 | 52 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | No |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.01 | 0.00 | 0.01 | 0.01 | 0.02 | 0.12 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 9.10 | 0.00 | 34.04 | 14.64 |
| Movement LOS | A | A | A | A | D | B |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.04 | 0.00 | 0.46 | 0.46 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 1.11 | 0.00 | 11.53 | 11.53 |
| d_A, Approach Delay [s/veh] | 0.00 | | 0.15 | | 15.36 | |
| Approach LOS | A | | A | | C | |
| d_I, Intersection Delay [s/veh] | 0.61 | | | | | |
| Intersection LOS | D | | | | | |

**Intersection Level Of Service Report**
**Intersection 25: California Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.604 |

**Intersection Setup**

| Name | California Ave | | | California Ave | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | California Ave | | | California Ave | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 31 | 108 | 40 | 67 | 136 | 72 | 121 | 1507 | 53 | 41 | 1218 | 76 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 31 | 108 | 40 | 67 | 136 | 72 | 121 | 1507 | 53 | 41 | 1218 | 76 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 8 | 27 | 10 | 17 | 34 | 18 | 30 | 377 | 13 | 10 | 305 | 19 |
| Total Analysis Volume [veh/h] | 31 | 108 | 40 | 67 | 136 | 72 | 121 | 1507 | 53 | 41 | 1218 | 76 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.11 | 0.11 | 0.04 | 0.13 | 0.05 | 0.08 | 0.33 | 0.33 | 0.03 | 0.27 | 0.27 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.604 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 26: Orange Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.866 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 60 | 538 | 97 | 67 | 538 | 90 | 126 | 1451 | 91 | 106 | 1170 | 72 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 60 | 538 | 97 | 67 | 538 | 90 | 126 | 1451 | 91 | 106 | 1170 | 72 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 15 | 135 | 24 | 17 | 135 | 23 | 32 | 363 | 23 | 27 | 293 | 18 |
| Total Analysis Volume [veh/h] | 60 | 538 | 97 | 67 | 538 | 90 | 126 | 1451 | 91 | 106 | 1170 | 72 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | ProtP | Permi | Unsig | ProtP | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.34 | 0.00 | 0.04 | 0.34 | 0.06 | 0.08 | 0.32 | 0.32 | 0.07 | 0.26 | 0.26 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.866 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 27: Walnut Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.629 |

**Intersection Setup**

| Name | Walnut Avenue | | | Walnut Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Walnut Avenue | | | Walnut Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 67 | 211 | 163 | 67 | 174 | 63 | 67 | 1439 | 60 | 92 | 1211 | 84 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 67 | 211 | 163 | 67 | 174 | 63 | 67 | 1439 | 60 | 92 | 1211 | 84 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 17 | 53 | 41 | 17 | 44 | 16 | 17 | 360 | 15 | 23 | 303 | 21 |
| Total Analysis Volume [veh/h] | 67 | 211 | 163 | 67 | 174 | 63 | 67 | 1439 | 60 | 92 | 1211 | 84 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | ProtP | Permi | Permi | ProtP | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.12 | 0.12 | 0.04 | 0.07 | 0.07 | 0.04 | 0.31 | 0.31 | 0.06 | 0.27 | 0.27 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.629 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 28: Cherry Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.868 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 119 | 980 | 167 | 374 | 1197 | 259 | 237 | 1291 | 97 | 290 | 1010 | 192 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 119 | 980 | 167 | 374 | 1197 | 259 | 237 | 1291 | 97 | 290 | 1010 | 192 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 30 | 245 | 42 | 94 | 299 | 65 | 59 | 323 | 24 | 73 | 253 | 48 |
| Total Analysis Volume [veh/h] | 119 | 980 | 167 | 374 | 1197 | 259 | 237 | 1291 | 97 | 290 | 1010 | 192 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Overla | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.07 | 0.20 | 0.00 | 0.13 | 0.30 | 0.30 | 0.08 | 0.29 | 0.29 | 0.10 | 0.25 | 0.25 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.868 | | | | | | | | | | | |

*APPENDIX B-III*

# EXISTING (2018) PLUS PROJECT WITH MITIGATION TRAFFIC CONDITIONS

**Intersection Level Of Service Report**
**Intersection 1: Cherry Avenue at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.852 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 104 | 807 | 146 | 304 | 2010 | 67 | 58 | 601 | 99 | 352 | 751 | 159 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 104 | 807 | 146 | 304 | 2010 | 67 | 58 | 601 | 99 | 352 | 751 | 159 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 26 | 202 | 37 | 76 | 503 | 17 | 15 | 150 | 25 | 88 | 188 | 40 |
| Total Analysis Volume [veh/h] | 104 | 807 | 146 | 304 | 2010 | 67 | 58 | 601 | 99 | 352 | 751 | 159 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.07 | 0.15 | 0.15 | 0.11 | 0.42 | 0.04 | 0.02 | 0.15 | 0.15 | 0.12 | 0.19 | 0.19 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.852 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Cherry Avenue at Cover Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.693 |

**Intersection Setup**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1071 | 385 | 77 | 2349 | 299 | 84 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 1071 | 385 | 77 | 2349 | 299 | 84 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 268 | 96 | 19 | 587 | 75 | 21 |
| Total Analysis Volume [veh/h] | 1071 | 385 | 77 | 2349 | 299 | 84 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 2 | 2 | 1 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | 2,7 | | | | |
| Lead / Lag | - | - | Lead | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.30 | 0.30 | 0.05 | 0.49 | 0.10 | 0.05 |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.693 | | | | | |

**Intersection Level Of Service Report**
**Intersection 5: Cherry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.750 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 14 | 1387 | 334 | 190 | 2481 | 28 | 26 | 14 | 30 | 261 | 14 | 52 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 14 | 1387 | 334 | 190 | 2481 | 28 | 26 | 14 | 30 | 261 | 14 | 52 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 4 | 347 | 84 | 48 | 620 | 7 | 7 | 4 | 8 | 65 | 4 | 13 |
| Total Analysis Volume [veh/h] | 14 | 1387 | 334 | 190 | 2481 | 28 | 26 | 14 | 30 | 261 | 14 | 52 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.29 | 0.21 | 0.12 | 0.52 | 0.52 | 0.02 | 0.03 | 0.03 | 0.09 | 0.05 | 0.05 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.750 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: Cherry Avenue at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.832 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 40.00 | | | 35.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 183 | 1403 | 312 | 502 | 1970 | 254 | 266 | 365 | 131 | 111 | 125 | 128 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 183 | 1403 | 312 | 502 | 1970 | 254 | 266 | 365 | 131 | 111 | 125 | 128 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 46 | 351 | 78 | 126 | 493 | 64 | 67 | 91 | 33 | 28 | 31 | 32 |
| Total Analysis Volume [veh/h] | 183 | 1403 | 312 | 502 | 1970 | 254 | 266 | 365 | 131 | 111 | 125 | 128 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.11 | 0.22 | 0.11 | 0.31 | 0.28 | 0.28 | 0.09 | 0.16 | 0.16 | 0.04 | 0.04 | 0.04 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.832 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Orange Avenue at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.657 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 35.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 13 | 402 | 313 | 177 | 717 | 6 | 0 | 26 | 51 | 78 | 0 | 62 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 13 | 402 | 313 | 177 | 717 | 6 | 0 | 26 | 51 | 78 | 0 | 62 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 3 | 101 | 78 | 44 | 179 | 2 | 0 | 7 | 13 | 20 | 0 | 16 |
| Total Analysis Volume [veh/h] | 13 | 402 | 313 | 177 | 717 | 6 | 0 | 26 | 51 | 78 | 0 | 62 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 7 | 0 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.25 | 0.20 | 0.11 | 0.45 | 0.45 | 0.00 | 0.05 | 0.05 | 0.05 | 0.00 | 0.04 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.657 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: Cherry Avenue at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.900 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 140 | 1965 | 280 | 344 | 1083 | 55 | 137 | 1057 | 72 | 272 | 646 | 234 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 140 | 1965 | 280 | 344 | 1083 | 55 | 137 | 1057 | 72 | 272 | 646 | 234 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 35 | 491 | 70 | 86 | 271 | 14 | 34 | 264 | 18 | 68 | 162 | 59 |
| Total Analysis Volume [veh/h] | 140 | 1965 | 280 | 344 | 1083 | 55 | 137 | 1057 | 72 | 272 | 646 | 234 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.09 | 0.35 | 0.35 | 0.12 | 0.23 | 0.03 | 0.05 | 0.24 | 0.24 | 0.09 | 0.18 | 0.18 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.900 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Cherry Avenue at Cover Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.893 |

**Intersection Setup**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 2360 | 478 | 63 | 1396 | 469 | 123 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 2360 | 478 | 63 | 1396 | 469 | 123 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 590 | 120 | 16 | 349 | 117 | 31 |
| Total Analysis Volume [veh/h] | 2360 | 478 | 63 | 1396 | 469 | 123 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 2 | 2 | 1 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | 2,7 | | | | |
| Lead / Lag | - | - | Lead | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.59 | 0.59 | 0.04 | 0.29 | 0.16 | 0.08 |
| Intersection LOS | D | | | | | |
| Intersection V/C | 0.893 | | | | | |

**Intersection Level Of Service Report**
**Intersection 5: Cherry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.881 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 29 | 2508 | 349 | 67 | 1739 | 38 | 75 | 46 | 31 | 414 | 16 | 226 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 29 | 2508 | 349 | 67 | 1739 | 38 | 75 | 46 | 31 | 414 | 16 | 226 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 7 | 627 | 87 | 17 | 435 | 10 | 19 | 12 | 8 | 104 | 4 | 57 |
| Total Analysis Volume [veh/h] | 29 | 2508 | 349 | 67 | 1739 | 38 | 75 | 46 | 31 | 414 | 16 | 226 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.52 | 0.22 | 0.04 | 0.37 | 0.37 | 0.05 | 0.05 | 0.05 | 0.14 | 0.17 | 0.17 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.881 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: Cherry Avenue at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.854 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 40.00 | | | 35.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 147 | 1846 | 149 | 164 | 1802 | 226 | 505 | 144 | 148 | 378 | 412 | 540 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 147 | 1846 | 149 | 164 | 1802 | 226 | 505 | 144 | 148 | 378 | 412 | 540 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 37 | 462 | 37 | 41 | 451 | 57 | 126 | 36 | 37 | 95 | 103 | 135 |
| Total Analysis Volume [veh/h] | 147 | 1846 | 149 | 164 | 1802 | 226 | 505 | 144 | 148 | 378 | 412 | 540 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.09 | 0.29 | 0.05 | 0.10 | 0.25 | 0.25 | 0.18 | 0.09 | 0.09 | 0.13 | 0.14 | 0.19 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.854 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Orange Avenue at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.724 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 35.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 34 | 634 | 322 | 79 | 590 | 6 | 4 | 2 | 27 | 252 | 0 | 220 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 34 | 634 | 322 | 79 | 590 | 6 | 4 | 2 | 27 | 252 | 0 | 220 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 9 | 159 | 81 | 20 | 148 | 2 | 1 | 1 | 7 | 63 | 0 | 55 |
| Total Analysis Volume [veh/h] | 34 | 634 | 322 | 79 | 590 | 6 | 4 | 2 | 27 | 252 | 0 | 220 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 7 | 0 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.40 | 0.20 | 0.05 | 0.37 | 0.37 | 0.00 | 0.02 | 0.02 | 0.16 | 0.00 | 0.14 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.724 | | | | | | | | | | | |

*APPENDIX B-IV*

# YEAR 2040 BASELINE TRAFFIC CONDITIONS

**Intersection Level Of Service Report**
**Intersection 1: Cherry Avenue at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.731 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 104 | 617 | 176 | 310 | 1354 | 67 | 58 | 643 | 99 | 373 | 803 | 170 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 104 | 617 | 176 | 310 | 1354 | 67 | 58 | 643 | 99 | 373 | 803 | 170 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 26 | 154 | 44 | 78 | 339 | 17 | 15 | 161 | 25 | 93 | 201 | 43 |
| Total Analysis Volume [veh/h] | 104 | 617 | 176 | 310 | 1354 | 67 | 58 | 643 | 99 | 373 | 803 | 170 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.07 | 0.13 | 0.00 | 0.11 | 0.28 | 0.04 | 0.02 | 0.15 | 0.15 | 0.13 | 0.20 | 0.20 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.731 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 2: Shopping Center at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.417 |

**Intersection Setup**

| Name | Shopping Center | | | Shopping Center | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | No | | | Yes | | |

**Volumes**

| Name | Shopping Center | | | Shopping Center | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 73 | 0 | 26 | 0 | 0 | 3 | 1 | 1062 | 51 | 30 | 1291 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 73 | 0 | 26 | 0 | 0 | 3 | 1 | 1062 | 51 | 30 | 1291 | 0 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 18 | 0 | 7 | 0 | 0 | 1 | 0 | 266 | 13 | 8 | 323 | 0 |
| Total Analysis Volume [veh/h] | 73 | 0 | 26 | 0 | 0 | 3 | 1 | 1062 | 51 | 30 | 1291 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.23 | 0.23 | 0.02 | 0.27 | 0.00 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.417 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Cherry Avenue at Cover Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.566 |

**Intersection Setup**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 931 | 385 | 77 | 1738 | 299 | 84 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 931 | 385 | 77 | 1738 | 299 | 84 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 233 | 96 | 19 | 435 | 75 | 21 |
| Total Analysis Volume [veh/h] | 931 | 385 | 77 | 1738 | 299 | 84 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Overlap | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 2 | 2 | 1 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | 2,7 | | | | |
| Lead / Lag | - | - | Lead | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.29 | 0.14 | 0.05 | 0.36 | 0.10 | 0.05 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.566 | | | | | |

**Intersection Level Of Service Report**
**Intersection 4: Cherry Avenue at Bixby Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.628 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Bixby Road | | | Bixby Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Bixby Road | | | Bixby Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 48 | 1248 | 19 | 41 | 2027 | 52 | 50 | 9 | 38 | 7 | 24 | 7 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 48 | 1248 | 19 | 41 | 2027 | 52 | 50 | 9 | 38 | 7 | 24 | 7 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 12 | 312 | 5 | 10 | 507 | 13 | 13 | 2 | 10 | 2 | 6 | 2 |
| Total Analysis Volume [veh/h] | 48 | 1248 | 19 | 41 | 2027 | 52 | 50 | 9 | 38 | 7 | 24 | 7 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.26 | 0.26 | 0.03 | 0.43 | 0.43 | 0.03 | 0.06 | 0.06 | 0.00 | 0.02 | 0.02 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.628 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 5: Cherry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.666 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 14 | 1310 | 193 | 11 | 2070 | 28 | 26 | 14 | 30 | 220 | 14 | 11 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 14 | 1310 | 193 | 11 | 2070 | 28 | 26 | 14 | 30 | 220 | 14 | 11 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 4 | 328 | 48 | 3 | 518 | 7 | 7 | 4 | 8 | 55 | 4 | 3 |
| Total Analysis Volume [veh/h] | 14 | 1310 | 193 | 11 | 2070 | 28 | 26 | 14 | 30 | 220 | 14 | 11 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.31 | 0.31 | 0.01 | 0.44 | 0.44 | 0.02 | 0.04 | 0.04 | 0.08 | 0.02 | 0.02 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.666 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 6: Industry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.369 |

**Intersection Setup**

| Name | Industry Avenue | | | Industry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | | 25.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Industry Avenue | | | Industry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 13 | 0 | 252 | 178 | 6 | 0 | 0 | 1 | 1 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 13 | 0 | 252 | 178 | 6 | 0 | 0 | 1 | 1 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 3 | 0 | 63 | 45 | 2 | 0 | 0 | 0 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 13 | 0 | 252 | 178 | 6 | 0 | 0 | 1 | 1 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.16 | 0.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.369 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: Cherry Avenue at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.792 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 35.00 | | | 40.00 | | | 35.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 183 | 1293 | 42 | 47 | 1972 | 249 | 262 | 23 | 131 | 39 | 17 | 23 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 183 | 1293 | 42 | 47 | 1972 | 249 | 262 | 23 | 131 | 39 | 17 | 23 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 46 | 323 | 11 | 12 | 493 | 62 | 66 | 6 | 33 | 10 | 4 | 6 |
| Total Analysis Volume [veh/h] | 183 | 1293 | 42 | 47 | 1972 | 249 | 262 | 23 | 131 | 39 | 17 | 23 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.11 | 0.40 | 0.03 | 0.03 | 0.46 | 0.46 | 0.09 | 0.10 | 0.10 | 0.01 | 0.02 | 0.02 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.792 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 8: Boeing at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.117 |

**Intersection Setup**

| Name | Boeing | | Wardlow Road | | Wardlow Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 30.00 | | 30.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Boeing | | Wardlow Road | | Wardlow Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 3 | 0 | 48 | 1 | 1 | 21 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 3 | 0 | 48 | 1 | 1 | 21 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 0 | 12 | 0 | 0 | 5 |
| Total Analysis Volume [veh/h] | 3 | 0 | 48 | 1 | 1 | 21 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Permissive | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 5 | 0 | 8 | 0 | 0 | 4 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.02 | 0.02 | 0.00 | 0.01 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.117 | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Orange Avenue at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.735 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 35.00 | | | 35.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 13 | 405 | 293 | 177 | 733 | 6 | 0 | 26 | 51 | 64 | 0 | 62 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 13 | 405 | 293 | 177 | 733 | 6 | 0 | 26 | 51 | 64 | 0 | 62 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 3 | 101 | 73 | 44 | 183 | 2 | 0 | 7 | 13 | 16 | 0 | 16 |
| Total Analysis Volume [veh/h] | 13 | 405 | 293 | 177 | 733 | 6 | 0 | 26 | 51 | 64 | 0 | 62 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 7 | 0 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.44 | 0.44 | 0.11 | 0.46 | 0.46 | 0.00 | 0.05 | 0.05 | 0.04 | 0.00 | 0.04 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.735 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 10: I-405 NB Ramps at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 11.5 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.215 |

**Intersection Setup**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 25.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 146 | 11 | 14 | 485 | 0 | 3 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 146 | 11 | 14 | 485 | 0 | 3 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 38 | 3 | 4 | 128 | 0 | 1 |
| Total Analysis Volume [veh/h] | 154 | 12 | 15 | 511 | 0 | 3 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.22 | 0.02 | 0.00 | 0.01 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 11.52 | 11.18 | 0.00 | 0.00 | 8.46 | 0.00 |
| Movement LOS | B | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.89 | 0.89 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 22.21 | 22.21 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 11.50 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 2.75 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Orange Avenue at I-405 SB Ramps**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.644 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 179 | 619 | 528 | 292 | 120 | 282 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 179 | 619 | 528 | 292 | 120 | 282 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 45 | 155 | 132 | 73 | 30 | 71 |
| Total Analysis Volume [veh/h] | 179 | 619 | 528 | 292 | 120 | 282 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protected | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 6 | 0 | 3 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.11 | 0.19 | 0.26 | 0.26 | 0.08 | 0.18 |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.644 | | | | | |

**Intersection Level Of Service Report**
**Intersection 12: Atlantic Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.799 |

**Intersection Setup**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 35.00 | | | 35.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 32 | 814 | 86 | 104 | 936 | 144 | 163 | 488 | 54 | 211 | 651 | 116 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 32 | 814 | 86 | 104 | 936 | 144 | 163 | 488 | 54 | 211 | 651 | 116 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 8 | 204 | 22 | 26 | 234 | 36 | 41 | 122 | 14 | 53 | 163 | 29 |
| Total Analysis Volume [veh/h] | 32 | 814 | 86 | 104 | 936 | 144 | 163 | 488 | 54 | 211 | 651 | 116 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.28 | 0.28 | 0.07 | 0.34 | 0.34 | 0.10 | 0.17 | 0.17 | 0.13 | 0.24 | 0.24 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.799 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 13: Olive Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.473 |

**Intersection Setup**

| Name | Olive Avenue | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Olive Avenue | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 28 | 48 | 55 | 630 | 943 | 43 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 28 | 48 | 55 | 630 | 943 | 43 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 7 | 12 | 14 | 158 | 236 | 11 |
| Total Analysis Volume [veh/h] | 28 | 48 | 55 | 630 | 943 | 43 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 1 | 0 | 3 | 8 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | Lead | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.03 | 0.03 | 0.20 | 0.31 | 0.31 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.473 | | | | | |

**Intersection Level Of Service Report**
**Intersection 14: California Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.637 |

**Intersection Setup**

| Name | California Avenue | | | California Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | California Avenue | | | California Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 69 | 175 | 70 | 102 | 136 | 72 | 38 | 542 | 47 | 98 | 849 | 98 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 69 | 175 | 70 | 102 | 136 | 72 | 38 | 542 | 47 | 98 | 849 | 98 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 17 | 44 | 18 | 26 | 34 | 18 | 10 | 136 | 12 | 25 | 212 | 25 |
| Total Analysis Volume [veh/h] | 69 | 175 | 70 | 102 | 136 | 72 | 38 | 542 | 47 | 98 | 849 | 98 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.15 | 0.15 | 0.06 | 0.09 | 0.05 | 0.02 | 0.18 | 0.18 | 0.06 | 0.30 | 0.30 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.637 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 15: Orange Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.891 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 46 | 574 | 60 | 93 | 580 | 133 | 101 | 583 | 66 | 82 | 869 | 125 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 46 | 574 | 60 | 93 | 580 | 133 | 101 | 583 | 66 | 82 | 869 | 125 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 12 | 144 | 15 | 23 | 145 | 33 | 25 | 146 | 17 | 21 | 217 | 31 |
| Total Analysis Volume [veh/h] | 46 | 574 | 60 | 93 | 580 | 133 | 101 | 583 | 66 | 82 | 869 | 125 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.36 | 0.04 | 0.06 | 0.36 | 0.08 | 0.06 | 0.20 | 0.20 | 0.05 | 0.31 | 0.31 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.891 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 16: Walnut Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.603 |

**Intersection Setup**

| Name | Walnut Avenue | | | Walnut Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 35.00 | | | 45.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Walnut Avenue | | | Walnut Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 81 | 139 | 56 | 35 | 129 | 51 | 29 | 609 | 87 | 67 | 987 | 41 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 81 | 139 | 56 | 35 | 129 | 51 | 29 | 609 | 87 | 67 | 987 | 41 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 20 | 35 | 14 | 9 | 32 | 13 | 7 | 152 | 22 | 17 | 247 | 10 |
| Total Analysis Volume [veh/h] | 81 | 139 | 56 | 35 | 129 | 51 | 29 | 609 | 87 | 67 | 987 | 41 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.12 | 0.12 | 0.02 | 0.11 | 0.11 | 0.02 | 0.22 | 0.22 | 0.04 | 0.32 | 0.32 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.603 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 17: Cherry Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.719 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | No | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 78 | 1234 | 76 | 202 | 1016 | 137 | 103 | 552 | 44 | 78 | 1015 | 271 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 78 | 1234 | 76 | 202 | 1016 | 137 | 103 | 552 | 44 | 78 | 1015 | 271 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 20 | 309 | 19 | 51 | 254 | 34 | 26 | 138 | 11 | 20 | 254 | 68 |
| Total Analysis Volume [veh/h] | 78 | 1234 | 76 | 202 | 1016 | 137 | 103 | 552 | 44 | 78 | 1015 | 271 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.27 | 0.27 | 0.07 | 0.24 | 0.24 | 0.06 | 0.12 | 0.12 | 0.05 | 0.21 | 0.17 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.719 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 18: I-405 SB Off-Ramp at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.773 |

**Intersection Setup**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 25.00 | | | 40.00 | | | 40.00 | |
| Grade [%] | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | |
| Crosswalk | | Yes | | | Yes | | | Yes | | | No | |

**Volumes**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 744 | 4 | 223 | 0 | 923 | 8 | 0 | 1321 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 744 | 4 | 223 | 0 | 923 | 8 | 0 | 1321 | 0 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 186 | 1 | 56 | 0 | 231 | 2 | 0 | 330 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 744 | 4 | 223 | 0 | 923 | 8 | 0 | 1321 | 0 |
| Pedestrian Volume [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Split | Split | Split | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.26 | 0.26 | 0.14 | 0.00 | 0.29 | 0.29 | 0.00 | 0.41 | 0.00 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.773 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 19: Temple Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.869 |

**Intersection Setup**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | No | | | No | | | Yes | | |

**Volumes**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 431 | 19 | 66 | 2 | 2 | 1 | 25 | 1121 | 255 | 93 | 1918 | 8 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 431 | 19 | 66 | 2 | 2 | 1 | 25 | 1121 | 255 | 93 | 1918 | 8 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 108 | 5 | 17 | 1 | 1 | 0 | 6 | 280 | 64 | 23 | 480 | 2 |
| Total Analysis Volume [veh/h] | 431 | 19 | 66 | 2 | 2 | 1 | 25 | 1121 | 255 | 93 | 1918 | 8 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.15 | 0.05 | 0.05 | 0.00 | 0.00 | 0.00 | 0.02 | 0.43 | 0.43 | 0.06 | 0.60 | 0.60 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.869 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 20: Temple Avenue at I-405 NB Off-Ramp**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.393 |

**Intersection Setup**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 413 | 0 | 0 | 367 | 262 | 145 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 413 | 0 | 0 | 367 | 262 | 145 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h] | 103 | 0 | 0 | 92 | 66 | 0 |
| Total Analysis Volume [veh/h] | 413 | 0 | 0 | 367 | 262 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 2 | 0 | 0 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | - | - | - | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.13 | 0.00 | 0.00 | 0.11 | 0.16 | 0.00 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.393 | | | | | |

**Intersection Level Of Service Report**
**Intersection 21: Redondo Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.833 |

**Intersection Setup**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 614 | 0 | 295 | 6 | 1 | 2 | 6 | 729 | 339 | 291 | 1464 | 10 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 614 | 0 | 295 | 6 | 1 | 2 | 6 | 729 | 339 | 291 | 1464 | 10 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 154 | 0 | 74 | 2 | 0 | 1 | 2 | 182 | 85 | 73 | 366 | 3 |
| Total Analysis Volume [veh/h] | 614 | 0 | 295 | 6 | 1 | 2 | 6 | 729 | 339 | 291 | 1464 | 10 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.21 | 0.00 | 0.09 | 0.00 | 0.00 | 0.00 | 0.00 | 0.33 | 0.33 | 0.18 | 0.46 | 0.46 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.833 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 22: Kilroy Airport Way at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.645 |

**Intersection Setup**

| Name | Kilroy Airport Way | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Kilroy Airport Way | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 13 | 40 | 793 | 245 | 473 | 1698 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 13 | 40 | 793 | 245 | 473 | 1698 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 3 | 10 | 198 | 61 | 118 | 425 |
| Total Analysis Volume [veh/h] | 13 | 40 | 793 | 245 | 473 | 1698 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Protected | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 5 | 0 | 8 | 0 | 7 | 4 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.01 | 0.25 | 0.15 | 0.16 | 0.53 |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.645 | | | | | |

**Intersection Level Of Service Report**
**Intersection 23: Lakewood Boulevard at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.855 |

**Intersection Setup**

| Name | Lakewood Boulevard | | | Lakewood Boulevard | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Lakewood Boulevard | | | Lakewood Boulevard | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 148 | 1361 | 275 | 249 | 1390 | 571 | 312 | 444 | 22 | 208 | 1467 | 200 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 148 | 1361 | 275 | 249 | 1390 | 571 | 312 | 444 | 22 | 208 | 1467 | 200 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 37 | 340 | 69 | 62 | 348 | 143 | 78 | 111 | 6 | 52 | 367 | 50 |
| Total Analysis Volume [veh/h] | 148 | 1361 | 275 | 249 | 1390 | 571 | 312 | 444 | 22 | 208 | 1467 | 200 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 6 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | 3,6 | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.21 | 0.17 | 0.09 | 0.29 | 0.09 | 0.11 | 0.10 | 0.10 | 0.07 | 0.31 | 0.13 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.855 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 24: Orange Avenue at 29th Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 34.5 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.016 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | 29th Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | 29th Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 652 | 8 | 33 | 702 | 2 | 33 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 652 | 8 | 33 | 702 | 2 | 33 |
| Peak Hour Factor | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 173 | 2 | 9 | 187 | 1 | 9 |
| Total Analysis Volume [veh/h] | 694 | 9 | 35 | 747 | 2 | 35 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | No |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.01 | 0.00 | 0.04 | 0.01 | 0.02 | 0.08 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 9.19 | 0.00 | 34.47 | 14.15 |
| Movement LOS | A | A | A | A | D | B |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.12 | 0.00 | 0.31 | 0.31 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 3.05 | 0.00 | 7.85 | 7.85 |
| d_A, Approach Delay [s/veh] | 0.00 | | 0.41 | | 15.25 | |
| Approach LOS | A | | A | | C | |
| d_I, Intersection Delay [s/veh] | 0.58 | | | | | |
| Intersection LOS | D | | | | | |

**Intersection Level Of Service Report**
**Intersection 25: California Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.630 |

**Intersection Setup**

| Name | California Ave | | | California Ave | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | California Ave | | | California Ave | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 35 | 166 | 45 | 36 | 99 | 92 | 88 | 1107 | 28 | 26 | 1379 | 56 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 35 | 166 | 45 | 36 | 99 | 92 | 88 | 1107 | 28 | 26 | 1379 | 56 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 9 | 42 | 11 | 9 | 25 | 23 | 22 | 277 | 7 | 7 | 345 | 14 |
| Total Analysis Volume [veh/h] | 35 | 166 | 45 | 36 | 99 | 92 | 88 | 1107 | 28 | 26 | 1379 | 56 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.15 | 0.15 | 0.02 | 0.08 | 0.06 | 0.06 | 0.24 | 0.24 | 0.02 | 0.30 | 0.30 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.630 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 26: Orange Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.820 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 72 | 488 | 89 | 57 | 492 | 79 | 72 | 982 | 79 | 85 | 1226 | 86 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 72 | 488 | 89 | 57 | 492 | 79 | 72 | 982 | 79 | 85 | 1226 | 86 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 18 | 122 | 22 | 14 | 123 | 20 | 18 | 246 | 20 | 21 | 307 | 22 |
| Total Analysis Volume [veh/h] | 72 | 488 | 89 | 57 | 492 | 79 | 72 | 982 | 79 | 85 | 1226 | 86 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Unsigna | ProtPer | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.31 | 0.00 | 0.04 | 0.36 | 0.36 | 0.05 | 0.22 | 0.22 | 0.05 | 0.27 | 0.27 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.820 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 27: Walnut Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.526 |

**Intersection Setup**

| Name | Walnut Avenue | | | Walnut Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Walnut Avenue | | | Walnut Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 67 | 158 | 157 | 40 | 116 | 36 | 37 | 1044 | 63 | 67 | 1289 | 53 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 67 | 158 | 157 | 40 | 116 | 36 | 37 | 1044 | 63 | 67 | 1289 | 53 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 17 | 40 | 39 | 10 | 29 | 9 | 9 | 261 | 16 | 17 | 322 | 13 |
| Total Analysis Volume [veh/h] | 67 | 158 | 157 | 40 | 116 | 36 | 37 | 1044 | 63 | 67 | 1289 | 53 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.10 | 0.10 | 0.03 | 0.05 | 0.05 | 0.02 | 0.23 | 0.23 | 0.04 | 0.28 | 0.28 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.526 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 28: Cherry Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.717 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 128 | 1165 | 170 | 136 | 767 | 175 | 184 | 986 | 80 | 230 | 1155 | 107 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 128 | 1165 | 170 | 136 | 767 | 175 | 184 | 986 | 80 | 230 | 1155 | 107 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 32 | 291 | 43 | 34 | 192 | 44 | 46 | 247 | 20 | 58 | 289 | 27 |
| Total Analysis Volume [veh/h] | 128 | 1165 | 170 | 136 | 767 | 175 | 184 | 986 | 80 | 230 | 1155 | 107 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

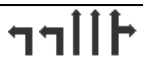
**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.08 | 0.24 | 0.03 | 0.05 | 0.20 | 0.20 | 0.06 | 0.22 | 0.22 | 0.08 | 0.26 | 0.26 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.717 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: Cherry Avenue at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.837 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 140 | 1196 | 303 | 370 | 801 | 55 | 137 | 1131 | 72 | 312 | 696 | 266 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 140 | 1196 | 303 | 370 | 801 | 55 | 137 | 1131 | 72 | 312 | 696 | 266 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 35 | 299 | 76 | 93 | 200 | 14 | 34 | 283 | 18 | 78 | 174 | 67 |
| Total Analysis Volume [veh/h] | 140 | 1196 | 303 | 370 | 801 | 55 | 137 | 1131 | 72 | 312 | 696 | 266 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.09 | 0.25 | 0.08 | 0.13 | 0.17 | 0.03 | 0.05 | 0.25 | 0.25 | 0.11 | 0.20 | 0.20 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.837 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 2: Shopping Center at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.630 |

**Intersection Setup**

| Name | Shopping Center | | | Shopping Center | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | No | | | Yes | | |

**Volumes**

| Name | Shopping Center | | | Shopping Center | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 188 | 2 | 76 | 1 | 1 | 1 | 3 | 1674 | 120 | 59 | 1087 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 188 | 2 | 76 | 1 | 1 | 1 | 3 | 1674 | 120 | 59 | 1087 | 0 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 47 | 1 | 19 | 0 | 0 | 0 | 1 | 419 | 30 | 15 | 272 | 0 |
| Total Analysis Volume [veh/h] | 188 | 2 | 76 | 1 | 1 | 1 | 3 | 1674 | 120 | 59 | 1087 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.12 | 0.12 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.37 | 0.37 | 0.04 | 0.23 | 0.00 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.630 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Cherry Avenue at Cover Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.822 |

**Intersection Setup**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1662 | 478 | 63 | 1195 | 469 | 123 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 1662 | 478 | 63 | 1195 | 469 | 123 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 416 | 120 | 16 | 299 | 117 | 31 |
| Total Analysis Volume [veh/h] | 1662 | 478 | 63 | 1195 | 469 | 123 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Overlap | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 2 | 2 | 1 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | 2,7 | | | | |
| Lead / Lag | - | - | Lead | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.52 | 0.14 | 0.04 | 0.25 | 0.16 | 0.08 |
| Intersection LOS | D | | | | | |
| Intersection V/C | 0.822 | | | | | |

**Intersection Level Of Service Report**
**Intersection 4: Cherry Avenue at Bixby Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.651 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Bixby Road | | | Bixby Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Bixby Road | | | Bixby Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 47 | 2052 | 55 | 13 | 1591 | 84 | 97 | 21 | 24 | 24 | 35 | 16 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 47 | 2052 | 55 | 13 | 1591 | 84 | 97 | 21 | 24 | 24 | 35 | 16 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 12 | 513 | 14 | 3 | 398 | 21 | 24 | 5 | 6 | 6 | 9 | 4 |
| Total Analysis Volume [veh/h] | 47 | 2052 | 55 | 13 | 1591 | 84 | 97 | 21 | 24 | 24 | 35 | 16 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.44 | 0.44 | 0.01 | 0.35 | 0.35 | 0.06 | 0.09 | 0.09 | 0.02 | 0.03 | 0.03 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.651 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 5: Cherry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.774 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 29 | 2034 | 299 | 8 | 1623 | 38 | 75 | 46 | 31 | 252 | 16 | 22 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 29 | 2034 | 299 | 8 | 1623 | 38 | 75 | 46 | 31 | 252 | 16 | 22 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 7 | 509 | 75 | 2 | 406 | 10 | 19 | 12 | 8 | 63 | 4 | 6 |
| Total Analysis Volume [veh/h] | 29 | 2034 | 299 | 8 | 1623 | 38 | 75 | 46 | 31 | 252 | 16 | 22 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.49 | 0.49 | 0.01 | 0.35 | 0.35 | 0.05 | 0.10 | 0.10 | 0.09 | 0.02 | 0.02 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.774 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 6: Industry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.513 |

**Intersection Setup**

| Name | Industry Avenue | | | Industry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | | 25.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Industry Avenue | | | Industry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 5 | 0 | 280 | 377 | 1 | 0 | 0 | 4 | 4 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 5 | 0 | 280 | 377 | 1 | 0 | 0 | 4 | 4 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 1 | 0 | 70 | 94 | 0 | 0 | 0 | 1 | 1 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 5 | 0 | 280 | 377 | 1 | 0 | 0 | 4 | 4 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.18 | 0.24 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.513 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: Cherry Avenue at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.891 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 35.00 | | | 40.00 | | | 35.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 147 | 1799 | 50 | 34 | 1656 | 226 | 505 | 26 | 148 | 68 | 22 | 48 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 147 | 1799 | 50 | 34 | 1656 | 226 | 505 | 26 | 148 | 68 | 22 | 48 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 37 | 450 | 13 | 9 | 414 | 57 | 126 | 7 | 37 | 17 | 6 | 12 |
| Total Analysis Volume [veh/h] | 147 | 1799 | 50 | 34 | 1656 | 226 | 505 | 26 | 148 | 68 | 22 | 48 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.09 | 0.56 | 0.03 | 0.02 | 0.39 | 0.39 | 0.18 | 0.12 | 0.12 | 0.02 | 0.03 | 0.03 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.891 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 8: Boeing at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.114 |

**Intersection Setup**

| Name | Boeing | | Wardlow Road | | Wardlow Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 30.00 | | 30.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Boeing | | Wardlow Road | | Wardlow Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 4 | 0 | 29 | 3 | 0 | 39 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 4 | 0 | 29 | 3 | 0 | 39 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 1 | 0 | 7 | 1 | 0 | 10 |
| Total Analysis Volume [veh/h] | 4 | 0 | 29 | 3 | 0 | 39 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Permissive | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 5 | 0 | 8 | 0 | 0 | 4 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.01 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.114 | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Orange Avenue at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.879 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 35.00 | | | 35.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 34 | 619 | 276 | 79 | 580 | 6 | 4 | 2 | 27 | 240 | 0 | 220 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 34 | 619 | 276 | 79 | 580 | 6 | 4 | 2 | 27 | 240 | 0 | 220 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 9 | 155 | 69 | 20 | 145 | 2 | 1 | 1 | 7 | 60 | 0 | 55 |
| Total Analysis Volume [veh/h] | 34 | 619 | 276 | 79 | 580 | 6 | 4 | 2 | 27 | 240 | 0 | 220 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 7 | 0 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.56 | 0.56 | 0.05 | 0.37 | 0.37 | 0.00 | 0.02 | 0.02 | 0.15 | 0.00 | 0.14 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.879 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 10: I-405 NB Ramps at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 22.6 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.705 |

**Intersection Setup**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 25.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 371 | 2 | 37 | 327 | 11 | 39 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 371 | 2 | 37 | 327 | 11 | 39 |
| Peak Hour Factor | 0.8000 | 0.8000 | 0.8000 | 0.8000 | 0.8000 | 0.8000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 116 | 1 | 12 | 102 | 3 | 12 |
| Total Analysis Volume [veh/h] | 464 | 3 | 46 | 409 | 14 | 49 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.71 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 22.64 | 21.74 | 0.00 | 0.00 | 8.30 | 0.00 |
| Movement LOS | C | C | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 5.87 | 5.87 | 0.00 | 0.00 | 0.03 | 0.03 |
| 95th-Percentile Queue Length [ft/ln] | 146.69 | 146.69 | 0.00 | 0.00 | 0.75 | 0.75 |
| d_A, Approach Delay [s/veh] | 22.64 | | 0.00 | | 1.84 | |
| Approach LOS | C | | A | | A | |
| d_I, Intersection Delay [s/veh] | 10.85 | | | | | |
| Intersection LOS | C | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Orange Avenue at I-405 SB Ramps**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.556 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 135 | 833 | 730 | 150 | 128 | 155 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 135 | 833 | 730 | 150 | 128 | 155 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 34 | 208 | 183 | 38 | 32 | 39 |
| Total Analysis Volume [veh/h] | 135 | 833 | 730 | 150 | 128 | 155 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protected | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 6 | 0 | 3 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.08 | 0.26 | 0.28 | 0.28 | 0.08 | 0.10 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.556 | | | | | |

**Intersection Level Of Service Report**
**Intersection 12: Atlantic Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.872 |

**Intersection Setup**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 35.00 | | | 35.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 44 | 919 | 189 | 98 | 778 | 187 | 192 | 887 | 32 | 124 | 629 | 133 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 44 | 919 | 189 | 98 | 778 | 187 | 192 | 887 | 32 | 124 | 629 | 133 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 11 | 230 | 47 | 25 | 195 | 47 | 48 | 222 | 8 | 31 | 157 | 33 |
| Total Analysis Volume [veh/h] | 44 | 919 | 189 | 98 | 778 | 187 | 192 | 887 | 32 | 124 | 629 | 133 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.35 | 0.35 | 0.06 | 0.30 | 0.30 | 0.12 | 0.29 | 0.29 | 0.08 | 0.24 | 0.24 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.872 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 13: Olive Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.535 |

**Intersection Setup**

| Name | Olive Avenue | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Olive Avenue | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 60 | 150 | 112 | 1046 | 792 | 75 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 60 | 150 | 112 | 1046 | 792 | 75 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 15 | 38 | 28 | 262 | 198 | 19 |
| Total Analysis Volume [veh/h] | 60 | 150 | 112 | 1046 | 792 | 75 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 1 | 0 | 3 | 8 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | Lead | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.09 | 0.07 | 0.33 | 0.27 | 0.27 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.535 | | | | | |

**Intersection Level Of Service Report**
**Intersection 14: California Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.746 |

**Intersection Setup**

| Name | California Avenue | | | California Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | California Avenue | | | California Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 53 | 223 | 94 | 120 | 156 | 74 | 97 | 961 | 41 | 95 | 708 | 178 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 53 | 223 | 94 | 120 | 156 | 74 | 97 | 961 | 41 | 95 | 708 | 178 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 13 | 56 | 24 | 30 | 39 | 19 | 24 | 240 | 10 | 24 | 177 | 45 |
| Total Analysis Volume [veh/h] | 53 | 223 | 94 | 120 | 156 | 74 | 97 | 961 | 41 | 95 | 708 | 178 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.20 | 0.20 | 0.08 | 0.10 | 0.05 | 0.06 | 0.31 | 0.31 | 0.06 | 0.28 | 0.28 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.746 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 15: Orange Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.936 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 52 | 609 | 54 | 117 | 576 | 165 | 120 | 1027 | 69 | 64 | 762 | 180 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 52 | 609 | 54 | 117 | 576 | 165 | 120 | 1027 | 69 | 64 | 762 | 180 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 13 | 152 | 14 | 29 | 144 | 41 | 30 | 257 | 17 | 16 | 191 | 45 |
| Total Analysis Volume [veh/h] | 52 | 609 | 54 | 117 | 576 | 165 | 120 | 1027 | 69 | 64 | 762 | 180 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.38 | 0.03 | 0.07 | 0.36 | 0.10 | 0.08 | 0.34 | 0.34 | 0.04 | 0.29 | 0.29 |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.936 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 16: Walnut Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.737 |

**Intersection Setup**

| Name | Walnut Avenue | | | Walnut Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 35.00 | | | 45.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Walnut Avenue | | | Walnut Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 117 | 239 | 124 | 36 | 110 | 34 | 68 | 1048 | 97 | 48 | 835 | 80 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 117 | 239 | 124 | 36 | 110 | 34 | 68 | 1048 | 97 | 48 | 835 | 80 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 29 | 60 | 31 | 9 | 28 | 9 | 17 | 262 | 24 | 12 | 209 | 20 |
| Total Analysis Volume [veh/h] | 117 | 239 | 124 | 36 | 110 | 34 | 68 | 1048 | 97 | 48 | 835 | 80 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.07 | 0.23 | 0.23 | 0.02 | 0.09 | 0.09 | 0.04 | 0.36 | 0.36 | 0.03 | 0.29 | 0.29 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.737 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 17: Cherry Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.769 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | No | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 87 | 1219 | 21 | 264 | 1331 | 117 | 205 | 1039 | 134 | 109 | 625 | 283 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 87 | 1219 | 21 | 264 | 1331 | 117 | 205 | 1039 | 134 | 109 | 625 | 283 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 22 | 305 | 5 | 66 | 333 | 29 | 51 | 260 | 34 | 27 | 156 | 71 |
| Total Analysis Volume [veh/h] | 87 | 1219 | 21 | 264 | 1331 | 117 | 205 | 1039 | 134 | 109 | 625 | 283 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.26 | 0.26 | 0.09 | 0.30 | 0.30 | 0.13 | 0.24 | 0.24 | 0.07 | 0.14 | 0.14 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.769 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 18: I-405 SB Off-Ramp at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.759 |

**Intersection Setup**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 25.00 | | | 40.00 | | | 40.00 | |
| Grade [%] | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | |
| Crosswalk | | Yes | | | Yes | | | Yes | | | No | |

**Volumes**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 638 | 1 | 144 | 0 | 1381 | 17 | 0 | 1222 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 638 | 1 | 144 | 0 | 1381 | 17 | 0 | 1222 | 0 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 160 | 0 | 36 | 0 | 345 | 4 | 0 | 306 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 638 | 1 | 144 | 0 | 1381 | 17 | 0 | 1222 | 0 |
| Pedestrian Volume [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Split | Split | Split | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.22 | 0.22 | 0.09 | 0.00 | 0.44 | 0.44 | 0.00 | 0.38 | 0.00 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.759 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 19: Temple Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.874 |

**Intersection Setup**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | No | | | No | | | Yes | | |

**Volumes**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 433 | 3 | 111 | 33 | 9 | 28 | 17 | 1541 | 252 | 67 | 1497 | 6 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 433 | 3 | 111 | 33 | 9 | 28 | 17 | 1541 | 252 | 67 | 1497 | 6 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 108 | 1 | 28 | 8 | 2 | 7 | 4 | 385 | 63 | 17 | 374 | 2 |
| Total Analysis Volume [veh/h] | 433 | 3 | 111 | 33 | 9 | 28 | 17 | 1541 | 252 | 67 | 1497 | 6 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.15 | 0.07 | 0.07 | 0.02 | 0.02 | 0.02 | 0.01 | 0.56 | 0.56 | 0.04 | 0.47 | 0.47 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.874 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 20: Temple Avenue at I-405 NB Off-Ramp**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.481 |

**Intersection Setup**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 490 | 0 | 0 | 347 | 365 | 122 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 490 | 0 | 0 | 347 | 365 | 122 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h] | 123 | 0 | 0 | 87 | 91 | 0 |
| Total Analysis Volume [veh/h] | 490 | 0 | 0 | 347 | 365 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 2 | 0 | 0 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | - | - | - | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.15 | 0.00 | 0.00 | 0.11 | 0.23 | 0.00 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.481 | | | | | |

**Intersection Level Of Service Report**
**Intersection 21: Redondo Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.979 |

**Intersection Setup**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 565 | 9 | 401 | 4 | 3 | 10 | 9 | 1313 | 385 | 237 | 913 | 8 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 565 | 9 | 401 | 4 | 3 | 10 | 9 | 1313 | 385 | 237 | 913 | 8 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 141 | 2 | 100 | 1 | 1 | 3 | 2 | 328 | 96 | 59 | 228 | 2 |
| Total Analysis Volume [veh/h] | 565 | 9 | 401 | 4 | 3 | 10 | 9 | 1313 | 385 | 237 | 913 | 8 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.20 | 0.13 | 0.13 | 0.00 | 0.00 | 0.00 | 0.01 | 0.53 | 0.53 | 0.15 | 0.29 | 0.29 |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.979 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 22: Kilroy Airport Way at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.849 |

**Intersection Setup**

| Name | Kilroy Airport Way | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Kilroy Airport Way | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 164 | 521 | 1758 | 34 | 54 | 945 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 164 | 521 | 1758 | 34 | 54 | 945 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 41 | 130 | 440 | 9 | 14 | 236 |
| Total Analysis Volume [veh/h] | 164 | 521 | 1758 | 34 | 54 | 945 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Protected | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 5 | 0 | 8 | 0 | 7 | 4 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.10 | 0.18 | 0.55 | 0.02 | 0.02 | 0.30 |
| Intersection LOS | D | | | | | |
| Intersection V/C | 0.849 | | | | | |

**Intersection Level Of Service Report**
**Intersection 23: Lakewood Boulevard at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.875 |

**Intersection Setup**

| Name | Lakewood Boulevard | | | Lakewood Boulevard | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 45.00 | | | 45.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Lakewood Boulevard | | | Lakewood Boulevard | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 47 | 1577 | 204 | 258 | 1690 | 406 | 672 | 1361 | 182 | 246 | 564 | 271 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 47 | 1577 | 204 | 258 | 1690 | 406 | 672 | 1361 | 182 | 246 | 564 | 271 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 12 | 394 | 51 | 65 | 423 | 102 | 168 | 340 | 46 | 62 | 141 | 68 |
| Total Analysis Volume [veh/h] | 47 | 1577 | 204 | 258 | 1690 | 406 | 672 | 1361 | 182 | 246 | 564 | 271 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Permiss | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 6 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | 3,6 | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.25 | 0.13 | 0.09 | 0.35 | 0.00 | 0.23 | 0.32 | 0.32 | 0.09 | 0.12 | 0.17 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.875 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 24: Orange Avenue at 29th Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 35.2 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.016 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | 29th Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | 29th Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 670 | 6 | 12 | 735 | 2 | 48 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 670 | 6 | 12 | 735 | 2 | 48 |
| Peak Hour Factor | 0.9300 | 0.9300 | 0.9300 | 0.9300 | 0.9300 | 0.9300 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 180 | 2 | 3 | 198 | 1 | 13 |
| Total Analysis Volume [veh/h] | 720 | 6 | 13 | 790 | 2 | 52 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | No |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.01 | 0.00 | 0.01 | 0.01 | 0.02 | 0.12 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 9.17 | 0.00 | 35.20 | 14.91 |
| Movement LOS | A | A | A | A | E | B |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.05 | 0.00 | 0.47 | 0.47 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 1.13 | 0.00 | 11.87 | 11.87 |
| d_A, Approach Delay [s/veh] | 0.00 | | 0.15 | | 15.66 | |
| Approach LOS | A | | A | | C | |
| d_I, Intersection Delay [s/veh] | 0.61 | | | | | |
| Intersection LOS | E | | | | | |

**Intersection Level Of Service Report**
**Intersection 25: California Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.613 |

**Intersection Setup**

| Name | California Ave | | | California Ave | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | California Ave | | | California Ave | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 31 | 108 | 40 | 67 | 136 | 72 | 121 | 1549 | 53 | 41 | 1191 | 76 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 31 | 108 | 40 | 67 | 136 | 72 | 121 | 1549 | 53 | 41 | 1191 | 76 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 8 | 27 | 10 | 17 | 34 | 18 | 30 | 387 | 13 | 10 | 298 | 19 |
| Total Analysis Volume [veh/h] | 31 | 108 | 40 | 67 | 136 | 72 | 121 | 1549 | 53 | 41 | 1191 | 76 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.11 | 0.11 | 0.04 | 0.13 | 0.05 | 0.08 | 0.33 | 0.33 | 0.03 | 0.26 | 0.26 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.613 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 26: Orange Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.928 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 60 | 557 | 97 | 64 | 553 | 76 | 118 | 1498 | 91 | 106 | 1155 | 70 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 60 | 557 | 97 | 64 | 553 | 76 | 118 | 1498 | 91 | 106 | 1155 | 70 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 15 | 139 | 24 | 16 | 138 | 19 | 30 | 375 | 23 | 27 | 289 | 18 |
| Total Analysis Volume [veh/h] | 60 | 557 | 97 | 64 | 553 | 76 | 118 | 1498 | 91 | 106 | 1155 | 70 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Unsigna | ProtPer | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.35 | 0.00 | 0.04 | 0.39 | 0.39 | 0.07 | 0.33 | 0.33 | 0.07 | 0.26 | 0.26 |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.928 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 27: Walnut Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.636 |

**Intersection Setup**

| Name | Walnut Avenue | | | Walnut Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Walnut Avenue | | | Walnut Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 67 | 208 | 163 | 63 | 171 | 52 | 58 | 1492 | 60 | 92 | 1208 | 80 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 67 | 208 | 163 | 63 | 171 | 52 | 58 | 1492 | 60 | 92 | 1208 | 80 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 17 | 52 | 41 | 16 | 43 | 13 | 15 | 373 | 15 | 23 | 302 | 20 |
| Total Analysis Volume [veh/h] | 67 | 208 | 163 | 63 | 171 | 52 | 58 | 1492 | 60 | 92 | 1208 | 80 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | ProtPer | Permiss | Permiss | ProtPer | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.12 | 0.12 | 0.04 | 0.07 | 0.07 | 0.04 | 0.32 | 0.32 | 0.06 | 0.27 | 0.27 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.636 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 28: Cherry Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.849 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 119 | 986 | 167 | 302 | 1095 | 214 | 220 | 1347 | 97 | 290 | 1038 | 167 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 119 | 986 | 167 | 302 | 1095 | 214 | 220 | 1347 | 97 | 290 | 1038 | 167 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 30 | 247 | 42 | 76 | 274 | 54 | 55 | 337 | 24 | 73 | 260 | 42 |
| Total Analysis Volume [veh/h] | 119 | 986 | 167 | 302 | 1095 | 214 | 220 | 1347 | 97 | 290 | 1038 | 167 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protecte | Permiss | Overlap | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss | Protecte | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.07 | 0.21 | 0.00 | 0.10 | 0.27 | 0.27 | 0.08 | 0.30 | 0.30 | 0.10 | 0.25 | 0.25 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.849 | | | | | | | | | | | |

*APPENDIX B-V*

# YEAR 2040 PLUS PROJECT TRAFFIC CONDITIONS

**Intersection Level Of Service Report**
**Intersection 1: Cherry Avenue at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.877 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 104 | 845 | 146 | 304 | 2094 | 67 | 58 | 640 | 99 | 352 | 800 | 159 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 104 | 845 | 146 | 304 | 2094 | 67 | 58 | 640 | 99 | 352 | 800 | 159 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 26 | 211 | 37 | 76 | 524 | 17 | 15 | 160 | 25 | 88 | 200 | 40 |
| Total Analysis Volume [veh/h] | 104 | 845 | 146 | 304 | 2094 | 67 | 58 | 640 | 99 | 352 | 800 | 159 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Overla | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.07 | 0.18 | 0.00 | 0.11 | 0.44 | 0.04 | 0.02 | 0.15 | 0.15 | 0.12 | 0.20 | 0.20 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.877 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 2: Shopping Center at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.418 |

**Intersection Setup**

| Name | Shopping Center | | | Shopping Center | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 25.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | No | | | Yes | | |

**Volumes**

| Name | Shopping Center | | | Shopping Center | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 78 | 0 | 27 | 0 | 0 | 0 | 0 | 1062 | 65 | 31 | 1291 | 0 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 78 | 0 | 27 | 0 | 0 | 0 | 0 | 1062 | 65 | 31 | 1291 | 0 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 20 | 0 | 7 | 0 | 0 | 0 | 0 | 266 | 16 | 8 | 323 | 0 |
| Total Analysis Volume [veh/h] | 78 | 0 | 27 | 0 | 0 | 0 | 0 | 1062 | 65 | 31 | 1291 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.00 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.23 | 0.23 | 0.02 | 0.27 | 0.00 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.418 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Cherry Avenue at Cover Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.715 |

**Intersection Setup**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1129 | 385 | 77 | 2456 | 299 | 84 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 1129 | 385 | 77 | 2456 | 299 | 84 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 282 | 96 | 19 | 614 | 75 | 21 |
| Total Analysis Volume [veh/h] | 1129 | 385 | 77 | 2456 | 299 | 84 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Overlap | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 2 | 2 | 1 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | 2,7 | | | | |
| Lead / Lag | - | - | Lead | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.35 | 0.14 | 0.05 | 0.51 | 0.10 | 0.05 |
| Intersection LOS | C | | | | | |
| Intersection V/C | 0.715 | | | | | |

**Intersection Level Of Service Report**
**Intersection 4: Cherry Avenue at Bixby Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.778 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Bixby Road | | | Bixby Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Bixby Road | | | Bixby Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 48 | 1446 | 19 | 41 | 2745 | 52 | 50 | 9 | 38 | 7 | 24 | 7 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 48 | 1446 | 19 | 41 | 2745 | 52 | 50 | 9 | 38 | 7 | 24 | 7 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 12 | 362 | 5 | 10 | 686 | 13 | 13 | 2 | 10 | 2 | 6 | 2 |
| Total Analysis Volume [veh/h] | 48 | 1446 | 19 | 41 | 2745 | 52 | 50 | 9 | 38 | 7 | 24 | 7 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.31 | 0.31 | 0.03 | 0.58 | 0.58 | 0.03 | 0.06 | 0.06 | 0.00 | 0.02 | 0.02 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.778 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 5: Cherry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.792 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 14 | 1467 | 334 | 190 | 2608 | 28 | 26 | 14 | 30 | 261 | 14 | 52 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 14 | 1467 | 334 | 190 | 2608 | 28 | 26 | 14 | 30 | 261 | 14 | 52 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 4 | 367 | 84 | 48 | 652 | 7 | 7 | 4 | 8 | 65 | 4 | 13 |
| Total Analysis Volume [veh/h] | 14 | 1467 | 334 | 190 | 2608 | 28 | 26 | 14 | 30 | 261 | 14 | 52 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.38 | 0.38 | 0.12 | 0.55 | 0.55 | 0.02 | 0.04 | 0.04 | 0.09 | 0.04 | 0.04 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.792 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 6: Industry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.516 |

**Intersection Setup**

| Name | Industry Avenue | | | Industry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 25.00 | | | 25.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Industry Avenue | | | Industry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 13 | 0 | 252 | 178 | 325 | 3 | 0 | 86 | 1 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 13 | 0 | 252 | 178 | 325 | 3 | 0 | 86 | 1 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 3 | 0 | 63 | 45 | 81 | 1 | 0 | 22 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 13 | 0 | 252 | 178 | 325 | 3 | 0 | 86 | 1 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 | 0.16 | 0.11 | 0.21 | 0.21 | 0.00 | 0.05 | 0.00 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.516 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: Cherry Avenue at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.141 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 40.00 | | | 35.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 183 | 1483 | 312 | 502 | 2091 | 254 | 266 | 365 | 131 | 111 | 125 | 128 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 183 | 1483 | 312 | 502 | 2091 | 254 | 266 | 365 | 131 | 111 | 125 | 128 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 46 | 371 | 78 | 126 | 523 | 64 | 67 | 91 | 33 | 28 | 31 | 32 |
| Total Analysis Volume [veh/h] | 183 | 1483 | 312 | 502 | 2091 | 254 | 266 | 365 | 131 | 111 | 125 | 128 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.11 | 0.46 | 0.20 | 0.31 | 0.49 | 0.49 | 0.09 | 0.18 | 0.18 | 0.08 | 0.09 | 0.09 |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 1.141 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 8: Boeing at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.495 |

**Intersection Setup**

| Name | Boeing | | Wardlow Road | | Wardlow Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 30.00 | | 30.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Boeing | | Wardlow Road | | Wardlow Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 149 | 0 | 480 | 615 | 1 | 164 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 149 | 0 | 480 | 615 | 1 | 164 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 37 | 0 | 120 | 154 | 0 | 41 |
| Total Analysis Volume [veh/h] | 149 | 0 | 480 | 615 | 1 | 164 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Permissive | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 5 | 0 | 8 | 0 | 0 | 4 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.00 | 0.34 | 0.34 | 0.00 | 0.05 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.495 | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Orange Avenue at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.770 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 35.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 13 | 427 | 313 | 177 | 762 | 6 | 0 | 26 | 51 | 78 | 0 | 62 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 13 | 427 | 313 | 177 | 762 | 6 | 0 | 26 | 51 | 78 | 0 | 62 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 3 | 107 | 78 | 44 | 191 | 2 | 0 | 7 | 13 | 20 | 0 | 16 |
| Total Analysis Volume [veh/h] | 13 | 427 | 313 | 177 | 762 | 6 | 0 | 26 | 51 | 78 | 0 | 62 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 7 | 0 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.46 | 0.46 | 0.11 | 0.48 | 0.48 | 0.00 | 0.05 | 0.05 | 0.05 | 0.00 | 0.04 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.770 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 10: I-405 NB Ramps at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 12.0 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.242 |

**Intersection Setup**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 25.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 160 | 11 | 17 | 502 | 4 | 3 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 160 | 11 | 17 | 502 | 4 | 3 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 42 | 3 | 4 | 132 | 1 | 1 |
| Total Analysis Volume [veh/h] | 168 | 12 | 18 | 528 | 4 | 3 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.24 | 0.02 | 0.00 | 0.01 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 11.96 | 11.53 | 0.00 | 0.00 | 8.53 | 0.00 |
| Movement LOS | B | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 1.02 | 1.02 | 0.00 | 0.00 | 0.01 | 0.01 |
| 95th-Percentile Queue Length [ft/ln] | 25.61 | 25.61 | 0.00 | 0.00 | 0.29 | 0.29 |
| d_A, Approach Delay [s/veh] | 11.93 | | 0.00 | | 4.88 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 2.98 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Orange Avenue at I-405 SB Ramps**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.681 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 187 | 656 | 570 | 292 | 123 | 311 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 187 | 656 | 570 | 292 | 123 | 311 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 47 | 164 | 143 | 73 | 31 | 78 |
| Total Analysis Volume [veh/h] | 187 | 656 | 570 | 292 | 123 | 311 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protected | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 6 | 0 | 3 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.12 | 0.21 | 0.27 | 0.27 | 0.08 | 0.19 |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.681 | | | | | |

**Intersection Level Of Service Report**
**Intersection 12: Atlantic Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.883 |

**Intersection Setup**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 35.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 32 | 979 | 86 | 104 | 991 | 160 | 224 | 520 | 54 | 211 | 667 | 116 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 32 | 979 | 86 | 104 | 991 | 160 | 224 | 520 | 54 | 211 | 667 | 116 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 8 | 245 | 22 | 26 | 248 | 40 | 56 | 130 | 14 | 53 | 167 | 29 |
| Total Analysis Volume [veh/h] | 32 | 979 | 86 | 104 | 991 | 160 | 224 | 520 | 54 | 211 | 667 | 116 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | ProtP | Permi | Permi | ProtP | Permi | Permi | ProtP | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.33 | 0.33 | 0.07 | 0.36 | 0.36 | 0.14 | 0.18 | 0.18 | 0.13 | 0.24 | 0.24 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.883 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 13: Olive Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.478 |

**Intersection Setup**

| Name | Olive Avenue | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Olive Avenue | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 28 | 48 | 55 | 662 | 959 | 43 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 28 | 48 | 55 | 662 | 959 | 43 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 7 | 12 | 14 | 166 | 240 | 11 |
| Total Analysis Volume [veh/h] | 28 | 48 | 55 | 662 | 959 | 43 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 1 | 0 | 3 | 8 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | Lead | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.03 | 0.03 | 0.21 | 0.31 | 0.31 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.478 | | | | | |

**Intersection Level Of Service Report**
**Intersection 14: California Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.642 |

**Intersection Setup**

| Name | California Avenue | | | California Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | California Avenue | | | California Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 69 | 175 | 70 | 102 | 136 | 72 | 38 | 574 | 47 | 98 | 865 | 98 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 69 | 175 | 70 | 102 | 136 | 72 | 38 | 574 | 47 | 98 | 865 | 98 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 17 | 44 | 18 | 26 | 34 | 18 | 10 | 144 | 12 | 25 | 216 | 25 |
| Total Analysis Volume [veh/h] | 69 | 175 | 70 | 102 | 136 | 72 | 38 | 574 | 47 | 98 | 865 | 98 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.15 | 0.15 | 0.06 | 0.09 | 0.05 | 0.02 | 0.19 | 0.19 | 0.06 | 0.30 | 0.30 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.642 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 15: Orange Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.912 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 47 | 595 | 61 | 93 | 620 | 133 | 107 | 612 | 70 | 85 | 884 | 125 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 47 | 595 | 61 | 93 | 620 | 133 | 107 | 612 | 70 | 85 | 884 | 125 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 12 | 149 | 15 | 23 | 155 | 33 | 27 | 153 | 18 | 21 | 221 | 31 |
| Total Analysis Volume [veh/h] | 47 | 595 | 61 | 93 | 620 | 133 | 107 | 612 | 70 | 85 | 884 | 125 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.37 | 0.04 | 0.06 | 0.39 | 0.08 | 0.07 | 0.21 | 0.21 | 0.05 | 0.32 | 0.32 |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.912 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 16: Walnut Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.615 |

**Intersection Setup**

| Name | Walnut Avenue | | | Walnut Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 35.00 | | | 45.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Walnut Avenue | | | Walnut Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 81 | 146 | 56 | 35 | 139 | 51 | 29 | 640 | 87 | 67 | 1006 | 41 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 81 | 146 | 56 | 35 | 139 | 51 | 29 | 640 | 87 | 67 | 1006 | 41 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 20 | 37 | 14 | 9 | 35 | 13 | 7 | 160 | 22 | 17 | 252 | 10 |
| Total Analysis Volume [veh/h] | 81 | 146 | 56 | 35 | 139 | 51 | 29 | 640 | 87 | 67 | 1006 | 41 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.13 | 0.13 | 0.02 | 0.12 | 0.12 | 0.02 | 0.23 | 0.23 | 0.04 | 0.33 | 0.33 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.615 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 17: Cherry Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.823 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | No | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 77 | 1514 | 59 | 224 | 1097 | 139 | 131 | 560 | 46 | 70 | 1021 | 487 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 77 | 1514 | 59 | 224 | 1097 | 139 | 131 | 560 | 46 | 70 | 1021 | 487 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 19 | 379 | 15 | 56 | 274 | 35 | 33 | 140 | 12 | 18 | 255 | 122 |
| Total Analysis Volume [veh/h] | 77 | 1514 | 59 | 224 | 1097 | 139 | 131 | 560 | 46 | 70 | 1021 | 487 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.33 | 0.33 | 0.08 | 0.26 | 0.26 | 0.08 | 0.13 | 0.13 | 0.04 | 0.24 | 0.24 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.823 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 18: I-405 SB Off-Ramp at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.806 |

**Intersection Setup**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 30.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 753 | 4 | 350 | 0 | 981 | 8 | 0 | 1417 | 0 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 753 | 4 | 350 | 0 | 981 | 8 | 0 | 1417 | 0 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 188 | 1 | 88 | 0 | 245 | 2 | 0 | 354 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 753 | 4 | 350 | 0 | 981 | 8 | 0 | 1417 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Split | Split | Split | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.26 | 0.26 | 0.22 | 0.00 | 0.31 | 0.31 | 0.00 | 0.44 | 0.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.806 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 19: Temple Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.940 |

**Intersection Setup**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | No | | | No | | | Yes | | |

**Volumes**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 423 | 57 | 86 | 3 | 30 | 30 | 63 | 1153 | 255 | 93 | 2020 | 10 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 423 | 57 | 86 | 3 | 30 | 30 | 63 | 1153 | 255 | 93 | 2020 | 10 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 106 | 14 | 22 | 1 | 8 | 8 | 16 | 288 | 64 | 23 | 505 | 3 |
| Total Analysis Volume [veh/h] | 423 | 57 | 86 | 3 | 30 | 30 | 63 | 1153 | 255 | 93 | 2020 | 10 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.15 | 0.09 | 0.09 | 0.00 | 0.02 | 0.02 | 0.04 | 0.44 | 0.44 | 0.06 | 0.63 | 0.63 |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.940 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 20: Temple Avenue at I-405 NB Off-Ramp**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.407 |

**Intersection Setup**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 458 | 0 | 0 | 395 | 262 | 151 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 458 | 0 | 0 | 395 | 262 | 151 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h] | 115 | 0 | 0 | 99 | 66 | 0 |
| Total Analysis Volume [veh/h] | 458 | 0 | 0 | 395 | 262 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 2 | 0 | 0 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | - | - | - | - | Lead | - |

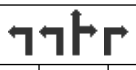
**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.14 | 0.00 | 0.00 | 0.12 | 0.16 | 0.00 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.407 | | | | | |

**Intersection Level Of Service Report**
**Intersection 21: Redondo Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.862 |

**Intersection Setup**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 628 | 28 | 295 | 30 | 20 | 2 | 6 | 750 | 349 | 291 | 1508 | 46 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 628 | 28 | 295 | 30 | 20 | 2 | 6 | 750 | 349 | 291 | 1508 | 46 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 157 | 7 | 74 | 8 | 5 | 1 | 2 | 188 | 87 | 73 | 377 | 12 |
| Total Analysis Volume [veh/h] | 628 | 28 | 295 | 30 | 20 | 2 | 6 | 750 | 349 | 291 | 1508 | 46 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.22 | 0.10 | 0.10 | 0.02 | 0.01 | 0.01 | 0.00 | 0.34 | 0.34 | 0.18 | 0.49 | 0.49 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.862 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 22: Kilroy Airport Way at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.670 |

**Intersection Setup**

| Name | Kilroy Airport Way | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Kilroy Airport Way | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 13 | 40 | 838 | 245 | 473 | 1778 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 13 | 40 | 838 | 245 | 473 | 1778 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 3 | 10 | 210 | 61 | 118 | 445 |
| Total Analysis Volume [veh/h] | 13 | 40 | 838 | 245 | 473 | 1778 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Protected | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 5 | 0 | 8 | 0 | 7 | 4 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.01 | 0.26 | 0.15 | 0.16 | 0.56 |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.670 | | | | | |

**Intersection Level Of Service Report**
**Intersection 23: Lakewood Boulevard at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.875 |

**Intersection Setup**

| Name | Lakewood Boulevard | | | Lakewood Boulevard | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 45.00 | | | 45.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Lakewood Boulevard | | | Lakewood Boulevard | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 154 | 1361 | 275 | 249 | 1390 | 582 | 326 | 471 | 27 | 208 | 1530 | 200 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 154 | 1361 | 275 | 249 | 1390 | 582 | 326 | 471 | 27 | 208 | 1530 | 200 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 39 | 340 | 69 | 62 | 348 | 146 | 82 | 118 | 7 | 52 | 383 | 50 |
| Total Analysis Volume [veh/h] | 154 | 1361 | 275 | 249 | 1390 | 582 | 326 | 471 | 27 | 208 | 1530 | 200 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Overla | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 6 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | 3,6 | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.21 | 0.17 | 0.09 | 0.29 | 0.09 | 0.11 | 0.10 | 0.10 | 0.07 | 0.32 | 0.13 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.875 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 24: Orange Avenue at 29th Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 36.3 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.017 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | 29th Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | 29th Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 676 | 8 | 33 | 717 | 2 | 33 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 676 | 8 | 33 | 717 | 2 | 33 |
| Peak Hour Factor | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 | 0.9400 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 180 | 2 | 9 | 191 | 1 | 9 |
| Total Analysis Volume [veh/h] | 719 | 9 | 35 | 763 | 2 | 35 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | No |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.01 | 0.00 | 0.04 | 0.01 | 0.02 | 0.08 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 9.28 | 0.00 | 36.28 | 14.51 |
| Movement LOS | A | A | A | A | E | B |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.12 | 0.00 | 0.33 | 0.33 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 3.12 | 0.00 | 8.17 | 8.17 |
| d_A, Approach Delay [s/veh] | 0.00 | | 0.41 | | 15.68 | |
| Approach LOS | A | | A | | C | |
| d_I, Intersection Delay [s/veh] | 0.58 | | | | | |
| Intersection LOS | E | | | | | |

**Intersection Level Of Service Report**
**Intersection 25: California Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.639 |

**Intersection Setup**

| Name | California Ave | | | California Ave | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | California Ave | | | California Ave | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 35 | 166 | 45 | 36 | 99 | 92 | 88 | 1185 | 28 | 26 | 1420 | 56 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 35 | 166 | 45 | 36 | 99 | 92 | 88 | 1185 | 28 | 26 | 1420 | 56 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 9 | 42 | 11 | 9 | 25 | 23 | 22 | 296 | 7 | 7 | 355 | 14 |
| Total Analysis Volume [veh/h] | 35 | 166 | 45 | 36 | 99 | 92 | 88 | 1185 | 28 | 26 | 1420 | 56 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.15 | 0.15 | 0.02 | 0.08 | 0.06 | 0.06 | 0.25 | 0.25 | 0.02 | 0.31 | 0.31 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.639 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 26: Orange Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.844 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 72 | 499 | 89 | 58 | 500 | 85 | 83 | 1049 | 79 | 85 | 1261 | 88 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 72 | 499 | 89 | 58 | 500 | 85 | 83 | 1049 | 79 | 85 | 1261 | 88 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 18 | 125 | 22 | 15 | 125 | 21 | 21 | 262 | 20 | 21 | 315 | 22 |
| Total Analysis Volume [veh/h] | 72 | 499 | 89 | 58 | 500 | 85 | 83 | 1049 | 79 | 85 | 1261 | 88 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | ProtP | Permi | Unsig | ProtP | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.31 | 0.00 | 0.04 | 0.37 | 0.37 | 0.05 | 0.24 | 0.24 | 0.05 | 0.28 | 0.28 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.844 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 27: Walnut Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.537 |

**Intersection Setup**

| Name | Walnut Avenue | | | Walnut Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Walnut Avenue | | | Walnut Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 67 | 159 | 157 | 42 | 117 | 43 | 42 | 1107 | 63 | 67 | 1319 | 54 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 67 | 159 | 157 | 42 | 117 | 43 | 42 | 1107 | 63 | 67 | 1319 | 54 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 17 | 40 | 39 | 11 | 29 | 11 | 11 | 277 | 16 | 17 | 330 | 14 |
| Total Analysis Volume [veh/h] | 67 | 159 | 157 | 42 | 117 | 43 | 42 | 1107 | 63 | 67 | 1319 | 54 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | ProtP | Permi | Permi | ProtP | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.10 | 0.10 | 0.03 | 0.05 | 0.05 | 0.03 | 0.24 | 0.24 | 0.04 | 0.29 | 0.29 |
| Intersection LOS | A | | | | | | | | | | | |
| Intersection V/C | 0.537 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 28: Cherry Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.788 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 128 | 1322 | 170 | 155 | 809 | 186 | 224 | 1011 | 80 | 230 | 1175 | 173 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 128 | 1322 | 170 | 155 | 809 | 186 | 224 | 1011 | 80 | 230 | 1175 | 173 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 32 | 331 | 43 | 39 | 202 | 47 | 56 | 253 | 20 | 58 | 294 | 43 |
| Total Analysis Volume [veh/h] | 128 | 1322 | 170 | 155 | 809 | 186 | 224 | 1011 | 80 | 230 | 1175 | 173 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Overla | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.08 | 0.28 | 0.03 | 0.05 | 0.21 | 0.21 | 0.08 | 0.23 | 0.23 | 0.08 | 0.28 | 0.28 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.788 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: Cherry Avenue at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.988 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | |  | | |  | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 140 | 2038 | 280 | 344 | 1132 | 55 | 137 | 1126 | 72 | 272 | 689 | 234 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 140 | 2038 | 280 | 344 | 1132 | 55 | 137 | 1126 | 72 | 272 | 689 | 234 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 35 | 510 | 70 | 86 | 283 | 14 | 34 | 282 | 18 | 68 | 172 | 59 |
| Total Analysis Volume [veh/h] | 140 | 2038 | 280 | 344 | 1132 | 55 | 137 | 1126 | 72 | 272 | 689 | 234 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Overla | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.09 | 0.42 | 0.08 | 0.12 | 0.24 | 0.03 | 0.05 | 0.25 | 0.25 | 0.09 | 0.19 | 0.19 |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.988 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 2: Shopping Center at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.621 |

**Intersection Setup**

| Name | Shopping Center | | | Shopping Center | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 25.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | No | | | Yes | | |

**Volumes**

| Name | Shopping Center | | | Shopping Center | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 182 | 2 | 75 | 0 | 1 | 0 | 0 | 1674 | 106 | 57 | 1087 | 0 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 182 | 2 | 75 | 0 | 1 | 0 | 0 | 1674 | 106 | 57 | 1087 | 0 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 46 | 1 | 19 | 0 | 0 | 0 | 0 | 419 | 27 | 14 | 272 | 0 |
| Total Analysis Volume [veh/h] | 182 | 2 | 75 | 0 | 1 | 0 | 0 | 1674 | 106 | 57 | 1087 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.11 | 0.12 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.37 | 0.37 | 0.04 | 0.23 | 0.00 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.621 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Cherry Avenue at Cover Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.072 |

**Intersection Setup**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 2462 | 478 | 63 | 1469 | 469 | 123 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 2462 | 478 | 63 | 1469 | 469 | 123 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 616 | 120 | 16 | 367 | 117 | 31 |
| Total Analysis Volume [veh/h] | 2462 | 478 | 63 | 1469 | 469 | 123 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Overlap | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 2 | 2 | 1 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | 2,7 | | | | |
| Lead / Lag | - | - | Lead | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.77 | 0.14 | 0.04 | 0.31 | 0.16 | 0.08 |
| Intersection LOS | F | | | | | |
| Intersection V/C | 1.072 | | | | | |

**Intersection Level Of Service Report**
**Intersection 4: Cherry Avenue at Bixby Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.818 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Bixby Road | | | Bixby Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Bixby Road | | | Bixby Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 47 | 2852 | 55 | 13 | 1865 | 84 | 97 | 21 | 24 | 24 | 35 | 16 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 47 | 2852 | 55 | 13 | 1865 | 84 | 97 | 21 | 24 | 24 | 35 | 16 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 12 | 713 | 14 | 3 | 466 | 21 | 24 | 5 | 6 | 6 | 9 | 4 |
| Total Analysis Volume [veh/h] | 47 | 2852 | 55 | 13 | 1865 | 84 | 97 | 21 | 24 | 24 | 35 | 16 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.61 | 0.61 | 0.01 | 0.41 | 0.41 | 0.06 | 0.09 | 0.09 | 0.02 | 0.03 | 0.03 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.818 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 5: Cherry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.009 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 29 | 2633 | 349 | 67 | 1838 | 38 | 75 | 46 | 31 | 414 | 16 | 226 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 29 | 2633 | 349 | 67 | 1838 | 38 | 75 | 46 | 31 | 414 | 16 | 226 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 7 | 658 | 87 | 17 | 460 | 10 | 19 | 12 | 8 | 104 | 4 | 57 |
| Total Analysis Volume [veh/h] | 29 | 2633 | 349 | 67 | 1838 | 38 | 75 | 46 | 31 | 414 | 16 | 226 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.62 | 0.62 | 0.04 | 0.39 | 0.39 | 0.05 | 0.10 | 0.10 | 0.14 | 0.15 | 0.15 |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 1.009 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 6: Industry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.741 |

**Intersection Setup**

| Name | Industry Avenue | | | Industry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 25.00 | | | 25.00 | | | 30.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Industry Avenue | | | Industry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 5 | 0 | 0 | 5 | 0 | 280 | 377 | 108 | 2 | 0 | 363 | 4 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 5 | 0 | 0 | 5 | 0 | 280 | 377 | 108 | 2 | 0 | 363 | 4 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 1 | 0 | 0 | 1 | 0 | 70 | 94 | 27 | 1 | 0 | 91 | 1 |
| Total Analysis Volume [veh/h] | 5 | 0 | 0 | 5 | 0 | 280 | 377 | 108 | 2 | 0 | 363 | 4 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.18 | 0.24 | 0.07 | 0.07 | 0.00 | 0.23 | 0.00 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.741 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: Cherry Avenue at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.329 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 40.00 | | | 35.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 147 | 1956 | 149 | 164 | 1903 | 226 | 505 | 144 | 148 | 378 | 412 | 540 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 147 | 1956 | 149 | 164 | 1903 | 226 | 505 | 144 | 148 | 378 | 412 | 540 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 37 | 489 | 37 | 41 | 476 | 57 | 126 | 36 | 37 | 95 | 103 | 135 |
| Total Analysis Volume [veh/h] | 147 | 1956 | 149 | 164 | 1903 | 226 | 505 | 144 | 148 | 378 | 412 | 540 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.09 | 0.61 | 0.09 | 0.10 | 0.44 | 0.44 | 0.18 | 0.18 | 0.18 | 0.26 | 0.33 | 0.33 |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 1.329 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 8: Boeing at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.500 |

**Intersection Setup**

| Name | Boeing | | Wardlow Road | | Wardlow Road | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 30.00 | | 30.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Boeing | | Wardlow Road | | Wardlow Road | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 652 | 0 | 215 | 151 | 0 | 554 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 652 | 0 | 215 | 151 | 0 | 554 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 163 | 0 | 54 | 38 | 0 | 139 |
| Total Analysis Volume [veh/h] | 652 | 0 | 215 | 151 | 0 | 554 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Permissive | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 5 | 0 | 8 | 0 | 0 | 4 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.23 | 0.00 | 0.11 | 0.11 | 0.00 | 0.17 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.500 | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Orange Avenue at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.949 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 35.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 34 | 672 | 322 | 79 | 626 | 6 | 4 | 2 | 27 | 252 | 0 | 220 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 34 | 672 | 322 | 79 | 626 | 6 | 4 | 2 | 27 | 252 | 0 | 220 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 9 | 168 | 81 | 20 | 157 | 2 | 1 | 1 | 7 | 63 | 0 | 55 |
| Total Analysis Volume [veh/h] | 34 | 672 | 322 | 79 | 626 | 6 | 4 | 2 | 27 | 252 | 0 | 220 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 7 | 0 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.62 | 0.62 | 0.05 | 0.40 | 0.40 | 0.00 | 0.02 | 0.02 | 0.16 | 0.00 | 0.14 |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.949 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 10: I-405 NB Ramps at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 29.9 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.790 |

**Intersection Setup**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 25.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 383 | 2 | 45 | 365 | 19 | 39 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 383 | 2 | 45 | 365 | 19 | 39 |
| Peak Hour Factor | 0.8000 | 0.8000 | 0.8000 | 0.8000 | 0.8000 | 0.8000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 120 | 1 | 14 | 114 | 6 | 12 |
| Total Analysis Volume [veh/h] | 479 | 3 | 56 | 456 | 24 | 49 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.79 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 |
| d_M, Delay for Movement [s/veh] | 29.85 | 28.69 | 0.00 | 0.00 | 8.50 | 0.00 |
| Movement LOS | D | D | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 7.72 | 7.72 | 0.00 | 0.00 | 0.06 | 0.06 |
| 95th-Percentile Queue Length [ft/ln] | 193.08 | 193.08 | 0.00 | 0.00 | 1.38 | 1.38 |
| d_A, Approach Delay [s/veh] | 29.85 | | 0.00 | | 2.79 | |
| Approach LOS | D | | A | | A | |
| d_I, Intersection Delay [s/veh] | 13.67 | | | | | |
| Intersection LOS | D | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Orange Avenue at I-405 SB Ramps**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.601 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 154 | 925 | 788 | 150 | 136 | 178 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 154 | 925 | 788 | 150 | 136 | 178 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 39 | 231 | 197 | 38 | 34 | 45 |
| Total Analysis Volume [veh/h] | 154 | 925 | 788 | 150 | 136 | 178 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protected | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 6 | 0 | 3 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.10 | 0.29 | 0.29 | 0.29 | 0.09 | 0.11 |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.601 | | | | | |

**Intersection Level Of Service Report**
**Intersection 12: Atlantic Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.910 |

**Intersection Setup**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 35.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 44 | 979 | 189 | 98 | 970 | 257 | 213 | 911 | 32 | 124 | 669 | 133 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 44 | 979 | 189 | 98 | 970 | 257 | 213 | 911 | 32 | 124 | 669 | 133 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 11 | 245 | 47 | 25 | 243 | 64 | 53 | 228 | 8 | 31 | 167 | 33 |
| Total Analysis Volume [veh/h] | 44 | 979 | 189 | 98 | 970 | 257 | 213 | 911 | 32 | 124 | 669 | 133 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | ProtP | Permi | Permi | ProtP | Permi | Permi | ProtP | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.37 | 0.37 | 0.06 | 0.38 | 0.38 | 0.13 | 0.29 | 0.29 | 0.08 | 0.25 | 0.25 |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.910 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 13: Olive Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.547 |

**Intersection Setup**

| Name | Olive Avenue | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Approach | Southbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Left | Thru | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Olive Avenue | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 60 | 150 | 112 | 1070 | 832 | 75 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 60 | 150 | 112 | 1070 | 832 | 75 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 15 | 38 | 28 | 268 | 208 | 19 |
| Total Analysis Volume [veh/h] | 60 | 150 | 112 | 1070 | 832 | 75 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 1 | 0 | 3 | 8 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | Lead | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.09 | 0.07 | 0.33 | 0.28 | 0.28 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.547 | | | | | |

**Intersection Level Of Service Report**
**Intersection 14: California Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.753 |

**Intersection Setup**

| Name | California Avenue | | | California Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | California Avenue | | | California Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 53 | 223 | 94 | 120 | 156 | 74 | 97 | 985 | 41 | 95 | 748 | 178 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 53 | 223 | 94 | 120 | 156 | 74 | 97 | 985 | 41 | 95 | 748 | 178 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 13 | 56 | 24 | 30 | 39 | 19 | 24 | 246 | 10 | 24 | 187 | 45 |
| Total Analysis Volume [veh/h] | 53 | 223 | 94 | 120 | 156 | 74 | 97 | 985 | 41 | 95 | 748 | 178 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.20 | 0.20 | 0.08 | 0.10 | 0.05 | 0.06 | 0.32 | 0.32 | 0.06 | 0.29 | 0.29 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.753 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 15: Orange Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.977 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 56 | 656 | 57 | 117 | 622 | 165 | 132 | 1050 | 77 | 66 | 798 | 180 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 56 | 656 | 57 | 117 | 622 | 165 | 132 | 1050 | 77 | 66 | 798 | 180 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 14 | 164 | 14 | 29 | 156 | 41 | 33 | 263 | 19 | 17 | 200 | 45 |
| Total Analysis Volume [veh/h] | 56 | 656 | 57 | 117 | 622 | 165 | 132 | 1050 | 77 | 66 | 798 | 180 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.41 | 0.04 | 0.07 | 0.39 | 0.10 | 0.08 | 0.35 | 0.35 | 0.04 | 0.31 | 0.31 |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.977 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 16: Walnut Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.756 |

**Intersection Setup**

| Name | Walnut Avenue | | | Walnut Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 35.00 | | | 45.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Walnut Avenue | | | Walnut Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 117 | 255 | 124 | 37 | 128 | 35 | 69 | 1074 | 97 | 48 | 871 | 81 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 117 | 255 | 124 | 37 | 128 | 35 | 69 | 1074 | 97 | 48 | 871 | 81 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 29 | 64 | 31 | 9 | 32 | 9 | 17 | 269 | 24 | 12 | 218 | 20 |
| Total Analysis Volume [veh/h] | 117 | 255 | 124 | 37 | 128 | 35 | 69 | 1074 | 97 | 48 | 871 | 81 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.07 | 0.24 | 0.24 | 0.02 | 0.10 | 0.10 | 0.04 | 0.37 | 0.37 | 0.03 | 0.30 | 0.30 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.756 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 17: Cherry Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.836 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | No | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 90 | 1319 | 14 | 372 | 1627 | 154 | 209 | 1051 | 134 | 99 | 638 | 383 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 90 | 1319 | 14 | 372 | 1627 | 154 | 209 | 1051 | 134 | 99 | 638 | 383 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 23 | 330 | 4 | 93 | 407 | 39 | 52 | 263 | 34 | 25 | 160 | 96 |
| Total Analysis Volume [veh/h] | 90 | 1319 | 14 | 372 | 1627 | 154 | 209 | 1051 | 134 | 99 | 638 | 383 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.06 | 0.28 | 0.28 | 0.13 | 0.37 | 0.37 | 0.13 | 0.25 | 0.25 | 0.06 | 0.16 | 0.16 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.836 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 18: I-405 SB Off-Ramp at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.804 |

**Intersection Setup**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 30.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 653 | 1 | 183 | 0 | 1510 | 17 | 0 | 1305 | 0 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 653 | 1 | 183 | 0 | 1510 | 17 | 0 | 1305 | 0 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 163 | 0 | 46 | 0 | 378 | 4 | 0 | 326 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 653 | 1 | 183 | 0 | 1510 | 17 | 0 | 1305 | 0 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Split | Split | Split | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.00 | 0.00 | 0.00 | 0.23 | 0.23 | 0.11 | 0.00 | 0.48 | 0.48 | 0.00 | 0.41 | 0.00 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.804 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 19: Temple Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.947 |

**Intersection Setup**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | No | | | No | | | Yes | | |

**Volumes**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 431 | 32 | 130 | 35 | 68 | 89 | 55 | 1653 | 252 | 67 | 1564 | 7 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 431 | 32 | 130 | 35 | 68 | 89 | 55 | 1653 | 252 | 67 | 1564 | 7 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 108 | 8 | 33 | 9 | 17 | 22 | 14 | 413 | 63 | 17 | 391 | 2 |
| Total Analysis Volume [veh/h] | 431 | 32 | 130 | 35 | 68 | 89 | 55 | 1653 | 252 | 67 | 1564 | 7 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.15 | 0.10 | 0.10 | 0.02 | 0.06 | 0.06 | 0.03 | 0.60 | 0.60 | 0.04 | 0.49 | 0.49 |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.947 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 20: Temple Avenue at I-405 NB Off-Ramp**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | A |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.491 |

**Intersection Setup**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 522 | 0 | 0 | 406 | 365 | 136 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 522 | 0 | 0 | 406 | 365 | 136 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h] | 131 | 0 | 0 | 102 | 91 | 0 |
| Total Analysis Volume [veh/h] | 522 | 0 | 0 | 406 | 365 | 0 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 2 | 0 | 0 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | - | - | - | - | Lead | - |

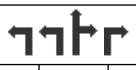
**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.16 | 0.00 | 0.00 | 0.13 | 0.23 | 0.00 |
| Intersection LOS | A | | | | | |
| Intersection V/C | 0.491 | | | | | |

**Intersection Level Of Service Report**
**Intersection 21: Redondo Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.033 |

**Intersection Setup**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 576 | 30 | 401 | 49 | 38 | 10 | 9 | 1369 | 403 | 237 | 941 | 38 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 576 | 30 | 401 | 49 | 38 | 10 | 9 | 1369 | 403 | 237 | 941 | 38 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 144 | 8 | 100 | 12 | 10 | 3 | 2 | 342 | 101 | 59 | 235 | 10 |
| Total Analysis Volume [veh/h] | 576 | 30 | 401 | 49 | 38 | 10 | 9 | 1369 | 403 | 237 | 941 | 38 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.20 | 0.13 | 0.13 | 0.03 | 0.02 | 0.02 | 0.01 | 0.55 | 0.55 | 0.15 | 0.31 | 0.31 |
| Intersection LOS | F | | | | | | | | | | | |
| Intersection V/C | 1.033 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 22: Kilroy Airport Way at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.881 |

**Intersection Setup**

| Name | Kilroy Airport Way | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | Yes | | No | | No | |

**Volumes**

| Name | Kilroy Airport Way | | Spring Street | | Spring Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 164 | 521 | 1859 | 34 | 54 | 1003 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 164 | 521 | 1859 | 34 | 54 | 1003 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 41 | 130 | 465 | 9 | 14 | 251 |
| Total Analysis Volume [veh/h] | 164 | 521 | 1859 | 34 | 54 | 1003 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Protected | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 5 | 0 | 8 | 0 | 7 | 4 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.10 | 0.18 | 0.58 | 0.02 | 0.02 | 0.31 |
| Intersection LOS | D | | | | | |
| Intersection V/C | 0.881 | | | | | |

**Intersection Level Of Service Report**
**Intersection 23: Lakewood Boulevard at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.896 |

**Intersection Setup**

| Name | Lakewood Boulevard | | | Lakewood Boulevard | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 45.00 | | | 45.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Lakewood Boulevard | | | Lakewood Boulevard | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 53 | 1577 | 204 | 258 | 1690 | 425 | 686 | 1440 | 191 | 246 | 596 | 271 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 53 | 1577 | 204 | 258 | 1690 | 425 | 686 | 1440 | 191 | 246 | 596 | 271 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 13 | 394 | 51 | 65 | 423 | 106 | 172 | 360 | 48 | 62 | 149 | 68 |
| Total Analysis Volume [veh/h] | 53 | 1577 | 204 | 258 | 1690 | 425 | 686 | 1440 | 191 | 246 | 596 | 271 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Overla | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 6 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | 3,6 | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.25 | 0.13 | 0.09 | 0.35 | 0.00 | 0.24 | 0.34 | 0.34 | 0.09 | 0.12 | 0.17 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.896 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 24: Orange Avenue at 29th Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 38.1 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.018 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | 29th Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | 29th Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 694 | 6 | 12 | 771 | 2 | 48 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 694 | 6 | 12 | 771 | 2 | 48 |
| Peak Hour Factor | 0.9300 | 0.9300 | 0.9300 | 0.9300 | 0.9300 | 0.9300 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 187 | 2 | 3 | 207 | 1 | 13 |
| Total Analysis Volume [veh/h] | 746 | 6 | 13 | 829 | 2 | 52 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | No |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.01 | 0.00 | 0.02 | 0.01 | 0.02 | 0.13 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 9.26 | 0.00 | 38.11 | 15.34 |
| Movement LOS | A | A | A | A | E | C |
| 95th-Percentile Queue Length [veh/ln] | 0.00 | 0.00 | 0.05 | 0.00 | 0.50 | 0.50 |
| 95th-Percentile Queue Length [ft/ln] | 0.00 | 0.00 | 1.15 | 0.00 | 12.44 | 12.44 |
| d_A, Approach Delay [s/veh] | 0.00 | | 0.14 | | 16.19 | |
| Approach LOS | A | | A | | C | |
| d_I, Intersection Delay [s/veh] | 0.60 | | | | | |
| Intersection LOS | E | | | | | |

**Intersection Level Of Service Report**
**Intersection 25: California Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.624 |

**Intersection Setup**

| Name | California Ave | | | California Ave | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 35.00 | | | 35.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | California Ave | | | California Ave | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 31 | 108 | 40 | 67 | 136 | 72 | 121 | 1602 | 53 | 41 | 1291 | 76 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 31 | 108 | 40 | 67 | 136 | 72 | 121 | 1602 | 53 | 41 | 1291 | 76 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 8 | 27 | 10 | 17 | 34 | 18 | 30 | 401 | 13 | 10 | 323 | 19 |
| Total Analysis Volume [veh/h] | 31 | 108 | 40 | 67 | 136 | 72 | 121 | 1602 | 53 | 41 | 1291 | 76 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.11 | 0.11 | 0.04 | 0.13 | 0.05 | 0.08 | 0.34 | 0.34 | 0.03 | 0.28 | 0.28 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.624 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 26: Orange Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.958 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 60 | 572 | 97 | 67 | 572 | 90 | 126 | 1543 | 91 | 106 | 1241 | 72 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 60 | 572 | 97 | 67 | 572 | 90 | 126 | 1543 | 91 | 106 | 1241 | 72 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 15 | 143 | 24 | 17 | 143 | 23 | 32 | 386 | 23 | 27 | 310 | 18 |
| Total Analysis Volume [veh/h] | 60 | 572 | 97 | 67 | 572 | 90 | 126 | 1543 | 91 | 106 | 1241 | 72 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | ProtP | Permi | Unsig | ProtP | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.36 | 0.00 | 0.04 | 0.41 | 0.41 | 0.08 | 0.34 | 0.34 | 0.07 | 0.27 | 0.27 |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.958 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 27: Walnut Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.648 |

**Intersection Setup**

| Name | Walnut Avenue | | | Walnut Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Walnut Avenue | | | Walnut Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 67 | 211 | 163 | 67 | 174 | 63 | 67 | 1531 | 60 | 92 | 1285 | 84 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 67 | 211 | 163 | 67 | 174 | 63 | 67 | 1531 | 60 | 92 | 1285 | 84 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 17 | 53 | 41 | 17 | 44 | 16 | 17 | 383 | 15 | 23 | 321 | 21 |
| Total Analysis Volume [veh/h] | 67 | 211 | 163 | 67 | 174 | 63 | 67 | 1531 | 60 | 92 | 1285 | 84 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | ProtP | Permi | Permi | ProtP | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.12 | 0.12 | 0.04 | 0.07 | 0.07 | 0.04 | 0.33 | 0.33 | 0.06 | 0.29 | 0.29 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.648 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 28: Cherry Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.899 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 119 | 1040 | 167 | 374 | 1264 | 259 | 237 | 1373 | 97 | 290 | 1074 | 192 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 119 | 1040 | 167 | 374 | 1264 | 259 | 237 | 1373 | 97 | 290 | 1074 | 192 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 30 | 260 | 42 | 94 | 316 | 65 | 59 | 343 | 24 | 73 | 269 | 48 |
| Total Analysis Volume [veh/h] | 119 | 1040 | 167 | 374 | 1264 | 259 | 237 | 1373 | 97 | 290 | 1074 | 192 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Overla | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.07 | 0.22 | 0.00 | 0.13 | 0.32 | 0.32 | 0.08 | 0.31 | 0.31 | 0.10 | 0.26 | 0.26 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.899 | | | | | | | | | | | |

*APPENDIX B-VI*

# YEAR 2040 PLUS PROJECT WITH MITIGATION TRAFFIC CONDITIONS

**Intersection Level Of Service Report**
**Intersection 1: Cherry Avenue at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.839 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 104 | 845 | 146 | 304 | 2094 | 67 | 58 | 640 | 99 | 352 | 800 | 159 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 104 | 845 | 146 | 304 | 2094 | 67 | 58 | 640 | 99 | 352 | 800 | 159 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 26 | 211 | 37 | 76 | 524 | 17 | 15 | 160 | 25 | 88 | 200 | 40 |
| Total Analysis Volume [veh/h] | 104 | 845 | 146 | 304 | 2094 | 67 | 58 | 640 | 99 | 352 | 800 | 159 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.07 | 0.15 | 0.15 | 0.11 | 0.44 | 0.04 | 0.02 | 0.12 | 0.12 | 0.12 | 0.20 | 0.20 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.839 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Cherry Avenue at Cover Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.715 |

**Intersection Setup**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 1129 | 385 | 77 | 2456 | 299 | 84 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 1129 | 385 | 77 | 2456 | 299 | 84 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 282 | 96 | 19 | 614 | 75 | 21 |
| Total Analysis Volume [veh/h] | 1129 | 385 | 77 | 2456 | 299 | 84 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Overlap | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 2 | 2 | 1 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | 2,7 | | | | |
| Lead / Lag | - | - | Lead | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.24 | 0.14 | 0.05 | 0.51 | 0.10 | 0.05 |
| Intersection LOS | C | | | | | |
| Intersection V/C | 0.715 | | | | | |

**Intersection Level Of Service Report**
**Intersection 5: Cherry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.776 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 14 | 1467 | 334 | 190 | 2608 | 28 | 26 | 14 | 30 | 261 | 14 | 52 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 14 | 1467 | 334 | 190 | 2608 | 28 | 26 | 14 | 30 | 261 | 14 | 52 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 4 | 367 | 84 | 48 | 652 | 7 | 7 | 4 | 8 | 65 | 4 | 13 |
| Total Analysis Volume [veh/h] | 14 | 1467 | 334 | 190 | 2608 | 28 | 26 | 14 | 30 | 261 | 14 | 52 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.31 | 0.21 | 0.12 | 0.55 | 0.55 | 0.02 | 0.03 | 0.03 | 0.09 | 0.04 | 0.04 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.776 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: Cherry Avenue at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.845 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 40.00 | | | 35.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 183 | 1483 | 312 | 502 | 2091 | 254 | 266 | 365 | 131 | 111 | 125 | 128 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 183 | 1483 | 312 | 502 | 2091 | 254 | 266 | 365 | 131 | 111 | 125 | 128 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 46 | 371 | 78 | 126 | 523 | 64 | 67 | 91 | 33 | 28 | 31 | 32 |
| Total Analysis Volume [veh/h] | 183 | 1483 | 312 | 502 | 2091 | 254 | 266 | 365 | 131 | 111 | 125 | 128 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.11 | 0.23 | 0.11 | 0.31 | 0.29 | 0.29 | 0.09 | 0.16 | 0.16 | 0.04 | 0.04 | 0.04 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.845 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Orange Avenue at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.685 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 35.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 13 | 427 | 313 | 177 | 762 | 6 | 0 | 26 | 51 | 78 | 0 | 62 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 13 | 427 | 313 | 177 | 762 | 6 | 0 | 26 | 51 | 78 | 0 | 62 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 3 | 107 | 78 | 44 | 191 | 2 | 0 | 7 | 13 | 20 | 0 | 16 |
| Total Analysis Volume [veh/h] | 13 | 427 | 313 | 177 | 762 | 6 | 0 | 26 | 51 | 78 | 0 | 62 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 7 | 0 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.01 | 0.27 | 0.20 | 0.11 | 0.48 | 0.48 | 0.00 | 0.05 | 0.05 | 0.05 | 0.00 | 0.04 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.685 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 12: Atlantic Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.801 |

**Intersection Setup**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 35.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 32 | 979 | 86 | 104 | 991 | 160 | 224 | 520 | 54 | 211 | 667 | 116 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 32 | 979 | 86 | 104 | 991 | 160 | 224 | 520 | 54 | 211 | 667 | 116 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 8 | 245 | 22 | 26 | 248 | 40 | 56 | 130 | 14 | 53 | 167 | 29 |
| Total Analysis Volume [veh/h] | 32 | 979 | 86 | 104 | 991 | 160 | 224 | 520 | 54 | 211 | 667 | 116 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | ProtP | Permi | Permi | ProtP | Permi | Permi | ProtP | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.33 | 0.33 | 0.07 | 0.36 | 0.36 | 0.14 | 0.12 | 0.12 | 0.13 | 0.16 | 0.16 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.801 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 15: Orange Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.747 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 47 | 595 | 61 | 93 | 620 | 133 | 107 | 612 | 70 | 85 | 884 | 125 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 47 | 595 | 61 | 93 | 620 | 133 | 107 | 612 | 70 | 85 | 884 | 125 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 12 | 149 | 15 | 23 | 155 | 33 | 27 | 153 | 18 | 21 | 221 | 31 |
| Total Analysis Volume [veh/h] | 47 | 595 | 61 | 93 | 620 | 133 | 107 | 612 | 70 | 85 | 884 | 125 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.21 | 0.21 | 0.06 | 0.24 | 0.24 | 0.07 | 0.21 | 0.21 | 0.05 | 0.32 | 0.32 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.747 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 19: Temple Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.729 |

**Intersection Setup**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | No | | | No | | | Yes | | |

**Volumes**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 423 | 57 | 86 | 3 | 30 | 30 | 63 | 1153 | 255 | 93 | 2020 | 10 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 423 | 57 | 86 | 3 | 30 | 30 | 63 | 1153 | 255 | 93 | 2020 | 10 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 106 | 14 | 22 | 1 | 8 | 8 | 16 | 288 | 64 | 23 | 505 | 3 |
| Total Analysis Volume [veh/h] | 423 | 57 | 86 | 3 | 30 | 30 | 63 | 1153 | 255 | 93 | 2020 | 10 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

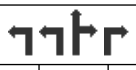
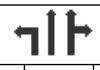
**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.15 | 0.09 | 0.09 | 0.00 | 0.02 | 0.02 | 0.04 | 0.36 | 0.16 | 0.06 | 0.42 | 0.42 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.729 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 21: Redondo Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.826 |

**Intersection Setup**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | |  | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 628 | 28 | 295 | 30 | 20 | 2 | 6 | 750 | 349 | 291 | 1508 | 46 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 628 | 28 | 295 | 30 | 20 | 2 | 6 | 750 | 349 | 291 | 1508 | 46 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 157 | 7 | 74 | 8 | 5 | 1 | 2 | 188 | 87 | 73 | 377 | 12 |
| Total Analysis Volume [veh/h] | 628 | 28 | 295 | 30 | 20 | 2 | 6 | 750 | 349 | 291 | 1508 | 46 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.22 | 0.11 | 0.11 | 0.02 | 0.01 | 0.01 | 0.00 | 0.23 | 0.23 | 0.18 | 0.49 | 0.49 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.826 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 26: Orange Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.661 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 72 | 499 | 89 | 58 | 500 | 85 | 83 | 1049 | 79 | 85 | 1261 | 88 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 72 | 499 | 89 | 58 | 500 | 85 | 83 | 1049 | 79 | 85 | 1261 | 88 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 18 | 125 | 22 | 15 | 125 | 21 | 21 | 262 | 20 | 21 | 315 | 22 |
| Total Analysis Volume [veh/h] | 72 | 499 | 89 | 58 | 500 | 85 | 83 | 1049 | 79 | 85 | 1261 | 88 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | ProtP | Permi | Unsig | ProtP | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.05 | 0.16 | 0.00 | 0.04 | 0.18 | 0.18 | 0.05 | 0.24 | 0.24 | 0.05 | 0.28 | 0.28 |
| Intersection LOS | B | | | | | | | | | | | |
| Intersection V/C | 0.661 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 1: Cherry Avenue at Carson Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.863 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Carson Street | | | Carson Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 140 | 2038 | 280 | 344 | 1132 | 55 | 137 | 1126 | 72 | 272 | 689 | 234 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 140 | 2038 | 280 | 344 | 1132 | 55 | 137 | 1126 | 72 | 272 | 689 | 234 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 35 | 510 | 70 | 86 | 283 | 14 | 34 | 282 | 18 | 68 | 172 | 59 |
| Total Analysis Volume [veh/h] | 140 | 2038 | 280 | 344 | 1132 | 55 | 137 | 1126 | 72 | 272 | 689 | 234 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | 2,7 | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.09 | 0.36 | 0.36 | 0.12 | 0.24 | 0.03 | 0.05 | 0.19 | 0.19 | 0.09 | 0.19 | 0.19 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.863 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 3: Cherry Avenue at Cover Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.815 |

**Intersection Setup**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 40.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Cherry Avenue | | Cherry Avenue | | Cover Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 2462 | 478 | 63 | 1469 | 469 | 123 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 2462 | 478 | 63 | 1469 | 469 | 123 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 616 | 120 | 16 | 367 | 117 | 31 |
| Total Analysis Volume [veh/h] | 2462 | 478 | 63 | 1469 | 469 | 123 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permissive | Overlap | Protected | Permissive | Permissive | Permissive |
|---|---|---|---|---|---|---|
| Signal group | 2 | 2 | 1 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | 2,7 | | | | |
| Lead / Lag | - | - | Lead | - | Lead | - |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.51 | 0.14 | 0.04 | 0.31 | 0.16 | 0.08 |
| Intersection LOS | D | | | | | |
| Intersection V/C | 0.815 | | | | | |

**Intersection Level Of Service Report**
**Intersection 5: Cherry Avenue at 36th Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.889 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 25.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | 36th Street | | | 36th Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 29 | 2633 | 349 | 67 | 1838 | 38 | 75 | 46 | 31 | 414 | 16 | 226 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 29 | 2633 | 349 | 67 | 1838 | 38 | 75 | 46 | 31 | 414 | 16 | 226 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 7 | 658 | 87 | 17 | 460 | 10 | 19 | 12 | 8 | 104 | 4 | 57 |
| Total Analysis Volume [veh/h] | 29 | 2633 | 349 | 67 | 1838 | 38 | 75 | 46 | 31 | 414 | 16 | 226 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.55 | 0.22 | 0.04 | 0.39 | 0.39 | 0.05 | 0.05 | 0.05 | 0.14 | 0.15 | 0.15 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.889 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 7: Cherry Avenue at Wardlow Road**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.871 |

**Intersection Setup**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 40.00 | | | 35.00 | | | 30.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Cherry Avenue | | | Cherry Avenue | | | Wardlow Road | | | Wardlow Road | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 147 | 1956 | 149 | 164 | 1903 | 226 | 505 | 144 | 148 | 378 | 412 | 540 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 147 | 1956 | 149 | 164 | 1903 | 226 | 505 | 144 | 148 | 378 | 412 | 540 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 37 | 489 | 37 | 41 | 476 | 57 | 126 | 36 | 37 | 95 | 103 | 135 |
| Total Analysis Volume [veh/h] | 147 | 1956 | 149 | 164 | 1903 | 226 | 505 | 144 | 148 | 378 | 412 | 540 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Protec | Permi | Permi | Protec | Permi | Permi | Split | Split | Split | Split | Split | Split |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 2 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.09 | 0.31 | 0.05 | 0.10 | 0.27 | 0.27 | 0.18 | 0.09 | 0.09 | 0.13 | 0.13 | 0.19 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.871 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 9: Orange Avenue at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.748 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 35.00 | | | 25.00 | | | 25.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | No | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | 32nd Street | | | 32nd Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 34 | 672 | 322 | 79 | 626 | 6 | 4 | 2 | 27 | 252 | 0 | 220 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 34 | 672 | 322 | 79 | 626 | 6 | 4 | 2 | 27 | 252 | 0 | 220 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 9 | 168 | 81 | 20 | 157 | 2 | 1 | 1 | 7 | 63 | 0 | 55 |
| Total Analysis Volume [veh/h] | 34 | 672 | 322 | 79 | 626 | 6 | 4 | 2 | 27 | 252 | 0 | 220 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 0 | 8 | 0 | 7 | 0 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.02 | 0.42 | 0.20 | 0.05 | 0.40 | 0.40 | 0.00 | 0.02 | 0.02 | 0.16 | 0.00 | 0.14 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.748 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 12: Atlantic Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.826 |

**Intersection Setup**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 35.00 | | | 35.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Atlantic Avenue | | | Atlantic Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 44 | 979 | 189 | 98 | 970 | 257 | 213 | 911 | 32 | 124 | 669 | 133 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 44 | 979 | 189 | 98 | 970 | 257 | 213 | 911 | 32 | 124 | 669 | 133 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 11 | 245 | 47 | 25 | 243 | 64 | 53 | 228 | 8 | 31 | 167 | 33 |
| Total Analysis Volume [veh/h] | 44 | 979 | 189 | 98 | 970 | 257 | 213 | 911 | 32 | 124 | 669 | 133 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | ProtP | Permi | Permi | ProtP | Permi | Permi | ProtP | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.03 | 0.37 | 0.37 | 0.06 | 0.38 | 0.38 | 0.13 | 0.20 | 0.20 | 0.08 | 0.17 | 0.17 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.826 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 15: Orange Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.789 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 45.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 56 | 656 | 57 | 117 | 622 | 165 | 132 | 1050 | 77 | 66 | 798 | 180 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 56 | 656 | 57 | 117 | 622 | 165 | 132 | 1050 | 77 | 66 | 798 | 180 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 14 | 164 | 14 | 29 | 156 | 41 | 33 | 263 | 19 | 17 | 200 | 45 |
| Total Analysis Volume [veh/h] | 56 | 656 | 57 | 117 | 622 | 165 | 132 | 1050 | 77 | 66 | 798 | 180 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.22 | 0.22 | 0.07 | 0.25 | 0.25 | 0.08 | 0.35 | 0.35 | 0.04 | 0.31 | 0.31 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.789 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 19: Temple Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.873 |

**Intersection Setup**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | No | | | No | | | Yes | | |

**Volumes**

| Name | Temple Avenue | | | Temple Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 431 | 32 | 130 | 35 | 68 | 89 | 55 | 1653 | 252 | 67 | 1564 | 7 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 431 | 32 | 130 | 35 | 68 | 89 | 55 | 1653 | 252 | 67 | 1564 | 7 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 108 | 8 | 33 | 9 | 17 | 22 | 14 | 413 | 63 | 17 | 391 | 2 |
| Total Analysis Volume [veh/h] | 431 | 32 | 130 | 35 | 68 | 89 | 55 | 1653 | 252 | 67 | 1564 | 7 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

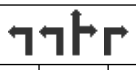
**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.15 | 0.10 | 0.10 | 0.02 | 0.06 | 0.06 | 0.03 | 0.52 | 0.16 | 0.05 | 0.33 | 0.33 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.873 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 21: Redondo Avenue at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.848 |

**Intersection Setup**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration |  | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Redondo Avenue | | | Redondo Avenue | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 576 | 30 | 401 | 49 | 38 | 10 | 9 | 1369 | 403 | 237 | 941 | 38 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 576 | 30 | 401 | 49 | 38 | 10 | 9 | 1369 | 403 | 237 | 941 | 38 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 144 | 8 | 100 | 12 | 10 | 3 | 2 | 342 | 101 | 59 | 235 | 10 |
| Total Analysis Volume [veh/h] | 576 | 30 | 401 | 49 | 38 | 10 | 9 | 1369 | 403 | 237 | 941 | 38 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | Split | Split | Split | Split | Split | Split | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 2 | 0 | 0 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.20 | 0.15 | 0.15 | 0.03 | 0.02 | 0.02 | 0.01 | 0.37 | 0.37 | 0.15 | 0.31 | 0.31 |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.848 | | | | | | | | | | | |

**Intersection Level Of Service Report**
**Intersection 26: Orange Avenue at Willow Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | - |
| Analysis Method: | ICU 1 | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.751 |

**Intersection Setup**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 40.00 | | | 40.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | Yes | | |

**Volumes**

| Name | Orange Avenue | | | Orange Avenue | | | Willow Street | | | Willow Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 60 | 572 | 97 | 67 | 572 | 90 | 126 | 1543 | 91 | 106 | 1241 | 72 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 60 | 572 | 97 | 67 | 572 | 90 | 126 | 1543 | 91 | 106 | 1241 | 72 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 15 | 143 | 24 | 17 | 143 | 23 | 32 | 386 | 23 | 27 | 310 | 18 |
| Total Analysis Volume [veh/h] | 60 | 572 | 97 | 67 | 572 | 90 | 126 | 1543 | 91 | 106 | 1241 | 72 |
| Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Cycle Length [s] | 100 |
| Lost time [s] | 10.00 |

**Phasing & Timing**

| Control Type | ProtP | Permi | Unsig | ProtP | Permi | Permi | Protec | Permi | Permi | Protec | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 0 | 1 | 6 | 0 | 3 | 8 | 0 | 7 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | Lead | - | - | Lead | - | - | Lead | - | - | Lead | - | - |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.04 | 0.18 | 0.00 | 0.04 | 0.21 | 0.21 | 0.08 | 0.34 | 0.34 | 0.07 | 0.27 | 0.27 |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.751 | | | | | | | | | | | |

# APPENDIX C

## TRIP GENERATION TABLES

*APPENDIX C-I*

# EXISTING (2018) TRIP GENERATION TABLE

**APPENDIX TABLE C-1**
**EXISTING (YEAR 2018)**
**TRIP GENERATION ESTIMATES**

| TAZ | Land Use [a], [b], [c] | Size | Daily (2-Way) | AM Peak Hour In | AM Peak Hour Out | AM Peak Hour Total | PM Peak Hour In | PM Peak Hour Out | PM Peak Hour Total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Automobile Parts Sales | 36,824 SF | 1,630 | 42 | 34 | 76 | 70 | 75 | 145 |
| 1 | High Turnover Sit Down Restaurant | 4,410 SF | 396 | 19 | 16 | 35 | 22 | 12 | 34 |
| | *Pass-by (10% Daily, 10% AM, 43% PM)* | | *(40)* | *(2)* | *(2)* | *(4)* | *(9)* | *(6)* | *(15)* |
| 1 | Automobile Parts and Service Center | 16,300 SF | 212 | 18 | 8 | 26 | 12 | 18 | 30 |
| 1 | Warehousing | 110,283 SF | 203 | 12 | 8 | 20 | 6 | 16 | 22 |
| 1 | Animal Hospital Veterinary Clinic | 3,280 SF | 57 | 6 | 4 | 10 | 4 | 6 | 10 |
| 1 | Shopping Center | 3,255 SF | 98 | 2 | 0 | 2 | 5 | 5 | 10 |
| | *Pass-by (10% Daily, 10% AM, 34% PM)* | | *(10)* | *0* | *0* | *0* | *(2)* | *(1)* | *(3)* |
| 1 | Mini Warehouse | 202,699 SF | 321 | 12 | 9 | 21 | 13 | 22 | 35 |
| | | **TAZ 1 Total:** | **2,867** | **109** | **77** | **186** | **121** | **147** | **268** |
| 2 | Manufacturing | 104,871 SF | 456 | 51 | 21 | 72 | 23 | 53 | 76 |
| 2 | Recreational Community Center | 14,683 SF | 338 | 14 | 7 | 21 | 13 | 14 | 27 |
| 2 | Automobile Parts and Service Center | 20,342 SF | 265 | 23 | 9 | 32 | 14 | 23 | 37 |
| 2 | Automobile Sales New | 1,993 SF | 44 | 2 | 1 | 3 | 2 | 2 | 4 |
| 2 | Shopping Center | 126,786 SF | 5,652 | 106 | 66 | 172 | 249 | 269 | 518 |
| | *Pass-by (10% Daily, 10% AM, 34% PM)* | | *(565)* | *(11)* | *(6)* | *(17)* | *(85)* | *(91)* | *(176)* |
| 2 | Drive in Bank | 4,507 SF | 361 | 20 | 14 | 34 | 37 | 37 | 74 |
| | *Pass-by (10% Daily, 29% AM, 35% PM)* | | *(36)* | *(6)* | *(4)* | *(10)* | *(13)* | *(13)* | *(26)* |
| | | **TAZ 2 Total:** | **6,515** | **199** | **108** | **307** | **240** | **294** | **534** |
| 3 | Automobile Parts and Service Center | 10,048 SF | 131 | 12 | 4 | 16 | 7 | 11 | 18 |
| 3 | General Office Building | 1,260 SF | 10 | 1 | 0 | 1 | 0 | 1 | 1 |
| 3 | Manufacturing | 14,684 SF | 64 | 7 | 4 | 11 | 4 | 8 | 12 |
| 3 | Automobile Care Center | 15,114 SF | 376 | 18 | 9 | 27 | 18 | 20 | 38 |
| | | **TAZ 3 Total:** | **581** | **38** | **17** | **55** | **29** | **40** | **69** |
| 4 | Automobile Parts and Service Center | 17,676 SF | 230 | 21 | 7 | 28 | 13 | 19 | 32 |
| 4 | General Office Building | 15,170 SF | 118 | 12 | 2 | 14 | 2 | 12 | 14 |
| 4 | Manufacturing | 81,048 SF | 353 | 38 | 18 | 56 | 17 | 43 | 60 |
| | | **TAZ 4 Total:** | **701** | **71** | **27** | **98** | **32** | **74** | **106** |
| 5 | Manufacturing | 43,897 SF | 192 | 21 | 9 | 30 | 10 | 23 | 33 |
| 5 | Mini Warehouse | 540 SF | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | Warehousing | 34,000 SF | 62 | 4 | 2 | 6 | 2 | 4 | 6 |
| | | **TAZ 5 Total:** | **255** | **25** | **11** | **36** | **12** | **27** | **39** |
| 6 | High Turnover Sit Down Restaurant | 3,596 SF | 322 | 16 | 13 | 29 | 18 | 10 | 28 |
| | *Pass-by (10% Daily, 10% AM, 43% PM)* | | *(32)* | *(2)* | *(1)* | *(3)* | *(8)* | *(4)* | *(12)* |
| 6 | Manufacturing | 16,034 SF | 70 | 8 | 4 | 12 | 4 | 9 | 13 |
| | | **TAZ 6 Total:** | **360** | **22** | **16** | **38** | **14** | **15** | **29** |
| 7 | General Office Building | 13,174 SF | 102 | 10 | 2 | 12 | 2 | 10 | 12 |
| 7 | Manufacturing | 35,402 SF | 155 | 17 | 7 | 24 | 8 | 19 | 27 |
| 7 | Automated Car Wash | 5,435 SF | 618 | 0 | 0 | 0 | 31 | 31 | 62 |
| | | **TAZ 7 Total:** | **875** | **27** | **9** | **36** | **41** | **60** | **101** |
| 8 | Manufacturing | 20,004 SF | 88 | 11 | 3 | 14 | 4 | 12 | 16 |
| | | **TAZ 8 Total:** | **88** | **11** | **3** | **14** | **4** | **12** | **16** |
| 9 [d] | Vacant Land | | -- | -- | -- | -- | -- | -- | -- |
| | | **TAZ 9 [d] Total:** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| 10 | Vacant Land | | -- | -- | -- | -- | -- | -- | -- |
| | | **TAZ 10 Total:** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| 11 | Vacant Land | | -- | -- | -- | -- | -- | -- | -- |
| | | **TAZ 11 Total:** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| 12 | Vacant Land | | -- | -- | -- | -- | -- | -- | -- |
| | | **TAZ 12 Total:** | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| 13 | High Turnover Sit Down Restaurant | 1,100 SF | 98 | 5 | 4 | 9 | 6 | 3 | 9 |
| | *Pass-by (10% Daily, 10% AM, 43% PM)* | | *(10)* | *(1)* | *0* | *(1)* | *(3)* | *(1)* | *(4)* |
| 13 | Manufacturing | 318,142 SF | 1,387 | 151 | 67 | 218 | 67 | 169 | 236 |
| 13 | General Office Building | 61,340 SF | 478 | 49 | 8 | 57 | 9 | 48 | 57 |
| 13 | Automobile Parts and Service Center | 5,125 SF | 66 | 6 | 2 | 8 | 4 | 6 | 10 |

## APPENDIX TABLE C-1
## EXISTING (YEAR 2018)
## TRIP GENERATION ESTIMATES

| TAZ | Land Use [a], [b], [c] | Size | Daily (2-Way) | AM Peak Hour In | AM Peak Hour Out | AM Peak Hour Total | PM Peak Hour In | PM Peak Hour Out | PM Peak Hour Total |
|---|---|---|---|---|---|---|---|---|---|
| 13 | Construction Equipment Rental Store | 7,129 SF | 57 | 0 | 0 | 0 | 2 | 4 | 6 |
| 13 | Warehousing | 210,726 SF | 384 | 19 | 19 | 38 | 13 | 30 | 43 |
| 13 | Medical Dental Office Building | 14,823 SF | 413 | 26 | 7 | 33 | 11 | 30 | 41 |
| | | **TAZ 13 Total:** | **2,873** | **255** | **107** | **362** | **109** | **289** | **398** |
| 14 | Automobile Parts and Service Center | 5,020 SF | 66 | 6 | 2 | 8 | 3 | 6 | 9 |
| 14 | Construction Equipment Rental Store | 15,920 SF | 126 | 0 | 0 | 0 | 3 | 10 | 13 |
| | | **TAZ 14 Total:** | **192** | **6** | **2** | **8** | **6** | **16** | **22** |
| 15 | General Office Building | 21,440 SF | 167 | 18 | 2 | 20 | 3 | 17 | 20 |
| 15 | Manufacturing | 19,781 SF | 86 | 11 | 3 | 14 | 4 | 12 | 16 |
| 15 | Automobile Parts and Service Center | 5,736 SF | 74 | 6 | 3 | 9 | 4 | 6 | 10 |
| 15 | Mini Warehouse | 47,280 SF | 74 | 2 | 3 | 5 | 2 | 7 | 9 |
| | | **TAZ 15 Total:** | **401** | **37** | **11** | **48** | **13** | **42** | **55** |
| 16 | Warehousing | 181,286 SF | 329 | 18 | 15 | 33 | 13 | 22 | 35 |
| 16 | Manufacturing | 104,253 SF | 455 | 51 | 21 | 72 | 23 | 53 | 76 |
| 16 | Automobile Parts and Service Center | 11,625 SF | 151 | 14 | 4 | 18 | 8 | 13 | 21 |
| 16 | Automobile Sales Used | 1,758 SF | 38 | 2 | 1 | 3 | 2 | 4 | 6 |
| | | **TAZ 16 Total:** | **973** | **85** | **41** | **126** | **46** | **92** | **138** |
| 17 | Warehousing | 9,744 SF | 19 | 1 | 1 | 2 | 1 | 1 | 2 |
| 17 | Automobile Parts and Service Center | 30,940 SF | 403 | 36 | 13 | 49 | 22 | 34 | 56 |
| 17 | Mini Warehouse | 9,148 SF | 16 | 0 | 1 | 1 | 0 | 2 | 2 |
| 17 | High Turnover Sit Down Restaurant | 10,266 SF | 922 | 45 | 37 | 82 | 50 | 30 | 80 |
| | *Pass-by (10% Daily, 10% AM, 43% PM)* | | *(92)* | *(5)* | *(3)* | *(8)* | *(22)* | *(12)* | *(34)* |
| 17 | General Office Building | 24,278 SF | 189 | 19 | 3 | 22 | 3 | 19 | 22 |
| | | **TAZ 17 Total:** | **1,457** | **96** | **52** | **148** | **54** | **74** | **128** |
| | **EXISTING TOTAL [e]** | **2,094,175 SF** | **18,138** | **981** | **481** | **1,462** | **721** | **1,182** | **1,903** |

Notes:

[a] An internal trip reduction of 20% was applied to account for internal trips, transit use, and TDM strategies.

[b] Of the total trip generation for Manufacturing and Warehousing/Mini-warehousing, the Daily, total AM peak hour, and total PM peak hour rates are from ITE Trip Generation, 10th Edition. The vehicle mx and enter/exit splits are based on the City of Fontana Truck Trip Generation Study for Manufacturing land uses and South Coast Air Quality Management for Warehousing land uses. A Passenger Car Equivalent (PCE) factor of 2.0 was applied to truck trips.

[c] Retail Pass-by trips consist of 10%, 10%, and 34% for Daily, AM peak hour, and PM peak hour, respectively.
High-turnover (Sit-down) Restaurant Pass-by trips consist of 10%, 10%, and 43% for Daily, AM peak hour, and PM peak hour, respectively.
Drive-in Bank Pass-by trips consist of 10%, 29%, and 35% for Daily, AM peak hour, and PM peak hour, respectively.

[d] Existing Boeing site.

[e] Existing square footage total reported excludes 1,409,441 SF of existing vacant industrial uses located within TAZ 9 (Boeing Site).

*APPENDIX C-II*

**PROPOSED PROJECT**
**TRIP GENERATION TABLE**

**APPENDIX TABLE C-2**
**PROPOSED PROJECT**
**TRIP GENERATION ESTIMATES**

| TAZ | Land Use [a], [b], [c] | Size | Daily (2-Way) | AM Peak Hour In | AM Peak Hour Out | AM Peak Hour Total | PM Peak Hour In | PM Peak Hour Out | PM Peak Hour Total |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Shopping Center | 45,423 SF | 1,372 | 22 | 12 | 34 | 66 | 72 | 138 |
| | *Pass-by (10% Daily, 10% AM, 34% PM)* | | *(137)* | *(2)* | *(1)* | *(3)* | *(22)* | *(25)* | *(47)* |
| 1 | High Turnover Sit Down Restaurant | 4,971 SF | 446 | 22 | 17 | 39 | 24 | 15 | 39 |
| | *Pass-by (10% Daily, 10% AM, 43% PM)* | | *(45)* | *(2)* | *(2)* | *(4)* | *(10)* | *(7)* | *(17)* |
| 1 | Fast Casual Restaurant | 3,728 SF | 940 | 4 | 2 | 6 | 23 | 19 | 42 |
| | *Pass-by (25% Daily, 49% AM, 50% PM)* | | *(235)* | *(2)* | *(1)* | *(3)* | *(12)* | *(9)* | *(21)* |
| 1 | Fast Food Restaurant with Drive Through Window | 1,243 SF | 468 | 21 | 19 | 40 | 17 | 16 | 33 |
| | *Pass-by (25% Daily, 49% AM, 50% PM)* | | *(117)* | *(10)* | *(10)* | *(20)* | *(9)* | *(8)* | *(17)* |
| | **PROPOSED PROJECT TAZ 1 TOTAL:** | | **2,692** | **53** | **36** | **89** | **77** | **73** | **150** |
| | **EXISTING TAZ 1 TOTAL:** | | **2,867** | **109** | **77** | **186** | **121** | **147** | **268** |
| | ***PROPOSED PROJECT MINUS EXISTING (TAZ 1):*** | | ***(175)*** | ***(56)*** | ***(41)*** | ***(97)*** | ***(44)*** | ***(74)*** | ***(118)*** |
| 2 | General Office Building | 66,886 SF | 521 | 54 | 8 | 62 | 10 | 52 | 62 |
| 2 | Medical Dental Office Building | 4,835 SF | 134 | 8 | 2 | 10 | 4 | 10 | 14 |
| 2 | Research and Development Center | 8,864 SF | 80 | 2 | 1 | 3 | 1 | 2 | 3 |
| 2 | Manufacturing | 10,654 SF | 47 | 6 | 2 | 8 | 2 | 6 | 8 |
| 2 | Warehousing | 123,122 SF | 225 | 13 | 9 | 22 | 7 | 17 | 24 |
| 2 | High Cube Cold Storage Warehouse | 21,727 SF | 49 | 1 | 1 | 2 | 1 | 1 | 2 |
| 2 | Shopping Center | 108,335 SF | 5,078 | 102 | 63 | 165 | 222 | 240 | 462 |
| | *Pass-by (10% Daily, 10% AM, 34% PM)* | | (508) | (10) | (7) | (17) | (75) | (82) | (157) |
| 2 | High Turnover Sit Down Restaurant | 7,984 SF | 717 | 34 | 29 | 63 | 38 | 24 | 62 |
| | Pass-by (10% Daily, 10% AM, 43% PM) | | (72) | (3) | (3) | (6) | (16) | (11) | (27) |
| 2 | Fast Casual Restaurant | 2,382 SF | 601 | 2 | 2 | 4 | 15 | 12 | 27 |
| | *Pass-by (25% Daily, 49% AM, 50% PM)* | | *(150)* | *(1)* | *(1)* | *(2)* | *(8)* | *(6)* | *(14)* |
| 2 | Fast Food Restaurant with Drive Through Window | 794 SF | 299 | 13 | 13 | 26 | 11 | 10 | 21 |
| | *Pass-by (25% Daily, 49% AM, 50% PM)* | | *(75)* | *(6)* | *(7)* | *(13)* | *(6)* | *(5)* | *(11)* |
| | **PROPOSED PROJECT TAZ 2 TOTAL:** | | **6,946** | **215** | **112** | **327** | **206** | **270** | **476** |
| | **EXISTING TAZ 2 TOTAL:** | | **6,515** | **199** | **108** | **307** | **240** | **294** | **534** |
| | ***PROPOSED PROJECT MINUS EXISTING (TAZ 2):*** | | ***431*** | ***16*** | ***4*** | ***20*** | ***(34)*** | ***(24)*** | ***(58)*** |
| 3 | General Office Building | 11,620 SF | 90 | 9 | 1 | 10 | 2 | 8 | 10 |
| 3 | Medical Dental Office Building | 840 SF | 23 | 2 | 0 | 2 | 1 | 1 | 2 |
| 3 | Research and Development Center | 1,540 SF | 14 | 1 | 0 | 1 | 0 | 1 | 1 |
| 3 | Manufacturing | 309 SF | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | Warehousing | 33,147 SF | 61 | 4 | 2 | 6 | 2 | 4 | 6 |
| 3 | High Cube Cold Storage Warehouse | 5,850 SF | 13 | 0 | 1 | 1 | 0 | 1 | 1 |
| 3 | Shopping Center | 9,634 SF | 291 | 5 | 2 | 7 | 14 | 16 | 30 |
| | *Pass-by (10% Daily, 10% AM, 34% PM)* | | *(29)* | *(1)* | *0* | *(1)* | *(5)* | *(5)* | *(10)* |
| 3 | High Turnover Sit Down Restaurant | 14,459 SF | 1,298 | 63 | 52 | 115 | 70 | 43 | 113 |
| | *Pass-by (10% Daily, 10% AM, 43% PM)* | | (130) | (6) | (6) | (12) | (30) | (19) | (49) |
| 3 | Fast Casual Restaurant | 3,943 SF | 994 | 4 | 2 | 6 | 25 | 20 | 45 |
| | *Pass-by (25% Daily, 49% AM, 50% PM)* | | (249) | (2) | (1) | (3) | (13) | (10) | (23) |
| 3 | Fast Food Restaurant with Drive Through Window | 1,315 SF | 495 | 22 | 20 | 42 | 18 | 16 | 34 |
| | *Pass-by (25% Daily, 49% AM, 50% PM)* | | *(124)* | *(11)* | *(10)* | *(21)* | *(9)* | *(8)* | *(17)* |
| | **PROPOSED PROJECT TAZ 3 TOTAL:** | | **2,748** | **90** | **63** | **153** | **75** | **68** | **143** |
| | **EXISTING TAZ 3 TOTAL:** | | **581** | **38** | **17** | **55** | **29** | **40** | **69** |
| | ***PROPOSED PROJECT MINUS EXISTING (TAZ 3):*** | | ***2,167*** | ***52*** | ***46*** | ***98*** | ***46*** | ***28*** | ***74*** |
| 4 | Manufacturing | 113,297 SF | 494 | 55 | 21 | 76 | 24 | 61 | 85 |
| 4 | Shopping Center | 16,184 SF | 489 | 7 | 5 | 12 | 24 | 26 | 50 |
| | *Pass-by (10% Daily, 10% AM, 34% PM)* | | *(49)* | *(1)* | *0* | *(1)* | *(8)* | *(9)* | *(17)* |
| 4 | Fast Casual Restaurant | 10,943 SF | 2,759 | 12 | 6 | 18 | 68 | 56 | 124 |
| | *Pass-by (25% Daily, 49% AM, 50% PM)* | | *(690)* | *(6)* | *(3)* | *(9)* | *(34)* | *(28)* | *(62)* |
| 4 | Fast Food Restaurant with Drive Through Window | 3,648 SF | 1,374 | 60 | 58 | 118 | 50 | 45 | 95 |
| | *Pass-by (25% Daily, 49% AM, 50% PM)* | | *(344)* | *(29)* | *(29)* | *(58)* | *(25)* | *(23)* | *(48)* |
| | **PROPOSED PROJECT TAZ 4 TOTAL:** | | **4,033** | **98** | **58** | **156** | **99** | **128** | **227** |
| | **EXISTING TAZ 4 TOTAL:** | | **701** | **71** | **27** | **98** | **32** | **74** | **106** |
| | ***PROPOSED PROJECT MINUS EXISTING (TAZ 4):*** | | ***3,332*** | ***27*** | ***31*** | ***58*** | ***67*** | ***54*** | ***121*** |
| 5 | Manufacturing | 25,140 SF | 111 | 13 | 5 | 18 | 6 | 13 | 19 |
| 5 | Warehousing | 89,006 SF | 163 | 9 | 8 | 17 | 5 | 14 | 19 |
| 5 | High Cube Cold Storage Warehouse | 15,707 SF | 34 | 1 | 1 | 2 | 1 | 1 | 2 |
| 5 | Shopping Center | 19,774 SF | 597 | 10 | 5 | 15 | 29 | 31 | 60 |
| | *Pass-by (10% Daily, 10% AM, 34% PM)* | | *(60)* | *(1)* | *(1)* | *(2)* | *(10)* | *(10)* | *(20)* |
| | **PROPOSED PROJECT TAZ 5 TOTAL:** | | **845** | **32** | **18** | **50** | **31** | **49** | **80** |
| | **EXISTING TAZ 5 TOTAL:** | | **255** | **25** | **11** | **36** | **12** | **27** | **39** |

**APPENDIX TABLE C-2**
**PROPOSED PROJECT**
**TRIP GENERATION ESTIMATES**

| TAZ | Land Use [a], [b], [c] | Size | Daily (2-Way) | AM Peak Hour In | AM Peak Hour Out | AM Peak Hour Total | PM Peak Hour In | PM Peak Hour Out | PM Peak Hour Total |
|---|---|---|---|---|---|---|---|---|---|
| | ***PROPOSED PROJECT MINUS EXISTING (TAZ 5):*** | | ***590*** | ***7*** | ***7*** | ***14*** | ***19*** | ***22*** | ***41*** |
| 6 | General Office Building | 30,786 SF | 240 | 25 | 4 | 29 | 5 | 23 | 28 |
| 6 | Medical Dental Office Building | 2,226 SF | 62 | 4 | 1 | 5 | 2 | 4 | 6 |
| 6 | Research and Development Center | 4,080 SF | 37 | 2 | 0 | 2 | 0 | 2 | 2 |
| 6 | Manufacturing | 21,586 SF | 95 | 11 | 5 | 16 | 6 | 10 | 16 |
| 6 | Quality Restaurant | 7,636 SF | 512 | 4 | 1 | 5 | 32 | 16 | 48 |
| | *Pass-by (10% Daily, 10% AM, 44% PM)* | | *(51)* | *0* | *(1)* | *(1)* | *(14)* | *(7)* | *(21)* |
| | **PROPOSED PROJECT TAZ 6 TOTAL:** | | **895** | **46** | **10** | **56** | **31** | **48** | **79** |
| | **EXISTING TAZ 6 TOTAL:** | | **360** | **22** | **16** | **38** | **14** | **15** | **29** |
| | ***PROPOSED PROJECT MINUS EXISTING (TAZ 6):*** | | ***535*** | ***24*** | ***(6)*** | ***18*** | ***17*** | ***33*** | ***50*** |
| 7 | General Office Building | 225,410 SF | 1,867 | 164 | 26 | 190 | 31 | 166 | 197 |
| 7 | Medical Dental Office Building | 16,295 SF | 454 | 28 | 8 | 36 | 13 | 32 | 45 |
| 7 | Research and Development Center | 29,874 SF | 269 | 8 | 2 | 10 | 2 | 10 | 12 |
| 7 | Manufacturing | 102,609 SF | 448 | 50 | 21 | 71 | 21 | 55 | 76 |
| 7 | Warehousing | 42,482 SF | 77 | 4 | 4 | 8 | 2 | 7 | 9 |
| 7 | High Cube Cold Storage Warehouse | 7,497 SF | 18 | 0 | 1 | 1 | 0 | 1 | 1 |
| | **PROPOSED PROJECT TAZ 7 TOTAL:** | | **3,133** | **254** | **62** | **316** | **69** | **271** | **340** |
| | **EXISTING TAZ 7 TOTAL:** | | **875** | **27** | **9** | **36** | **41** | **60** | **101** |
| | ***PROPOSED PROJECT MINUS EXISTING (TAZ 7):*** | | ***2,258*** | ***227*** | ***53*** | ***280*** | ***28*** | ***211*** | ***239*** |
| 8 | General Office Building | 122,565 SF | 1,034 | 98 | 16 | 114 | 18 | 92 | 110 |
| 8 | Medical Dental Office Building | 8,860 SF | 246 | 16 | 4 | 20 | 7 | 18 | 25 |
| 8 | Research and Development Center | 16,244 SF | 146 | 4 | 2 | 6 | 1 | 5 | 6 |
| 8 | Manufacturing | 65,383 SF | 287 | 32 | 13 | 45 | 14 | 36 | 50 |
| 8 | Warehousing | 133,731 SF | 245 | 13 | 11 | 24 | 9 | 18 | 27 |
| 8 | High Cube Cold Storage Warehouse | 23,600 SF | 52 | 1 | 1 | 2 | 1 | 3 | 4 |
| 8 | Shopping Center | 22,773 SF | 688 | 10 | 7 | 17 | 34 | 36 | 70 |
| | *Pass-by (10% Daily, 10% AM, 34% PM)* | | *(69)* | *(1)* | *(1)* | *(2)* | *(12)* | *(12)* | *(24)* |
| | **PROPOSED PROJECT TAZ 8 TOTAL:** | | **2,629** | **173** | **53** | **226** | **72** | **196** | **268** |
| | **EXISTING TAZ 8 TOTAL:** | | **88** | **11** | **3** | **14** | **4** | **12** | **16** |
| | ***PROPOSED PROJECT MINUS EXISTING (TAZ 8):*** | | ***2,541*** | ***162*** | ***50*** | ***212*** | ***68*** | ***184*** | ***252*** |
| 9 | General Office Building | 1,294,036 SF | 10,172 | 855 | 139 | 994 | 166 | 871 | 1,037 |
| 9 | Medical Dental Office Building | 93,545 SF | 2,604 | 162 | 46 | 208 | 73 | 186 | 259 |
| 9 | Research and Development Center | 171,499 SF | 1,545 | 43 | 15 | 58 | 10 | 57 | 67 |
| 9 | Manufacturing | 10,329 SF | 45 | 6 | 1 | 7 | 2 | 6 | 8 |
| 9 | Warehousing | 693,348 SF | 1,264 | 63 | 61 | 124 | 43 | 95 | 138 |
| 9 | High Cube Cold Storage Warehouse | 122,355 SF | 271 | 7 | 8 | 15 | 5 | 12 | 17 |
| 9 | Shopping Center | 5,000 SF | 151 | 2 | 2 | 4 | 7 | 8 | 15 |
| | *Pass-by (10% Daily, 10% AM, 34% PM)* | | *(15)* | *0* | *0* | *0* | *(2)* | *(3)* | *(5)* |
| | **PROPOSED PROJECT TAZ 9 TOTAL:** | | **16,037** | **1,138** | **272** | **1,410** | **304** | **1,232** | **1,536** |
| | **EXISTING TAZ 9 TOTAL:** | | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| | ***PROPOSED PROJECT MINUS EXISTING (TAZ 9):*** | | ***16,037*** | ***1,138*** | ***272*** | ***1,410*** | ***304*** | ***1,232*** | ***1,536*** |
| 10 | Manufacturing | 87,738 SF | 383 | 41 | 19 | 60 | 19 | 46 | 65 |
| 10 | Warehousing | 388,402 SF | 709 | 35 | 34 | 69 | 24 | 53 | 77 |
| 10 | High Cube Cold Storage Warehouse | 68,542 SF | 152 | 4 | 4 | 8 | 4 | 5 | 9 |
| 10 | Shopping Center | 79,850 SF | 2,411 | 38 | 22 | 60 | 117 | 126 | 243 |
| | *Pass-by (10% Daily, 10% AM, 34% PM)* | | *(241)* | *(4)* | *(2)* | *(6)* | *(40)* | *(43)* | *(83)* |
| | **PROPOSED PROJECT TAZ 10 TOTAL:** | | **3,414** | **114** | **77** | **191** | **124** | **187** | **311** |
| | **EXISTING TAZ 10 TOTAL:** | | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| | ***PROPOSED PROJECT MINUS EXISTING (TAZ 10):*** | | ***3,414*** | ***114*** | ***77*** | ***191*** | ***124*** | ***187*** | ***311*** |
| 11 | Manufacturing | 33,309 SF | 146 | 16 | 7 | 23 | 7 | 17 | 24 |
| 11 | Warehousing | 108,689 SF | 198 | 11 | 8 | 19 | 6 | 16 | 22 |
| 11 | High Cube Cold Storage Warehouse | 19,180 SF | 43 | 1 | 1 | 2 | 1 | 1 | 2 |
| 11 | Shopping Center | 22,164 SF | 670 | 10 | 7 | 17 | 32 | 35 | 67 |
| | *Pass-by (10% Daily, 10% AM, 34% PM)* | | *(67)* | *(1)* | *(1)* | *(2)* | *(11)* | *(12)* | *(23)* |
| 11 | Fast Casual Restaurant | 1,879 SF | 474 | 2 | 1 | 3 | 12 | 10 | 22 |
| | *Pass-by (25% Daily, 49% AM, 50% PM)* | | *(119)* | *(1)* | *0* | *(1)* | *(6)* | *(5)* | *(11)* |
| 11 | Fast Food Restaurant with Drive Through Window | 626 SF | 236 | 10 | 10 | 20 | 8 | 8 | 16 |
| | *Pass-by (25% Daily, 49% AM, 50% PM)* | | *(59)* | *(5)* | *(5)* | *(10)* | *(4)* | *(4)* | *(8)* |
| | **PROPOSED PROJECT TAZ 11 TOTAL:** | | **1,522** | **43** | **28** | **71** | **45** | **66** | **111** |
| | **EXISTING TAZ 11 TOTAL:** | | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| | ***PROPOSED PROJECT MINUS EXISTING (TAZ 11):*** | | ***1,522*** | ***43*** | ***28*** | ***71*** | ***45*** | ***66*** | ***111*** |

**APPENDIX TABLE C-2**
**PROPOSED PROJECT**
**TRIP GENERATION ESTIMATES**

| TAZ | Land Use [a], [b], [c] | Size | Daily (2-Way) | AM Peak Hour In | AM Peak Hour Out | AM Peak Hour Total | PM Peak Hour In | PM Peak Hour Out | PM Peak Hour Total |
|---|---|---|---|---|---|---|---|---|---|
| 12 | Manufacturing | 143,673 SF | 626 | 68 | 31 | 99 | 30 | 76 | 106 |
| 12 | Warehousing | 608,261 SF | 1,109 | 56 | 51 | 107 | 36 | 86 | 122 |
| 12 | High Cube Cold Storage Warehouse | 107,340 SF | 240 | 6 | 7 | 13 | 4 | 10 | 14 |
| 12 | Shopping Center | 27,126 SF | 819 | 13 | 7 | 20 | 39 | 43 | 82 |
| | *Pass-by (10% Daily, 10% AM, 34% PM)* | | *(82)* | *(1)* | *(1)* | *(2)* | *(13)* | *(15)* | *(28)* |
| 12 | High Turnover Sit Down Restaurant | 2,678 SF | 240 | 12 | 10 | 22 | 13 | 8 | 21 |
| | *Pass-by (10% Daily, 10% AM, 43% PM)* | | *(24)* | *(1)* | *(1)* | *(2)* | *(6)* | *(3)* | *(9)* |
| 12 | Hotel | 204 Rooms | 1,364 | 46 | 31 | 77 | 50 | 48 | 98 |
| | **PROPOSED PROJECT TAZ 12 TOTAL:** | | **4,292** | **199** | **135** | **334** | **153** | **253** | **406** |
| | **EXISTING TAZ 12 TOTAL:** | | **0** | **0** | **0** | **0** | **0** | **0** | **0** |
| | ***PROPOSED PROJECT MINUS EXISTING (TAZ 12):*** | | ***4,292*** | ***199*** | ***135*** | ***334*** | ***153*** | ***253*** | ***406*** |
| 13 | General Office Building | 8,877 SF | 69 | 7 | 1 | 8 | 2 | 6 | 8 |
| 13 | Medical Dental Office Building | 642 SF | 18 | 2 | 0 | 2 | 1 | 1 | 2 |
| 13 | Research and Development Center | 1,176 SF | 10 | 0 | 0 | 0 | 0 | 1 | 1 |
| 13 | Manufacturing | 175,138 SF | 763 | 84 | 37 | 121 | 36 | 94 | 130 |
| 13 | Warehousing | 136,328 SF | 248 | 13 | 11 | 24 | 9 | 18 | 27 |
| 13 | High Cube Cold Storage Warehouse | 24,058 SF | 54 | 1 | 3 | 4 | 1 | 3 | 4 |
| 13 | High Turnover Sit Down Restaurant | 2,322 SF | 208 | 10 | 8 | 18 | 11 | 7 | 18 |
| | *Pass-by (10% Daily, 10% AM, 43% PM)* | | *(21)* | *(1)* | *(1)* | *(2)* | *(5)* | *(3)* | *(8)* |
| 13 | Fast Casual Restaurant | 1,987 SF | 501 | 2 | 1 | 3 | 12 | 10 | 22 |
| | *Pass-by (25% Daily, 49% AM, 50% PM)* | | *(125)* | *(1)* | *0* | *(1)* | *(6)* | *(5)* | *(11)* |
| 13 | Fast Food Restaurant with Drive Through Window | 663 SF | 250 | 11 | 11 | 22 | 9 | 9 | 18 |
| | *Pass-by (25% Daily, 49% AM, 50% PM)* | | *(63)* | *(5)* | *(6)* | *(11)* | *(5)* | *(4)* | *(9)* |
| 13 | Hotel | 128 Rooms | 856 | 28 | 20 | 48 | 31 | 31 | 62 |
| | **PROPOSED PROJECT TAZ 13 TOTAL:** | | **2,768** | **151** | **85** | **236** | **96** | **168** | **264** |
| | **EXISTING TAZ 13 TOTAL:** | | **2,873** | **255** | **107** | **362** | **109** | **289** | **398** |
| | ***PROPOSED PROJECT MINUS EXISTING (TAZ 13):*** | | ***(105)*** | ***(104)*** | ***(22)*** | ***(126)*** | ***(13)*** | ***(121)*** | ***(134)*** |
| 14 | Manufacturing | 79,761 SF | 347 | 37 | 18 | 55 | 17 | 43 | 60 |
| 14 | Warehousing | 117,710 SF | 215 | 12 | 9 | 21 | 7 | 16 | 23 |
| 14 | High Cube Cold Storage Warehouse | 20,772 SF | 46 | 1 | 1 | 2 | 1 | 1 | 2 |
| 14 | Shopping Center | 38,806 SF | 1,172 | 18 | 11 | 29 | 57 | 61 | 118 |
| | *Pass-by (10% Daily, 10% AM, 34% PM)* | | *(117)* | *(2)* | *(1)* | *(3)* | *(19)* | *(21)* | *(40)* |
| | **PROPOSED PROJECT TAZ 14 TOTAL:** | | **1,663** | **66** | **38** | **104** | **63** | **100** | **163** |
| | **EXISTING TAZ 14 TOTAL:** | | **192** | **6** | **2** | **8** | **6** | **16** | **22** |
| | ***PROPOSED PROJECT MINUS EXISTING (TAZ 14):*** | | ***1,471*** | ***60*** | ***36*** | ***96*** | ***57*** | ***84*** | ***141*** |
| 15 | Manufacturing | 132,949 SF | 579 | 63 | 29 | 92 | 28 | 71 | 99 |
| 15 | Warehousing | 100,507 SF | 184 | 11 | 8 | 19 | 6 | 14 | 20 |
| 15 | High Cube Cold Storage Warehouse | 17,736 SF | 40 | 1 | 1 | 2 | 1 | 1 | 2 |
| 15 | Shopping Center | 50,731 SF | 1,532 | 24 | 14 | 38 | 74 | 80 | 154 |
| | *Pass-by (10% Daily, 10% AM, 34% PM)* | | *(153)* | *(2)* | *(2)* | *(4)* | *(25)* | *(27)* | *(52)* |
| | **PROPOSED PROJECT TAZ 15 TOTAL:** | | **2,182** | **97** | **50** | **147** | **84** | **139** | **223** |
| | **EXISTING TAZ 15 TOTAL:** | | **401** | **37** | **11** | **48** | **13** | **42** | **55** |
| | ***PROPOSED PROJECT MINUS EXISTING (TAZ 15):*** | | ***1,781*** | ***60*** | ***39*** | ***99*** | ***71*** | ***97*** | ***168*** |
| 16 | Manufacturing | 40,926 SF | 178 | 20 | 8 | 28 | 9 | 21 | 30 |
| 16 | Warehousing | 77,907 SF | 141 | 7 | 7 | 14 | 5 | 12 | 17 |
| 16 | High Cube Cold Storage Warehouse | 13,748 SF | 30 | 1 | 1 | 2 | 1 | 1 | 2 |
| 16 | Shopping Center | 12,215 SF | 369 | 6 | 3 | 9 | 18 | 20 | 38 |
| | *Pass-by (10% Daily, 10% AM, 34% PM)* | | *(37)* | *(1)* | *0* | *(1)* | *(6)* | *(7)* | *(13)* |
| 16 | High Turnover Sit Down Restaurant | 4,601 SF | 413 | 20 | 17 | 37 | 22 | 14 | 36 |
| | *Pass-by (10% Daily, 10% AM, 43% PM)* | | *(41)* | *(2)* | *(2)* | *(4)* | *(9)* | *(6)* | *(15)* |
| 16 | Fast Casual Restaurant | 4,223 SF | 1,065 | 5 | 2 | 7 | 26 | 22 | 48 |
| | *Pass-by (25% Daily, 49% AM, 50% PM)* | | *(266)* | *(2)* | *(1)* | *(3)* | *(13)* | *(11)* | *(24)* |
| 16 | Fast Food Restaurant with Drive Through Window | 1,408 SF | 530 | 23 | 23 | 46 | 19 | 18 | 37 |
| | *Pass-by (25% Daily, 49% AM, 50% PM)* | | *(133)* | *(11)* | *(12)* | *(23)* | *(10)* | *(9)* | *(19)* |
| | **PROPOSED PROJECT TAZ 16 TOTAL:** | | **2,249** | **66** | **46** | **112** | **62** | **75** | **137** |
| | **EXISTING TAZ 16 TOTAL:** | | **973** | **85** | **41** | **126** | **46** | **92** | **138** |
| | ***PROPOSED PROJECT MINUS EXISTING (TAZ 16):*** | | ***1,276*** | ***(19)*** | ***5*** | ***(14)*** | ***16*** | ***(17)*** | ***(1)*** |
| 17 | General Office Building | 10,359 SF | 81 | 8 | 2 | 10 | 2 | 8 | 10 |
| 17 | Medical Dental Office Building | 749 SF | 21 | 2 | 0 | 2 | 1 | 1 | 2 |
| 17 | Research and Development Center | 1,373 SF | 12 | 1 | 0 | 1 | 0 | 1 | 1 |
| 17 | Manufacturing | 4,151 SF | 18 | 2 | 2 | 4 | 1 | 3 | 4 |

## APPENDIX TABLE C-2
## PROPOSED PROJECT
## TRIP GENERATION ESTIMATES

| TAZ | Land Use [a], [b], [c] | Size | Daily (2-Way) | AM Peak Hour In | AM Peak Hour Out | AM Peak Hour Total | PM Peak Hour In | PM Peak Hour Out | PM Peak Hour Total |
|---|---|---|---|---|---|---|---|---|---|
| 17 | Fast Casual Restaurant | 4,439 SF | 1,119 | 5 | 2 | 7 | 28 | 22 | 50 |
| | *Pass-by (25% Daily, 49% AM, 50% PM)* | | *(280)* | *(2)* | *(1)* | *(3)* | *(14)* | *(11)* | *(25)* |
| 17 | Fast Food Restaurant with Drive Through Window | 1,480 SF | 558 | 24 | 23 | 47 | 20 | 18 | 38 |
| | *Pass-by (25% Daily, 49% AM, 50% PM)* | | *(140)* | *(12)* | *(11)* | *(23)* | *(10)* | *(9)* | *(19)* |
| | **PROPOSED PROJECT TAZ 17 TOTAL:** | | **1,389** | **28** | **17** | **45** | **28** | **33** | **61** |
| | **EXISTING TAZ 17 TOTAL:** | | **1,457** | **96** | **52** | **148** | **54** | **74** | **128** |
| | ***PROPOSED PROJECT MINUS EXISTING (TAZ 17):*** | | ***(68)*** | ***(68)*** | ***(35)*** | ***(103)*** | ***(26)*** | ***(41)*** | ***(67)*** |
| | **PROPOSED PROJECT TOTAL** | **7,011,195 SF** | **59,437** | **2,863** | **1,160** | **4,023** | **1,619** | **3,356** | **4,975** |
| | **EXISTING TOTAL [d]** | **2,094,175 SF** | **18,138** | **981** | **481** | **1,462** | **721** | **1,182** | **1,903** |
| | ***PROPOSED PROJECT TOTAL MINUS EXISTING TOTAL*** | ***4,917,020 SF*** | ***41,299*** | ***1,882*** | ***679*** | ***2,561*** | ***898*** | ***2,174*** | ***3,072*** |

Notes:

[a] An internal trip reduction of 20% was applied to account for internal trips, transit use, and TDM strategies.

[b] Of the total trip generation for Manufacturing and Warehousing/Mini-warehousing, the Daily, total AM peak hour, and total PM peak hour rates are from ITE Trip Generation, 10th Edition. The vehicle mx and enter/exit splits are based on the City of Fontana Truck Trip Generation Study for Manufacturing land uses and South Coast Air Quality Management for Warehousing land uses. A Passenger Car Equivalent (PCE) factor of 2.0 was applied to truck trips.

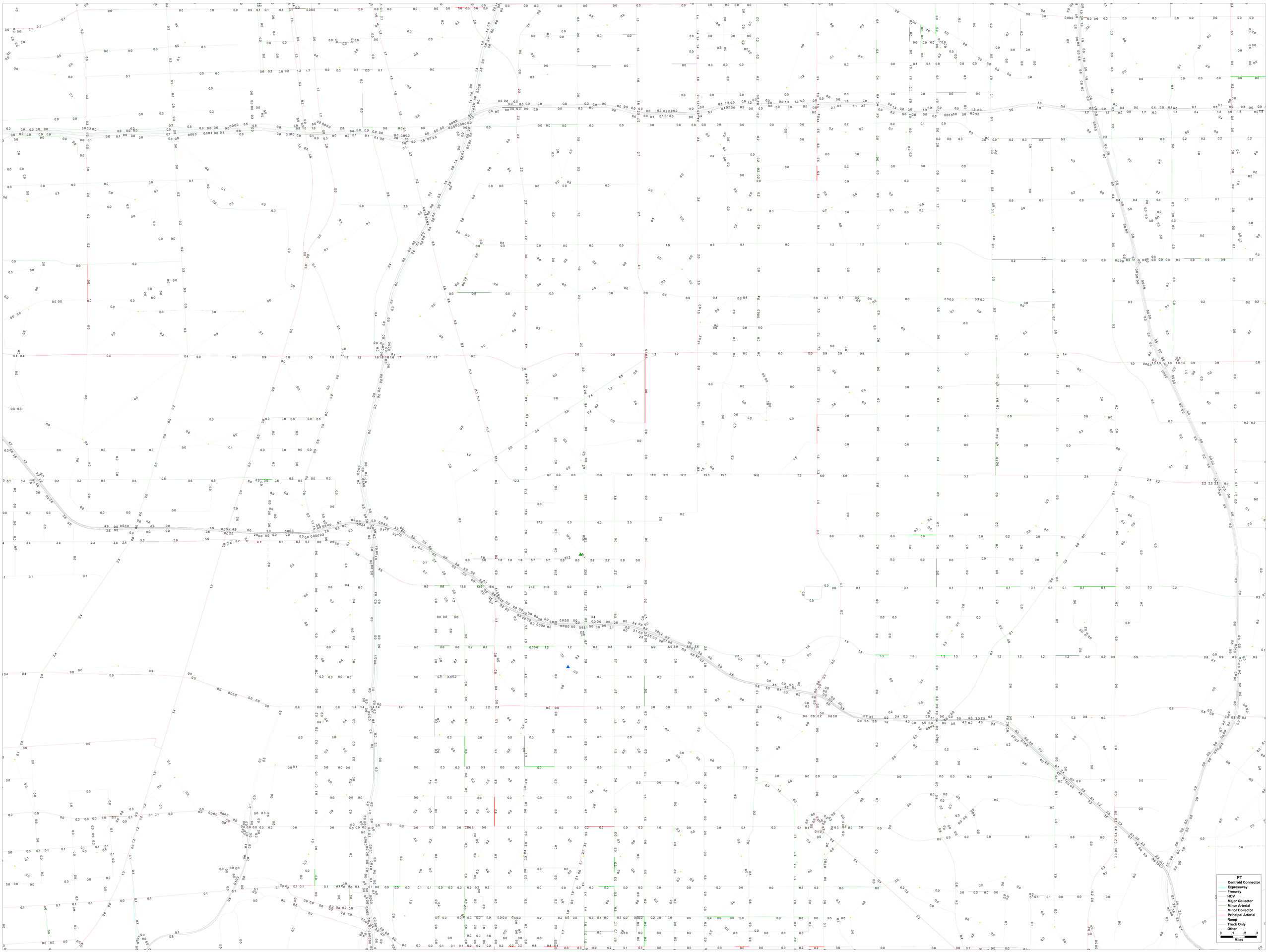
[c] Retail Pass-by trips consist of 10%, 10%, and 34% for Daily, AM peak hour, and PM peak hour, respectively.
High-turnover (Sit-down) Restaurant Pass-by trips consist of 10%, 10%, and 43% for Daily, AM peak hour, and PM peak hour, respectively.
Fast Casual and Fast-Food Restaurant with Drive-through window Pass-by trips consist of 25%, 49%, and 50% for Daily, AM peak hour, and PM peak hour, respectively.
Quality Restaurant Pass-by trips consist of 10%, 10%, and 44% for Daily, AM peak hour, and PM peak hour, respectively.

[d] Existing square footage total reported excludes 1,409,441 SF of existing vacant industrial uses located within TAZ 10 (Boeing Site).

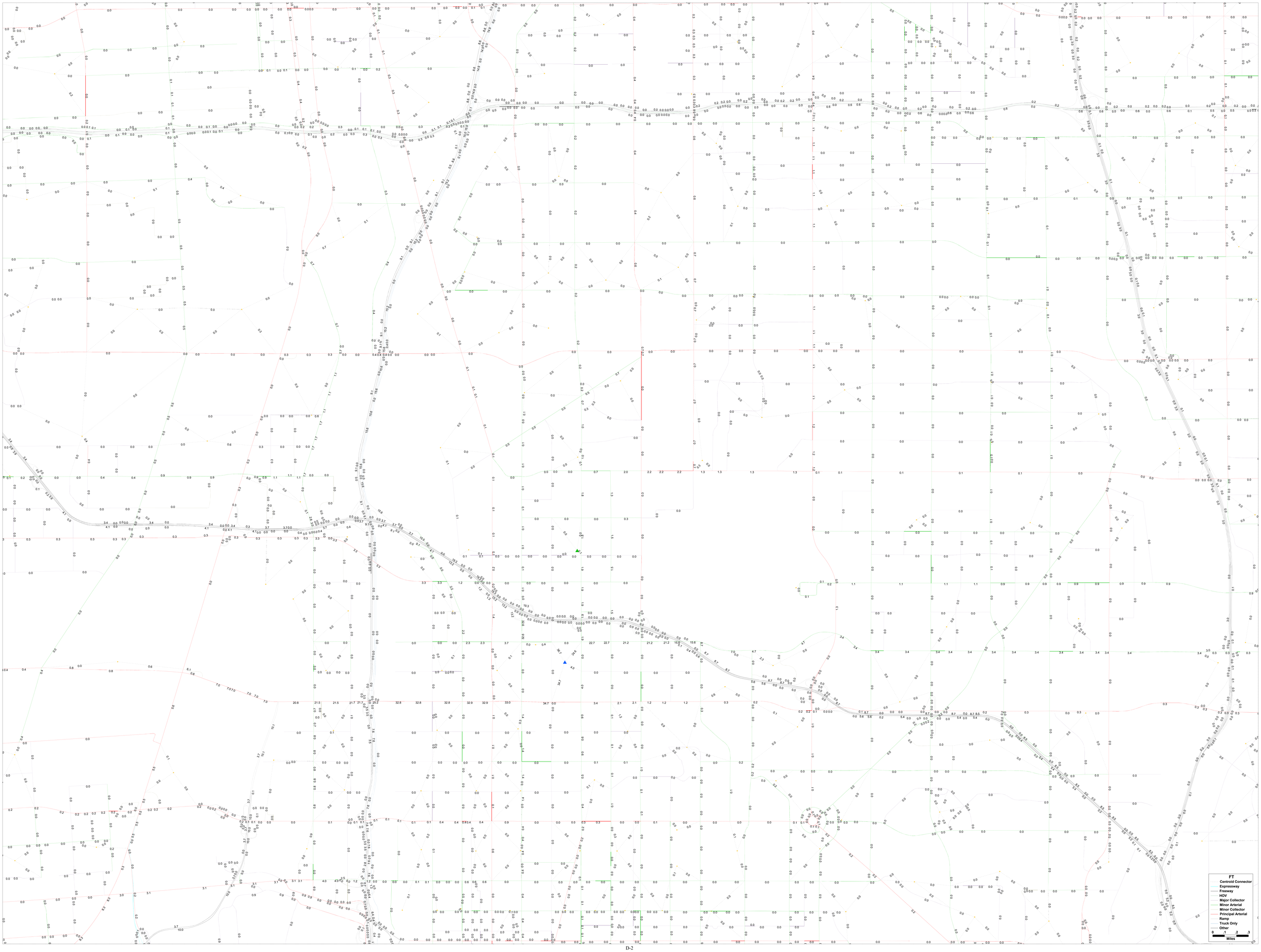
# APPENDIX D

## YEAR 2040 SCAG TRAFFIC MODEL PLOTS FOR GLOBEMASTER CORRIDOR SPECIFIC PLAN TAZ'S

# 2040 SCAG Model - PM Peak All Vehicle Select Zone Distribution (GMSP - Retail and Office Uses)



# 2040 SCAG Model - PM PeakTruck Select Zone Distribution (GMSP - Industrial Use)



# APPENDIX E

## CALTRANS INTERSECTION LEVEL OF SERVICE CALCULATION WORKSHEETS

*APPENDIX E-I*

**EXISTING (2018) TRAFFIC CONDITIONS**

**Intersection Level Of Service Report**
**Intersection 10: I-405 NB Ramps at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 11.2 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.197 |

**Intersection Setup**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 25.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 137 | 11 | 14 | 455 | 0 | 3 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 137 | 11 | 14 | 455 | 0 | 3 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 36 | 3 | 4 | 120 | 0 | 1 |
| Total Analysis Volume [veh/h] | 144 | 12 | 15 | 479 | 0 | 3 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.20 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 11.24 | 10.91 | 0.00 | 0.00 | 8.37 | 0.00 |
| Movement LOS | B | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.80 | 0.80 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 19.98 | 19.98 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 11.21 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 2.68 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Orange Avenue at I-405 SB Ramps**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 275.4 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.310 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 168 | 581 | 496 | 274 | 113 | 265 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 168 | 581 | 496 | 274 | 113 | 265 |
| Peak Hour Factor | 0.8900 | 0.8900 | 0.8900 | 0.8900 | 0.8900 | 0.8900 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 47 | 163 | 139 | 77 | 32 | 74 |
| Total Analysis Volume [veh/h] | 189 | 653 | 557 | 308 | 127 | 298 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.24 | 0.01 | 0.01 | 0.00 | 1.31 | 0.52 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 11.15 | 0.00 | 0.00 | 0.00 | 275.44 | 17.97 |
| Movement LOS | B | A | A | A | F | C |
| 95th-Percentile Queue Length [veh/ln] | 0.96 | 0.00 | 0.00 | 0.00 | 9.03 | 3.01 |
| 95th-Percentile Queue Length [ft/ln] | 23.93 | 0.00 | 0.00 | 0.00 | 225.76 | 75.18 |
| d_A, Approach Delay [s/veh] | 2.50 | | 0.00 | | 94.91 | |
| Approach LOS | A | | A | | F | |
| d_I, Intersection Delay [s/veh] | 19.91 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 18: I-405 SB Off-Ramp at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 34.3 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.668 |

**Intersection Setup**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 25.00 | | | 40.00 | | | 40.00 | |
| Grade [%] | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | |
| Curb Present | | | | | No | | | No | | | No | |
| Crosswalk | | Yes | | | Yes | | | Yes | | | No | |

**Volumes**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 699 | 4 | 210 | 0 | 867 | 8 | 0 | 1240 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 699 | 4 | 210 | 0 | 867 | 8 | 0 | 1240 | 0 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 175 | 1 | 53 | 0 | 217 | 2 | 0 | 310 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 699 | 4 | 210 | 0 | 867 | 8 | 0 | 1240 | 0 |
| Presence of On-Street Parking | | | | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | | 0 | | | 0 | | | 0 | | | 0 | |
| v_di, Inbound Pedestrian Volume crossing m | | 0 | | | 0 | | | 0 | | | 0 | |
| v_co, Outbound Pedestrian Volume crossing | | 0 | | | 0 | | | 0 | | | 0 | |
| v_ci, Inbound Pedestrian Volume crossing mi | | 0 | | | 0 | | | 0 | | | 0 | |
| v_ab, Corner Pedestrian Volume [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Split | Split | Split | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 6 | 0 |
| Maximum Green [s] | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 30 | 0 |
| Amber [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Split [s] | 0 | 0 | 0 | 0 | 46 | 0 | 0 | 44 | 0 | 0 | 44 | 0 |
| Vehicle Extension [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Rest In Walk | | | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | | | | | No | | | No | | | No | |
| Maximum Recall | | | | | No | | | No | | | No | |
| Pedestrian Recall | | | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | | L | C | R | C | C | C |
|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | | 52 | 52 | 52 | 30 | 30 | 30 |
| g / C, Green / Cycle | | 0.58 | 0.58 | 0.58 | 0.33 | 0.33 | 0.33 |
| (v / s)_i Volume / Saturation Flow Rate | | 0.26 | 0.26 | 0.13 | 0.23 | 0.23 | 0.35 |
| s, saturation flow rate [veh/h] | | 1350 | 1350 | 1589 | 1870 | 1864 | 3560 |
| c, Capacity [veh/h] | | 779 | 779 | 917 | 624 | 622 | 1188 |
| d1, Uniform Delay [s] | | 10.86 | 10.86 | 9.25 | 26.02 | 26.05 | 29.92 |
| k, delay calibration | | 0.50 | 0.50 | 0.50 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | | 1.89 | 1.88 | 0.58 | 1.45 | 1.49 | 25.54 |
| d3, Initial Queue Delay [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| X, volume / capacity | | 0.45 | 0.45 | 0.23 | 0.70 | 0.70 | 1.04 |
| d, Delay for Lane Group [s/veh] | | 12.74 | 12.74 | 9.83 | 27.47 | 27.53 | 55.46 |
| Lane Group LOS | | B | B | A | C | C | F |
| Critical Lane Group | | Yes | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | | 4.16 | 4.16 | 2.06 | 7.85 | 7.86 | 16.08 |
| 50th-Percentile Queue Length [ft/ln] | | 104.00 | 103.99 | 51.46 | 196.28 | 196.61 | 402.12 |
| 95th-Percentile Queue Length [veh/ln] | | 7.49 | 7.49 | 3.71 | 12.45 | 12.46 | 23.29 |
| 95th-Percentile Queue Length [ft/ln] | | 187.19 | 187.18 | 92.63 | 311.16 | 311.59 | 582.28 |

**Movement, Approach, & Intersection Results**

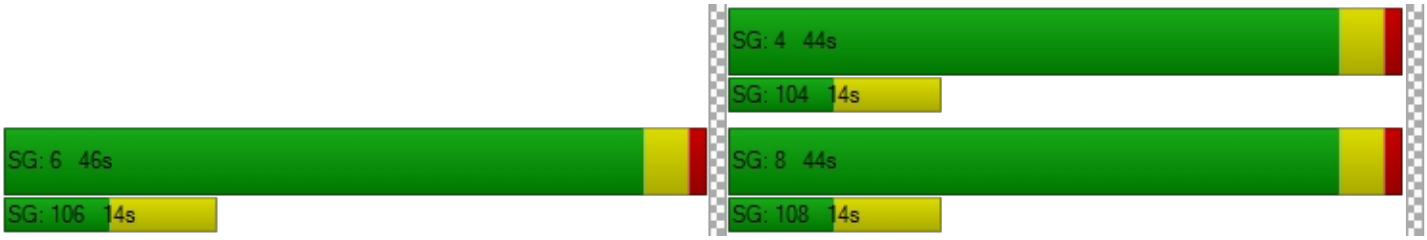
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 12.74 | 12.74 | 9.83 | 0.00 | 27.50 | 27.53 | 0.00 | 55.46 | 0.00 |
| Movement LOS | | | | B | B | A | | C | C | | F | |
| d_A, Approach Delay [s/veh] | 0.00 | | | 12.07 | | | 27.50 | | | 55.46 | | |
| Approach LOS | A | | | B | | | C | | | E | | |
| d_I, Intersection Delay [s/veh] | 34.30 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.668 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 34.67 | 34.67 | 34.67 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 1.435 | 2.187 | 2.886 | 0.000 |
| Crosswalk LOS | A | B | C | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 933 | 889 | 889 |
| d_b, Bicycle Delay [s] | 45.00 | 12.80 | 13.89 | 13.89 |
| l_b,int, Bicycle LOS Score for Intersection | 4.132 | 3.066 | 2.281 | 2.583 |
| Bicycle LOS | D | C | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 20: Temple Avenue at I-405 NB Off-Ramp**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 13.4 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.271 |

**Intersection Setup**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Curb Present | No | | No | | No | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 387 | 0 | 0 | 345 | 246 | 136 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 387 | 0 | 0 | 345 | 246 | 136 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h] | 97 | 0 | 0 | 86 | 62 | 0 |
| Total Analysis Volume [veh/h] | 387 | 0 | 0 | 345 | 246 | 0 |
| Presence of On-Street Parking | No | No | No | No | No | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | 0 | | 0 | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | 0 | | 0 | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | 0 | | 0 | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | 0 | | 0 | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 2 | 0 | 0 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | - | - | - | - | Lead | - |
| Minimum Green [s] | 6 | 0 | 0 | 6 | 6 | 0 |
| Maximum Green [s] | 30 | 0 | 0 | 30 | 30 | 0 |
| Amber [s] | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 1.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 30 | 0 | 0 | 30 | 60 | 0 |
| Vehicle Extension [s] | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 7 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 4 | 0 | 0 | 0 | 0 | 0 |
| Rest In Walk | No | | | No | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Minimum Recall | No | | | No | No | |
| Maximum Recall | No | | | No | No | |
| Pedestrian Recall | No | | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | C | C | L | R |
|---|---|---|---|---|
| C, Cycle Length [s] | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 67 | 67 | 15 | 15 |
| g / C, Green / Cycle | 0.75 | 0.75 | 0.16 | 0.16 |
| (v / s)_i Volume / Saturation Flow Rate | 0.11 | 0.10 | 0.14 | 0.00 |
| s, saturation flow rate [veh/h] | 3560 | 3560 | 1781 | 1589 |
| c, Capacity [veh/h] | 2667 | 2667 | 288 | 257 |
| d1, Uniform Delay [s] | 3.17 | 3.13 | 36.60 | 0.00 |
| k, delay calibration | 0.50 | 0.50 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.11 | 0.10 | 7.07 | 0.00 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | |
|---|---|---|---|---|
| X, volume / capacity | 0.15 | 0.13 | 0.85 | 0.00 |
| d, Delay for Lane Group [s/veh] | 3.29 | 3.23 | 43.67 | 0.00 |
| Lane Group LOS | A | A | D | A |
| Critical Lane Group | Yes | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 0.68 | 0.60 | 5.78 | 0.00 |
| 50th-Percentile Queue Length [ft/ln] | 16.99 | 14.95 | 144.50 | 0.00 |
| 95th-Percentile Queue Length [veh/ln] | 1.22 | 1.08 | 9.72 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 30.59 | 26.90 | 243.08 | 0.00 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 3.29 | 0.00 | 0.00 | 3.23 | 43.67 | 0.00 |
| Movement LOS | A | | | A | D | A |
| d_A, Approach Delay [s/veh] | 3.29 | | 3.23 | | 43.67 | |
| Approach LOS | A | | A | | D | |
| d_I, Intersection Delay [s/veh] | 13.43 | | | | | |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.271 | | | | | |

**Other Modes**

| | | | |
|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 34.67 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 1.814 |
| Crosswalk LOS | F | F | A |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 0 | 0 |
| d_b, Bicycle Delay [s] | 45.00 | 45.00 | 45.00 |
| l_b,int, Bicycle LOS Score for Intersection | 4.452 | 4.417 | 4.132 |
| Bicycle LOS | E | E | D |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 10: I-405 NB Ramps at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 19.7 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.646 |

**Intersection Setup**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 25.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 348 | 2 | 35 | 307 | 11 | 37 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 348 | 2 | 35 | 307 | 11 | 37 |
| Peak Hour Factor | 0.8000 | 0.8000 | 0.8000 | 0.8000 | 0.8000 | 0.8000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 109 | 1 | 11 | 96 | 3 | 12 |
| Total Analysis Volume [veh/h] | 435 | 3 | 44 | 384 | 14 | 46 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.65 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 |
| d_M, Delay for Movement [s/veh] | 19.68 | 18.82 | 0.00 | 0.00 | 8.22 | 0.00 |
| Movement LOS | C | C | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 4.78 | 4.78 | 0.00 | 0.00 | 0.03 | 0.03 |
| 95th-Percentile Queue Length [ft/ln] | 119.57 | 119.57 | 0.00 | 0.00 | 0.74 | 0.74 |
| d_A, Approach Delay [s/veh] | 19.67 | | 0.00 | | 1.92 | |
| Approach LOS | C | | A | | A | |
| d_I, Intersection Delay [s/veh] | 9.43 | | | | | |
| Intersection LOS | C | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Orange Avenue at I-405 SB Ramps**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 399.7 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.588 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 127 | 782 | 685 | 141 | 120 | 146 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 127 | 782 | 685 | 141 | 120 | 146 |
| Peak Hour Factor | 0.9000 | 0.9000 | 0.9000 | 0.9000 | 0.9000 | 0.9000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 35 | 217 | 190 | 39 | 33 | 41 |
| Total Analysis Volume [veh/h] | 141 | 869 | 761 | 157 | 133 | 162 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Free | Free | Stop |
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.19 | 0.01 | 0.01 | 0.00 | 1.59 | 0.30 |
| d_M, Delay for Movement [s/veh] | 11.02 | 0.00 | 0.00 | 0.00 | 399.66 | 14.28 |
| Movement LOS | B | A | A | A | F | B |
| 95th-Percentile Queue Length [veh/ln] | 0.70 | 0.00 | 0.00 | 0.00 | 10.78 | 1.22 |
| 95th-Percentile Queue Length [ft/ln] | 17.52 | 0.00 | 0.00 | 0.00 | 269.49 | 30.62 |
| d_A, Approach Delay [s/veh] | 1.54 | | 0.00 | | 188.03 | |
| Approach LOS | A | | A | | F | |
| d_I, Intersection Delay [s/veh] | 25.65 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 18: I-405 SB Off-Ramp at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 24.9 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.631 |

**Intersection Setup**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 25.00 | | | 40.00 | | | 40.00 | |
| Grade [%] | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | |
| Curb Present | | | | | No | | | No | | | No | |
| Crosswalk | | Yes | | | Yes | | | Yes | | | No | |

**Volumes**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 599 | 1 | 135 | 0 | 1297 | 16 | 0 | 1147 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 599 | 1 | 135 | 0 | 1297 | 16 | 0 | 1147 | 0 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 150 | 0 | 34 | 0 | 324 | 4 | 0 | 287 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 599 | 1 | 135 | 0 | 1297 | 16 | 0 | 1147 | 0 |
| Presence of On-Street Parking | | | | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | | 0 | | | 0 | | | 0 | | | 0 | |
| v_di, Inbound Pedestrian Volume crossing m | | 0 | | | 0 | | | 0 | | | 0 | |
| v_co, Outbound Pedestrian Volume crossing | | 0 | | | 0 | | | 0 | | | 0 | |
| v_ci, Inbound Pedestrian Volume crossing mi | | 0 | | | 0 | | | 0 | | | 0 | |
| v_ab, Corner Pedestrian Volume [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Split | Split | Split | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 6 | 0 |
| Maximum Green [s] | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 30 | 0 |
| Amber [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Split [s] | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 68 | 0 | 0 | 68 | 0 |
| Vehicle Extension [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Rest In Walk | | | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | | | | | No | | | No | | | No | |
| Maximum Recall | | | | | No | | | No | | | No | |
| Pedestrian Recall | | | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | | L | C | R | C | C | C |
|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | | 47 | 47 | 47 | 35 | 35 | 35 |
| g / C, Green / Cycle | | 0.52 | 0.52 | 0.52 | 0.39 | 0.39 | 0.39 |
| (v / s)_i Volume / Saturation Flow Rate | | 0.22 | 0.22 | 0.08 | 0.35 | 0.35 | 0.32 |
| s, saturation flow rate [veh/h] | | 1350 | 1350 | 1589 | 1870 | 1862 | 3560 |
| c, Capacity [veh/h] | | 701 | 701 | 825 | 732 | 729 | 1394 |
| d1, Uniform Delay [s] | | 13.34 | 13.34 | 11.34 | 25.62 | 25.68 | 24.52 |
| k, delay calibration | | 0.50 | 0.50 | 0.50 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | | 1.91 | 1.91 | 0.43 | 4.22 | 4.39 | 1.27 |
| d3, Initial Queue Delay [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| X, volume / capacity | | 0.43 | 0.43 | 0.16 | 0.90 | 0.90 | 0.82 |
|---|---|---|---|---|---|---|---|
| d, Delay for Lane Group [s/veh] | | 15.25 | 15.25 | 11.77 | 29.83 | 30.06 | 25.80 |
| Lane Group LOS | | B | B | B | C | C | C |
| Critical Lane Group | | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | | 3.98 | 3.98 | 1.48 | 12.84 | 12.90 | 10.26 |
| 50th-Percentile Queue Length [ft/ln] | | 99.55 | 99.56 | 36.97 | 320.92 | 322.39 | 256.62 |
| 95th-Percentile Queue Length [veh/ln] | | 7.17 | 7.17 | 2.66 | 18.71 | 18.79 | 15.52 |
| 95th-Percentile Queue Length [ft/ln] | | 179.20 | 179.21 | 66.54 | 467.81 | 469.63 | 387.97 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 15.25 | 15.25 | 11.77 | 0.00 | 29.95 | 30.06 | 0.00 | 25.80 | 0.00 |
| Movement LOS | | | | B | B | B | | C | C | | C | |
| d_A, Approach Delay [s/veh] | 0.00 | | | 14.61 | | | 29.95 | | | 25.80 | | |
| Approach LOS | A | | | B | | | C | | | C | | |
| d_I, Intersection Delay [s/veh] | 24.93 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.631 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 34.67 | 34.67 | 34.67 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 1.439 | 2.139 | 2.974 | 0.000 |
| Crosswalk LOS | A | B | C | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 400 | 1422 | 1422 |
| d_b, Bicycle Delay [s] | 45.00 | 28.80 | 3.76 | 3.76 |
| l_b,int, Bicycle LOS Score for Intersection | 4.132 | 2.772 | 2.643 | 2.506 |
| Bicycle LOS | D | C | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 20: Temple Avenue at I-405 NB Off-Ramp**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 15.9 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.353 |

**Intersection Setup**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Curb Present | No | | No | | No | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 460 | 0 | 0 | 326 | 343 | 115 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 460 | 0 | 0 | 326 | 343 | 115 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h] | 115 | 0 | 0 | 82 | 86 | 0 |
| Total Analysis Volume [veh/h] | 460 | 0 | 0 | 326 | 343 | 0 |
| Presence of On-Street Parking | No | No | No | No | No | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | 0 | | 0 | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | 0 | | 0 | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | 0 | | 0 | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | 0 | | 0 | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 2 | 0 | 0 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | - | - | - | - | Lead | - |
| Minimum Green [s] | 6 | 0 | 0 | 6 | 6 | 0 |
| Maximum Green [s] | 30 | 0 | 0 | 30 | 30 | 0 |
| Amber [s] | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 1.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 26 | 0 | 0 | 26 | 64 | 0 |
| Vehicle Extension [s] | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 7 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 4 | 0 | 0 | 0 | 0 | 0 |
| Rest In Walk | No | | | No | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Minimum Recall | No | | | No | No | |
| Maximum Recall | No | | | No | No | |
| Pedestrian Recall | No | | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | C | C | L | R |
|---|---|---|---|---|
| C, Cycle Length [s] | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 62 | 62 | 20 | 20 |
| g / C, Green / Cycle | 0.69 | 0.69 | 0.22 | 0.22 |
| (v / s)_i Volume / Saturation Flow Rate | 0.13 | 0.09 | 0.19 | 0.00 |
| s, saturation flow rate [veh/h] | 3560 | 3560 | 1781 | 1589 |
| c, Capacity [veh/h] | 2471 | 2471 | 387 | 345 |
| d1, Uniform Delay [s] | 4.83 | 4.63 | 34.10 | 0.00 |
| k, delay calibration | 0.50 | 0.50 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.17 | 0.11 | 6.97 | 0.00 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | |
|---|---|---|---|---|
| X, volume / capacity | 0.19 | 0.13 | 0.89 | 0.00 |
| d, Delay for Lane Group [s/veh] | 5.00 | 4.74 | 41.07 | 0.00 |
| Lane Group LOS | A | A | D | A |
| Critical Lane Group | Yes | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 1.20 | 0.81 | 7.92 | 0.00 |
| 50th-Percentile Queue Length [ft/ln] | 29.94 | 20.32 | 198.04 | 0.00 |
| 95th-Percentile Queue Length [veh/ln] | 2.16 | 1.46 | 12.54 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 53.89 | 36.57 | 313.43 | 0.00 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 5.00 | 0.00 | 0.00 | 4.74 | 41.07 | 0.00 |
| Movement LOS | A | | | A | D | A |
| d_A, Approach Delay [s/veh] | 5.00 | | 4.74 | | 41.07 | |
| Approach LOS | A | | A | | D | |
| d_I, Intersection Delay [s/veh] | 15.89 | | | | | |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.353 | | | | | |

**Other Modes**

| | | | |
|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 34.67 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 1.854 |
| Crosswalk LOS | F | F | A |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 0 | 0 |
| d_b, Bicycle Delay [s] | 45.00 | 45.00 | 45.00 |
| l_b,int, Bicycle LOS Score for Intersection | 4.512 | 4.401 | 4.132 |
| Bicycle LOS | E | E | D |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

*APPENDIX E-II*

# EXISTING (2018) PLUS PROJECT TRAFFIC CONDITIONS

**Intersection Level Of Service Report**
**Intersection 10: I-405 NB Ramps at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 11.7 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.224 |

**Intersection Setup**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 25.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 151 | 11 | 17 | 472 | 4 | 3 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 151 | 11 | 17 | 472 | 4 | 3 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 40 | 3 | 4 | 124 | 1 | 1 |
| Total Analysis Volume [veh/h] | 159 | 12 | 18 | 497 | 4 | 3 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.22 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_M, Delay for Movement [s/veh] | 11.66 | 11.24 | 0.00 | 0.00 | 8.44 | 0.00 |
| Movement LOS | B | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.93 | 0.93 | 0.00 | 0.00 | 0.01 | 0.01 |
| 95th-Percentile Queue Length [ft/ln] | 23.32 | 23.32 | 0.00 | 0.00 | 0.29 | 0.29 |
| d_A, Approach Delay [s/veh] | 11.63 | | 0.00 | | 4.82 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 2.92 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Orange Avenue at I-405 SB Ramps**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 395.8 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 1.574 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 176 | 618 | 538 | 274 | 116 | 294 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 176 | 618 | 538 | 274 | 116 | 294 |
| Peak Hour Factor | 0.8900 | 0.8900 | 0.8900 | 0.8900 | 0.8900 | 0.8900 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 49 | 174 | 151 | 77 | 33 | 83 |
| Total Analysis Volume [veh/h] | 198 | 694 | 604 | 308 | 130 | 330 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Free | Free | Stop |
|---|---|---|---|
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.27 | 0.01 | 0.01 | 0.00 | 1.57 | 0.60 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 11.60 | 0.00 | 0.00 | 0.00 | 395.77 | 20.78 |
| Movement LOS | B | A | A | A | F | C |
| 95th-Percentile Queue Length [veh/ln] | 1.07 | 0.00 | 0.00 | 0.00 | 10.55 | 3.92 |
| 95th-Percentile Queue Length [ft/ln] | 26.83 | 0.00 | 0.00 | 0.00 | 263.69 | 97.91 |
| d_A, Approach Delay [s/veh] | 2.57 | | 0.00 | | 126.76 | |
| Approach LOS | A | | A | | F | |
| d_I, Intersection Delay [s/veh] | 26.77 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 18: I-405 SB Off-Ramp at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 48.4 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.701 |

**Intersection Setup**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 30.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 708 | 4 | 337 | 0 | 925 | 8 | 0 | 1336 | 0 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 708 | 4 | 337 | 0 | 925 | 8 | 0 | 1336 | 0 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 177 | 1 | 84 | 0 | 231 | 2 | 0 | 334 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 708 | 4 | 337 | 0 | 925 | 8 | 0 | 1336 | 0 |
| Presence of On-Street Parking | | | | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Split | Split | Split | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 6 | 0 |
| Maximum Green [s] | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 30 | 0 |
| Amber [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Split [s] | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 71 | 0 | 0 | 71 | 0 |
| Vehicle Extension [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Rest In Walk | | | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | | | | | No | | | No | | | No | |
| Maximum Recall | | | | | No | | | No | | | No | |
| Pedestrian Recall | | | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | | L | C | R | C | C | C |
|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | | 52 | 52 | 52 | 30 | 30 | 30 |
| g / C, Green / Cycle | | 0.58 | 0.58 | 0.58 | 0.33 | 0.33 | 0.33 |
| (v / s)_i Volume / Saturation Flow Rate | | 0.26 | 0.26 | 0.21 | 0.25 | 0.25 | 0.38 |
| s, saturation flow rate [veh/h] | | 1350 | 1350 | 1589 | 1870 | 1864 | 3560 |
| c, Capacity [veh/h] | | 780 | 781 | 919 | 622 | 621 | 1185 |
| d1, Uniform Delay [s] | | 10.86 | 10.86 | 10.15 | 26.64 | 26.66 | 29.96 |
| k, delay calibration | | 0.50 | 0.50 | 0.50 | 0.11 | 0.11 | 0.13 |
| I, Upstream Filtering Factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | | 1.92 | 1.92 | 1.13 | 1.84 | 1.87 | 60.58 |
| d3, Initial Queue Delay [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| X, volume / capacity | | 0.46 | 0.46 | 0.37 | 0.75 | 0.75 | 1.13 |
|---|---|---|---|---|---|---|---|
| d, Delay for Lane Group [s/veh] | | 12.78 | 12.77 | 11.28 | 28.47 | 28.53 | 90.54 |
| Lane Group LOS | | B | B | B | C | C | F |
| Critical Lane Group | | Yes | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | | 4.23 | 4.23 | 3.66 | 8.60 | 8.61 | 21.80 |
| 50th-Percentile Queue Length [ft/ln] | | 105.7 | 105.6 | 91.50 | 214.91 | 215.22 | 545.01 |
| 95th-Percentile Queue Length [veh/ln] | | 7.60 | 7.60 | 6.59 | 13.41 | 13.42 | 31.76 |
| 95th-Percentile Queue Length [ft/ln] | | 190.0 | 189.9 | 164.7 | 335.13 | 335.51 | 794.04 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 12.78 | 12.77 | 11.28 | 0.00 | 28.50 | 28.53 | 0.00 | 90.54 | 0.00 |
| Movement LOS | | | | B | B | B | | C | C | | F | |
| d_A, Approach Delay [s/veh] | 0.00 | | | 12.30 | | | 28.50 | | | 90.54 | | |
| Approach LOS | A | | | B | | | C | | | F | | |
| d_I, Intersection Delay [s/veh] | 48.36 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.701 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 34.67 | 34.67 | 34.67 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 1.435 | 2.224 | 2.978 | 0.000 |
| Crosswalk LOS | A | B | C | F |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 333 | 1489 | 1489 |
| d_b, Bicycle Delay [s] | 45.00 | 31.25 | 2.94 | 2.94 |
| l_b,int, Bicycle LOS Score for Intersection | 4.132 | 3.290 | 2.329 | 2.662 |
| Bicycle LOS | D | C | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 20: Temple Avenue at I-405 NB Off-Ramp**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 12.8 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.285 |

**Intersection Setup**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Curb Present | No | | No | | No | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 432 | 0 | 0 | 373 | 246 | 142 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 432 | 0 | 0 | 373 | 246 | 142 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h] | 108 | 0 | 0 | 93 | 62 | 0 |
| Total Analysis Volume [veh/h] | 432 | 0 | 0 | 373 | 246 | 0 |
| Presence of On-Street Parking | No | No | No | No | No | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0 | | 0 | | 0 | |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h] | 0 | | 0 | | 0 | |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0 | | 0 | | 0 | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h] | 0 | | 0 | | 0 | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 2 | 0 | 0 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | - | - | - | - | Lead | - |
| Minimum Green [s] | 6 | 0 | 0 | 6 | 6 | 0 |
| Maximum Green [s] | 30 | 0 | 0 | 30 | 30 | 0 |
| Amber [s] | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 1.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 30 | 0 | 0 | 30 | 60 | 0 |
| Vehicle Extension [s] | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 7 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 4 | 0 | 0 | 0 | 0 | 0 |
| Rest In Walk | No | | | No | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Minimum Recall | No | | | No | No | |
| Maximum Recall | No | | | No | No | |
| Pedestrian Recall | No | | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | C | C | L | R |
|---|---|---|---|---|
| C, Cycle Length [s] | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 67 | 67 | 15 | 15 |
| g / C, Green / Cycle | 0.75 | 0.75 | 0.16 | 0.16 |
| (v / s)_i Volume / Saturation Flow Rate | 0.12 | 0.10 | 0.14 | 0.00 |
| s, saturation flow rate [veh/h] | 3560 | 3560 | 1781 | 1589 |
| c, Capacity [veh/h] | 2667 | 2667 | 288 | 257 |
| d1, Uniform Delay [s] | 3.22 | 3.16 | 36.60 | 0.00 |
| k, delay calibration | 0.50 | 0.50 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.13 | 0.11 | 7.07 | 0.00 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | |
|---|---|---|---|---|
| X, volume / capacity | 0.16 | 0.14 | 0.85 | 0.00 |
| d, Delay for Lane Group [s/veh] | 3.35 | 3.27 | 43.67 | 0.00 |
| Lane Group LOS | A | A | D | A |
| Critical Lane Group | Yes | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 0.77 | 0.65 | 5.78 | 0.00 |
| 50th-Percentile Queue Length [ft/ln] | 19.25 | 16.31 | 144.50 | 0.00 |
| 95th-Percentile Queue Length [veh/ln] | 1.39 | 1.17 | 9.72 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 34.65 | 29.35 | 243.08 | 0.00 |

**Movement, Approach, & Intersection Results**

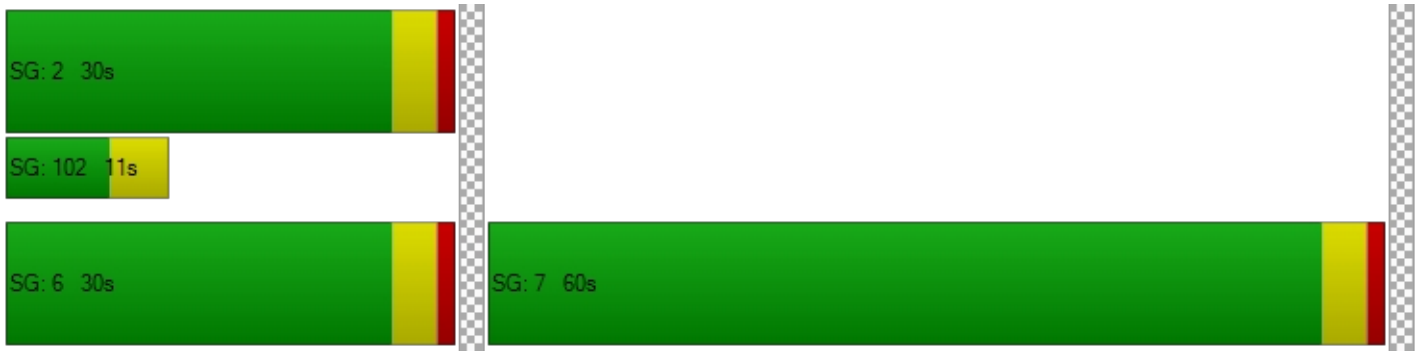
| | | | | | | |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 3.35 | 0.00 | 0.00 | 3.27 | 43.67 | 0.00 |
| Movement LOS | A | | | A | D | A |
| d_A, Approach Delay [s/veh] | 3.35 | | 3.27 | | 43.67 | |
| Approach LOS | A | | A | | D | |
| d_I, Intersection Delay [s/veh] | 12.76 | | | | | |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.285 | | | | | |

**Other Modes**

| | | | |
|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 34.67 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 1.814 |
| Crosswalk LOS | F | F | A |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 0 | 0 |
| d_b, Bicycle Delay [s] | 45.00 | 45.00 | 45.00 |
| l_b,int, Bicycle LOS Score for Intersection | 4.489 | 4.440 | 4.132 |
| Bicycle LOS | E | E | D |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 10: I-405 NB Ramps at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 24.7 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.724 |

**Intersection Setup**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 25.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 360 | 2 | 43 | 345 | 19 | 37 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 360 | 2 | 43 | 345 | 19 | 37 |
| Peak Hour Factor | 0.8000 | 0.8000 | 0.8000 | 0.8000 | 0.8000 | 0.8000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 113 | 1 | 13 | 108 | 6 | 12 |
| Total Analysis Volume [veh/h] | 450 | 3 | 54 | 431 | 24 | 46 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.72 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 |
| d_M, Delay for Movement [s/veh] | 24.71 | 23.60 | 0.00 | 0.00 | 8.42 | 0.00 |
| Movement LOS | C | C | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 6.21 | 6.21 | 0.00 | 0.00 | 0.05 | 0.05 |
| 95th-Percentile Queue Length [ft/ln] | 155.30 | 155.30 | 0.00 | 0.00 | 1.35 | 1.35 |
| d_A, Approach Delay [s/veh] | 24.71 | | 0.00 | | 2.89 | |
| Approach LOS | C | | A | | A | |
| d_I, Intersection Delay [s/veh] | 11.30 | | | | | |
| Intersection LOS | C | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Orange Avenue at I-405 SB Ramps**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 726.2 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | F |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 2.276 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 146 | 874 | 743 | 141 | 128 | 169 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 146 | 874 | 743 | 141 | 128 | 169 |
| Peak Hour Factor | 0.9000 | 0.9000 | 0.9000 | 0.9000 | 0.9000 | 0.9000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 41 | 243 | 206 | 39 | 36 | 47 |
| Total Analysis Volume [veh/h] | 162 | 971 | 826 | 157 | 142 | 188 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Free | Free | Stop |
| Flared Lane | | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | | | No |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.23 | 0.01 | 0.01 | 0.00 | 2.28 | 0.36 |
| d_M, Delay for Movement [s/veh] | 11.71 | 0.00 | 0.00 | 0.00 | 726.23 | 15.70 |
| Movement LOS | B | A | A | A | F | C |
| 95th-Percentile Queue Length [veh/ln] | 0.89 | 0.00 | 0.00 | 0.00 | 13.81 | 1.62 |
| 95th-Percentile Queue Length [ft/ln] | 22.36 | 0.00 | 0.00 | 0.00 | 345.23 | 40.54 |
| d_A, Approach Delay [s/veh] | 1.67 | | 0.00 | | 321.45 | |
| Approach LOS | A | | A | | F | |
| d_I, Intersection Delay [s/veh] | 44.14 | | | | | |
| Intersection LOS | F | | | | | |

**Intersection Level Of Service Report**
**Intersection 18: I-405 SB Off-Ramp at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 23.9 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.675 |

**Intersection Setup**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 30.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 614 | 1 | 174 | 0 | 1426 | 16 | 0 | 1230 | 0 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 614 | 1 | 174 | 0 | 1426 | 16 | 0 | 1230 | 0 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 154 | 0 | 44 | 0 | 357 | 4 | 0 | 308 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 614 | 1 | 174 | 0 | 1426 | 16 | 0 | 1230 | 0 |
| Presence of On-Street Parking | | | | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Split | Split | Split | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 6 | 0 |
| Maximum Green [s] | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 30 | 0 |
| Amber [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Split [s] | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 72 | 0 | 0 | 72 | 0 |
| Vehicle Extension [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Rest In Walk | | | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | | | | | No | | | No | | | No | |
| Maximum Recall | | | | | No | | | No | | | No | |
| Pedestrian Recall | | | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | | L | C | R | C | C | C |
|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | | 43 | 43 | 43 | 39 | 39 | 39 |
| g / C, Green / Cycle | | 0.48 | 0.48 | 0.48 | 0.43 | 0.43 | 0.43 |
| (v / s)_i Volume / Saturation Flow Rate | | 0.23 | 0.23 | 0.11 | 0.39 | 0.39 | 0.35 |
| s, saturation flow rate [veh/h] | | 1350 | 1350 | 1589 | 1870 | 1863 | 3560 |
| c, Capacity [veh/h] | | 651 | 651 | 767 | 801 | 798 | 1526 |
| d1, Uniform Delay [s] | | 15.59 | 15.59 | 13.52 | 23.90 | 23.96 | 22.43 |
| k, delay calibration | | 0.50 | 0.50 | 0.50 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | | 2.45 | 2.45 | 0.69 | 4.00 | 4.15 | 1.05 |
| d3, Initial Queue Delay [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| X, volume / capacity | | 0.47 | 0.47 | 0.23 | 0.90 | 0.90 | 0.81 |
|---|---|---|---|---|---|---|---|
| d, Delay for Lane Group [s/veh] | | 18.04 | 18.04 | 14.21 | 27.90 | 28.11 | 23.48 |
| Lane Group LOS | | B | B | B | C | C | C |
| Critical Lane Group | | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | | 4.54 | 4.54 | 2.15 | 13.72 | 13.78 | 10.50 |
| 50th-Percentile Queue Length [ft/ln] | | 113.4 | 113.4 | 53.87 | 343.06 | 344.61 | 262.41 |
| 95th-Percentile Queue Length [veh/ln] | | 8.03 | 8.03 | 3.88 | 19.80 | 19.87 | 15.81 |
| 95th-Percentile Queue Length [ft/ln] | | 200.7 | 200.7 | 96.97 | 494.94 | 496.83 | 395.25 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 18.04 | 18.04 | 14.21 | 0.00 | 28.00 | 28.11 | 0.00 | 23.48 | 0.00 |
| Movement LOS | | | | B | B | B | | C | C | | C | |
| d_A, Approach Delay [s/veh] | 0.00 | | | 17.19 | | | 28.00 | | | 23.48 | | |
| Approach LOS | A | | | B | | | C | | | C | | |
| d_I, Intersection Delay [s/veh] | 23.93 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.675 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 34.67 | 34.67 | 34.67 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 1.439 | 2.153 | 3.056 | 0.000 |
| Crosswalk LOS | A | B | C | F |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 311 | 1511 | 1511 |
| d_b, Bicycle Delay [s] | 45.00 | 32.09 | 2.69 | 2.69 |
| l_b,int, Bicycle LOS Score for Intersection | 4.132 | 2.861 | 2.749 | 2.574 |
| Bicycle LOS | D | C | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 20: Temple Avenue at I-405 NB Off-Ramp**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 15.1 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.363 |

**Intersection Setup**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Curb Present | No | | No | | No | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 492 | 0 | 0 | 385 | 343 | 129 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 492 | 0 | 0 | 385 | 343 | 129 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h] | 123 | 0 | 0 | 96 | 86 | 0 |
| Total Analysis Volume [veh/h] | 492 | 0 | 0 | 385 | 343 | 0 |
| Presence of On-Street Parking | No | No | No | No | No | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0 | | 0 | | 0 | |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h] | 0 | | 0 | | 0 | |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0 | | 0 | | 0 | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h] | 0 | | 0 | | 0 | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 2 | 0 | 0 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | - | - | - | - | Lead | - |
| Minimum Green [s] | 6 | 0 | 0 | 6 | 6 | 0 |
| Maximum Green [s] | 30 | 0 | 0 | 30 | 30 | 0 |
| Amber [s] | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 1.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 26 | 0 | 0 | 26 | 64 | 0 |
| Vehicle Extension [s] | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 7 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 4 | 0 | 0 | 0 | 0 | 0 |
| Rest In Walk | No | | | No | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Minimum Recall | No | | | No | No | |
| Maximum Recall | No | | | No | No | |
| Pedestrian Recall | No | | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | C | C | L | R |
|---|---|---|---|---|
| C, Cycle Length [s] | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 62 | 62 | 20 | 20 |
| g / C, Green / Cycle | 0.69 | 0.69 | 0.22 | 0.22 |
| (v / s)_i Volume / Saturation Flow Rate | 0.14 | 0.11 | 0.19 | 0.00 |
| s, saturation flow rate [veh/h] | 3560 | 3560 | 1781 | 1589 |
| c, Capacity [veh/h] | 2471 | 2471 | 387 | 345 |
| d1, Uniform Delay [s] | 4.88 | 4.72 | 34.10 | 0.00 |
| k, delay calibration | 0.50 | 0.50 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.18 | 0.13 | 6.97 | 0.00 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | |
|---|---|---|---|---|
| X, volume / capacity | 0.20 | 0.16 | 0.89 | 0.00 |
| d, Delay for Lane Group [s/veh] | 5.06 | 4.85 | 41.07 | 0.00 |
| Lane Group LOS | A | A | D | A |
| Critical Lane Group | Yes | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 1.29 | 0.98 | 7.92 | 0.00 |
| 50th-Percentile Queue Length [ft/ln] | 32.37 | 24.45 | 198.04 | 0.00 |
| 95th-Percentile Queue Length [veh/ln] | 2.33 | 1.76 | 12.54 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 58.26 | 44.01 | 313.43 | 0.00 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 5.06 | 0.00 | 0.00 | 4.85 | 41.07 | 0.00 |
| Movement LOS | A | | | A | D | A |
| d_A, Approach Delay [s/veh] | 5.06 | | 4.85 | | 41.07 | |
| Approach LOS | A | | A | | D | |
| d_I, Intersection Delay [s/veh] | 15.12 | | | | | |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.363 | | | | | |

**Other Modes**

| | | | |
|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 34.67 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 1.854 |
| Crosswalk LOS | F | F | A |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 0 | 0 |
| d_b, Bicycle Delay [s] | 45.00 | 45.00 | 45.00 |
| l_b,int, Bicycle LOS Score for Intersection | 4.538 | 4.450 | 4.132 |
| Bicycle LOS | E | E | D |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

*APPENDIX E-III*

# YEAR 2040 BASELINE TRAFFIC CONDITIONS

**Intersection Level Of Service Report**
**Intersection 10: I-405 NB Ramps at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 11.5 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.215 |

**Intersection Setup**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 25.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 146 | 11 | 14 | 485 | 0 | 3 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 146 | 11 | 14 | 485 | 0 | 3 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 38 | 3 | 4 | 128 | 0 | 1 |
| Total Analysis Volume [veh/h] | 154 | 12 | 15 | 511 | 0 | 3 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.22 | 0.02 | 0.00 | 0.01 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 11.52 | 11.18 | 0.00 | 0.00 | 8.46 | 0.00 |
| Movement LOS | B | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 0.89 | 0.89 | 0.00 | 0.00 | 0.00 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 22.21 | 22.21 | 0.00 | 0.00 | 0.00 | 0.00 |
| d_A, Approach Delay [s/veh] | 11.50 | | 0.00 | | 0.00 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 2.75 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Orange Avenue at I-405 SB Ramps**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 18.9 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.605 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Curb Present | No | | No | | No | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 179 | 619 | 528 | 292 | 120 | 282 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 179 | 619 | 528 | 292 | 120 | 282 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 45 | 155 | 132 | 73 | 30 | 71 |
| Total Analysis Volume [veh/h] | 179 | 619 | 528 | 292 | 120 | 282 |
| Presence of On-Street Parking | No | No | No | No | No | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | 0 | | 0 | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | 0 | | 0 | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | 0 | | 0 | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | 0 | | 0 | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Protected | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 6 | 0 | 3 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | Lead | - |
| Minimum Green [s] | 6 | 6 | 6 | 0 | 6 | 0 |
| Maximum Green [s] | 30 | 30 | 30 | 0 | 30 | 0 |
| Amber [s] | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 1.0 | 1.0 | 1.0 | 0.0 | 1.0 | 0.0 |
| Split [s] | 22 | 44 | 22 | 0 | 46 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 0 | 7 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 11 | 0 | 11 | 0 |
| Rest In Walk | | No | No | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 2.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 2.0 | 2.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | No | | No | |
| Maximum Recall | No | No | No | | No | |
| Pedestrian Recall | No | No | No | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | C | L | R |
|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 11 | 64 | 49 | 49 | 19 | 19 |
| g / C, Green / Cycle | 0.12 | 0.71 | 0.54 | 0.54 | 0.21 | 0.21 |
| (v / s)_i Volume / Saturation Flow Rate | 0.10 | 0.17 | 0.22 | 0.25 | 0.07 | 0.18 |
| s, saturation flow rate [veh/h] | 1781 | 3560 | 1870 | 1661 | 1781 | 1589 |
| c, Capacity [veh/h] | 217 | 2512 | 1008 | 896 | 366 | 327 |
| d1, Uniform Delay [s] | 38.59 | 4.73 | 12.25 | 12.70 | 30.46 | 34.53 |
| k, delay calibration | 0.11 | 0.50 | 0.50 | 0.50 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 7.67 | 0.23 | 1.22 | 1.69 | 0.52 | 6.72 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| X, volume / capacity | 0.82 | 0.25 | 0.41 | 0.46 | 0.33 | 0.86 |
| d, Delay for Lane Group [s/veh] | 46.26 | 4.96 | 13.47 | 14.38 | 30.97 | 41.25 |
| Lane Group LOS | D | A | B | B | C | D |
| Critical Lane Group | Yes | No | No | Yes | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 4.17 | 1.59 | 4.64 | 4.87 | 2.27 | 6.51 |
| 50th-Percentile Queue Length [ft/ln] | 104.23 | 39.74 | 115.88 | 121.76 | 56.67 | 162.75 |
| 95th-Percentile Queue Length [veh/ln] | 7.50 | 2.86 | 8.17 | 8.49 | 4.08 | 10.69 |
| 95th-Percentile Queue Length [ft/ln] | 187.62 | 71.53 | 204.15 | 212.25 | 102.00 | 267.36 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 46.26 | 4.96 | 13.67 | 14.38 | 30.97 | 41.25 |
| Movement LOS | D | A | B | B | C | D |
| d_A, Approach Delay [s/veh] | 14.23 | | 13.93 | | 38.18 | |
| Approach LOS | B | | B | | D | |
| d_I, Intersection Delay [s/veh] | 18.87 | | | | | |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.605 | | | | | |

**Other Modes**

| | | | |
|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 11.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 34.67 | 0.00 | 34.67 |
| l_p,int, Pedestrian LOS Score for Intersection | 2.717 | 0.000 | 2.176 |
| Crosswalk LOS | B | F | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 0 | 0 |
| d_b, Bicycle Delay [s] | 45.00 | 45.00 | 45.00 |
| l_b,int, Bicycle LOS Score for Intersection | 4.791 | 4.809 | 4.132 |
| Bicycle LOS | E | E | D |

## Sequence

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 18: I-405 SB Off-Ramp at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 46.1 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.711 |

**Intersection Setup**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 25.00 | | | 40.00 | | | 40.00 | |
| Grade [%] | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | |
| Curb Present | | | | | No | | | No | | | No | |
| Crosswalk | | Yes | | | Yes | | | Yes | | | No | |

**Volumes**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 744 | 4 | 223 | 0 | 923 | 8 | 0 | 1321 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 744 | 4 | 223 | 0 | 923 | 8 | 0 | 1321 | 0 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 186 | 1 | 56 | 0 | 231 | 2 | 0 | 330 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 744 | 4 | 223 | 0 | 923 | 8 | 0 | 1321 | 0 |
| Presence of On-Street Parking | | | | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | | 0 | | | 0 | | | 0 | | | 0 | |
| v_di, Inbound Pedestrian Volume crossing m | | 0 | | | 0 | | | 0 | | | 0 | |
| v_co, Outbound Pedestrian Volume crossing | | 0 | | | 0 | | | 0 | | | 0 | |
| v_ci, Inbound Pedestrian Volume crossing mi | | 0 | | | 0 | | | 0 | | | 0 | |
| v_ab, Corner Pedestrian Volume [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Split | Split | Split | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 6 | 0 |
| Maximum Green [s] | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 30 | 0 |
| Amber [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Split [s] | 0 | 0 | 0 | 0 | 43 | 0 | 0 | 47 | 0 | 0 | 47 | 0 |
| Vehicle Extension [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Rest In Walk | | | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | | | | | No | | | No | | | No | |
| Maximum Recall | | | | | No | | | No | | | No | |
| Pedestrian Recall | | | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | | L | C | R | C | C | C |
|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | | 52 | 52 | 52 | 30 | 30 | 30 |
| g / C, Green / Cycle | | 0.58 | 0.58 | 0.58 | 0.33 | 0.33 | 0.33 |
| (v / s)_i Volume / Saturation Flow Rate | | 0.28 | 0.28 | 0.14 | 0.25 | 0.25 | 0.37 |
| s, saturation flow rate [veh/h] | | 1350 | 1350 | 1589 | 1870 | 1864 | 3560 |
| c, Capacity [veh/h] | | 779 | 779 | 917 | 625 | 623 | 1189 |
| d1, Uniform Delay [s] | | 11.12 | 11.12 | 9.35 | 26.53 | 26.55 | 29.91 |
| k, delay calibration | | 0.50 | 0.50 | 0.50 | 0.11 | 0.11 | 0.12 |
| I, Upstream Filtering Factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | | 2.12 | 2.11 | 0.63 | 1.80 | 1.82 | 53.45 |
| d3, Initial Queue Delay [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| X, volume / capacity | | 0.48 | 0.48 | 0.24 | 0.75 | 0.75 | 1.11 |
|---|---|---|---|---|---|---|---|
| d, Delay for Lane Group [s/veh] | | 13.23 | 13.23 | 9.98 | 28.32 | 28.38 | 83.37 |
| Lane Group LOS | | B | B | A | C | C | F |
| Critical Lane Group | | Yes | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | | 4.54 | 4.54 | 2.21 | 8.56 | 8.57 | 20.70 |
| 50th-Percentile Queue Length [ft/ln] | | 113.59 | 113.56 | 55.22 | 213.94 | 214.24 | 517.61 |
| 95th-Percentile Queue Length [veh/ln] | | 8.04 | 8.04 | 3.98 | 13.36 | 13.37 | 30.11 |
| 95th-Percentile Queue Length [ft/ln] | | 200.98 | 200.94 | 99.40 | 333.88 | 334.27 | 752.63 |

**Movement, Approach, & Intersection Results**

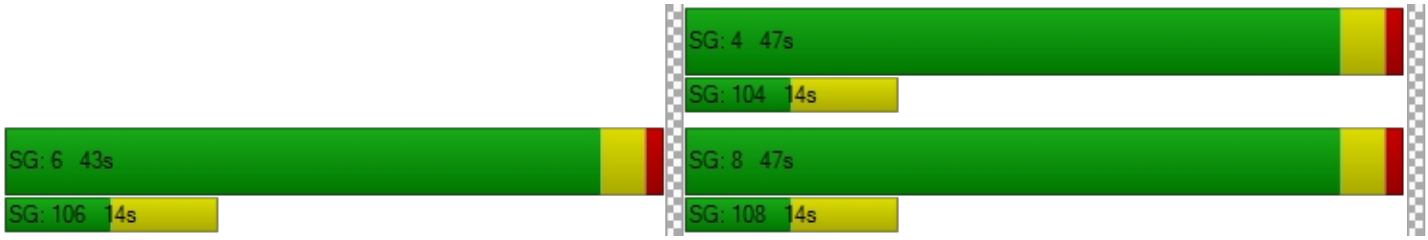
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 13.23 | 13.23 | 9.98 | 0.00 | 28.35 | 28.38 | 0.00 | 83.37 | 0.00 |
| Movement LOS | | | | B | B | A | | C | C | | F | |
| d_A, Approach Delay [s/veh] | 0.00 | | | 12.48 | | | 28.35 | | | 83.37 | | |
| Approach LOS | A | | | B | | | C | | | F | | |
| d_I, Intersection Delay [s/veh] | 46.12 | | | | | | | | | | | |
| Intersection LOS | D | | | | | | | | | | | |
| Intersection V/C | 0.711 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 34.67 | 34.67 | 34.67 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 1.435 | 2.203 | 2.935 | 0.000 |
| Crosswalk LOS | A | B | C | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 867 | 956 | 956 |
| d_b, Bicycle Delay [s] | 45.00 | 14.45 | 12.27 | 12.27 |
| l_b,int, Bicycle LOS Score for Intersection | 4.132 | 3.162 | 2.328 | 2.649 |
| Bicycle LOS | D | C | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 20: Temple Avenue at I-405 NB Off-Ramp**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 13.5 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.289 |

**Intersection Setup**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Curb Present | No | | No | | No | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 413 | 0 | 0 | 367 | 262 | 145 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 413 | 0 | 0 | 367 | 262 | 145 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h] | 103 | 0 | 0 | 92 | 66 | 0 |
| Total Analysis Volume [veh/h] | 413 | 0 | 0 | 367 | 262 | 0 |
| Presence of On-Street Parking | No | No | No | No | No | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | 0 | | 0 | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | 0 | | 0 | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | 0 | | 0 | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | 0 | | 0 | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 2 | 0 | 0 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | - | - | - | - | Lead | - |
| Minimum Green [s] | 6 | 0 | 0 | 6 | 6 | 0 |
| Maximum Green [s] | 30 | 0 | 0 | 30 | 30 | 0 |
| Amber [s] | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 1.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 30 | 0 | 0 | 30 | 60 | 0 |
| Vehicle Extension [s] | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 7 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 4 | 0 | 0 | 0 | 0 | 0 |
| Rest In Walk | No | | | No | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Minimum Recall | No | | | No | No | |
| Maximum Recall | No | | | No | No | |
| Pedestrian Recall | No | | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | C | C | L | R |
|---|---|---|---|---|
| C, Cycle Length [s] | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 67 | 67 | 15 | 15 |
| g / C, Green / Cycle | 0.74 | 0.74 | 0.17 | 0.17 |
| (v / s)_i Volume / Saturation Flow Rate | 0.12 | 0.10 | 0.15 | 0.00 |
| s, saturation flow rate [veh/h] | 3560 | 3560 | 1781 | 1589 |
| c, Capacity [veh/h] | 2634 | 2634 | 305 | 272 |
| d1, Uniform Delay [s] | 3.44 | 3.39 | 36.19 | 0.00 |
| k, delay calibration | 0.50 | 0.50 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.13 | 0.11 | 7.05 | 0.00 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | |
|---|---|---|---|---|
| X, volume / capacity | 0.16 | 0.14 | 0.86 | 0.00 |
| d, Delay for Lane Group [s/veh] | 3.56 | 3.50 | 43.24 | 0.00 |
| Lane Group LOS | A | A | D | A |
| Critical Lane Group | Yes | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 0.79 | 0.69 | 6.14 | 0.00 |
| 50th-Percentile Queue Length [ft/ln] | 19.64 | 17.20 | 153.45 | 0.00 |
| 95th-Percentile Queue Length [veh/ln] | 1.41 | 1.24 | 10.20 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 35.36 | 30.96 | 255.03 | 0.00 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 3.56 | 0.00 | 0.00 | 3.50 | 43.24 | 0.00 |
| Movement LOS | A | | | A | D | A |
| d_A, Approach Delay [s/veh] | 3.56 | | 3.50 | | 43.24 | |
| Approach LOS | A | | A | | D | |
| d_I, Intersection Delay [s/veh] | 13.52 | | | | | |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.289 | | | | | |

**Other Modes**

| | | | |
|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 34.67 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 1.821 |
| Crosswalk LOS | F | F | A |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 0 | 0 |
| d_b, Bicycle Delay [s] | 45.00 | 45.00 | 45.00 |
| l_b,int, Bicycle LOS Score for Intersection | 4.473 | 4.435 | 4.132 |
| Bicycle LOS | E | E | D |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 10: I-405 NB Ramps at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 22.6 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.705 |

**Intersection Setup**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 25.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 371 | 2 | 37 | 327 | 11 | 39 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 371 | 2 | 37 | 327 | 11 | 39 |
| Peak Hour Factor | 0.8000 | 0.8000 | 0.8000 | 0.8000 | 0.8000 | 0.8000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 116 | 1 | 12 | 102 | 3 | 12 |
| Total Analysis Volume [veh/h] | 464 | 3 | 46 | 409 | 14 | 49 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.71 | 0.00 | 0.00 | 0.00 | 0.01 | 0.00 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 22.64 | 21.74 | 0.00 | 0.00 | 8.30 | 0.00 |
| Movement LOS | C | C | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 5.87 | 5.87 | 0.00 | 0.00 | 0.03 | 0.03 |
| 95th-Percentile Queue Length [ft/ln] | 146.69 | 146.69 | 0.00 | 0.00 | 0.75 | 0.75 |
| d_A, Approach Delay [s/veh] | 22.64 | | 0.00 | | 1.84 | |
| Approach LOS | C | | A | | A | |
| d_I, Intersection Delay [s/veh] | 10.85 | | | | | |
| Intersection LOS | C | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Orange Avenue at I-405 SB Ramps**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 13.3 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.488 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Curb Present | No | | No | | No | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 135 | 833 | 730 | 150 | 128 | 155 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 135 | 833 | 730 | 150 | 128 | 155 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 34 | 208 | 183 | 38 | 32 | 39 |
| Total Analysis Volume [veh/h] | 135 | 833 | 730 | 150 | 128 | 155 |
| Presence of On-Street Parking | No | No | No | No | No | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | 0 | | 0 | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | 0 | | 0 | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | 0 | | 0 | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | 0 | | 0 | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Protected | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 6 | 0 | 3 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | Lead | - |
| Minimum Green [s] | 6 | 6 | 6 | 0 | 6 | 0 |
| Maximum Green [s] | 30 | 30 | 30 | 0 | 30 | 0 |
| Amber [s] | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 1.0 | 1.0 | 1.0 | 0.0 | 1.0 | 0.0 |
| Split [s] | 37 | 59 | 22 | 0 | 31 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 0 | 7 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 11 | 0 | 11 | 0 |
| Rest In Walk | | No | No | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 2.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 2.0 | 2.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | No | | No | |
| Maximum Recall | No | No | No | | No | |
| Pedestrian Recall | No | No | No | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | C | L | R |
|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 9 | 71 | 58 | 58 | 11 | 11 |
| g / C, Green / Cycle | 0.10 | 0.79 | 0.65 | 0.65 | 0.12 | 0.12 |
| (v / s)_i Volume / Saturation Flow Rate | 0.08 | 0.23 | 0.24 | 0.25 | 0.07 | 0.10 |
| s, saturation flow rate [veh/h] | 1781 | 3560 | 1870 | 1764 | 1781 | 1589 |
| c, Capacity [veh/h] | 172 | 2801 | 1208 | 1139 | 221 | 198 |
| d1, Uniform Delay [s] | 39.76 | 2.67 | 7.39 | 7.53 | 37.20 | 38.25 |
| k, delay calibration | 0.11 | 0.50 | 0.50 | 0.50 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 7.64 | 0.27 | 0.85 | 0.99 | 2.38 | 6.69 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| X, volume / capacity | 0.78 | 0.30 | 0.36 | 0.39 | 0.58 | 0.78 |
| d, Delay for Lane Group [s/veh] | 47.39 | 2.94 | 8.24 | 8.52 | 39.57 | 44.94 |
| Lane Group LOS | D | A | A | A | D | D |
| Critical Lane Group | Yes | No | No | Yes | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 3.18 | 1.19 | 3.45 | 3.54 | 2.80 | 3.67 |
| 50th-Percentile Queue Length [ft/ln] | 79.46 | 29.65 | 86.34 | 88.52 | 70.01 | 91.82 |
| 95th-Percentile Queue Length [veh/ln] | 5.72 | 2.13 | 6.22 | 6.37 | 5.04 | 6.61 |
| 95th-Percentile Queue Length [ft/ln] | 143.03 | 53.37 | 155.40 | 159.34 | 126.01 | 165.27 |

**Movement, Approach, & Intersection Results**

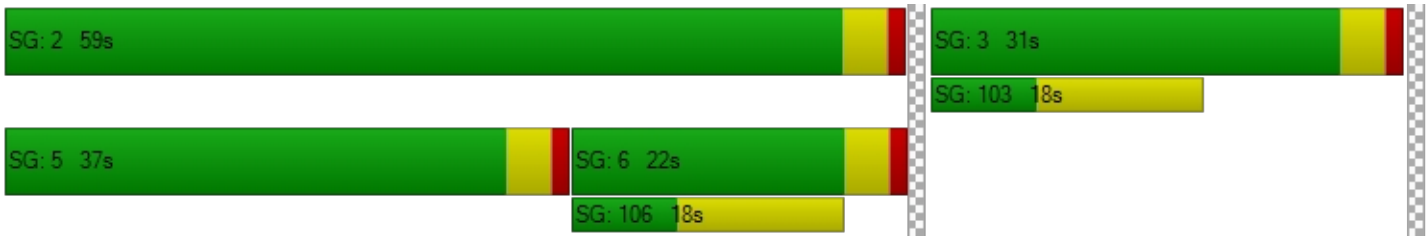
| | | | | | | |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 47.39 | 2.94 | 8.35 | 8.52 | 39.57 | 44.94 |
| Movement LOS | D | A | A | A | D | D |
| d_A, Approach Delay [s/veh] | 9.14 | | 8.38 | | 42.51 | |
| Approach LOS | A | | A | | D | |
| d_I, Intersection Delay [s/veh] | 13.26 | | | | | |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.488 | | | | | |

**Other Modes**

| | | | |
|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 11.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 34.67 | 0.00 | 34.67 |
| l_p,int, Pedestrian LOS Score for Intersection | 2.781 | 0.000 | 2.094 |
| Crosswalk LOS | C | F | B |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 0 | 0 |
| d_b, Bicycle Delay [s] | 45.00 | 45.00 | 45.00 |
| l_b,int, Bicycle LOS Score for Intersection | 4.931 | 4.858 | 4.132 |
| Bicycle LOS | E | E | D |

## Sequence

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 18: I-405 SB Off-Ramp at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 24.4 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.672 |

**Intersection Setup**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | | 30.00 | | | 25.00 | | | 40.00 | | | 40.00 | |
| Grade [%] | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | |
| Curb Present | | | | | No | | | No | | | No | |
| Crosswalk | | Yes | | | Yes | | | Yes | | | No | |

**Volumes**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 638 | 1 | 144 | 0 | 1381 | 17 | 0 | 1222 | 0 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 638 | 1 | 144 | 0 | 1381 | 17 | 0 | 1222 | 0 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 160 | 0 | 36 | 0 | 345 | 4 | 0 | 306 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 638 | 1 | 144 | 0 | 1381 | 17 | 0 | 1222 | 0 |
| Presence of On-Street Parking | | | | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | | 0 | | | 0 | | | 0 | | | 0 | |
| v_di, Inbound Pedestrian Volume crossing m | | 0 | | | 0 | | | 0 | | | 0 | |
| v_co, Outbound Pedestrian Volume crossing | | 0 | | | 0 | | | 0 | | | 0 | |
| v_ci, Inbound Pedestrian Volume crossing mi | | 0 | | | 0 | | | 0 | | | 0 | |
| v_ab, Corner Pedestrian Volume [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing**

| Control Type | Permiss | Permiss | Permiss | Split | Split | Split | Permiss | Permiss | Permiss | Permiss | Permiss | Permiss |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 6 | 0 |
| Maximum Green [s] | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 30 | 0 |
| Amber [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Split [s] | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 72 | 0 | 0 | 72 | 0 |
| Vehicle Extension [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Rest In Walk | | | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | | | | | No | | | No | | | No | |
| Maximum Recall | | | | | No | | | No | | | No | |
| Pedestrian Recall | | | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | | L | C | R | C | C | C |
|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | | 44 | 44 | 44 | 37 | 37 | 37 |
| g / C, Green / Cycle | | 0.49 | 0.49 | 0.49 | 0.42 | 0.42 | 0.42 |
| (v / s)_i Volume / Saturation Flow Rate | | 0.24 | 0.24 | 0.09 | 0.37 | 0.38 | 0.34 |
| s, saturation flow rate [veh/h] | | 1350 | 1350 | 1589 | 1870 | 1862 | 3560 |
| c, Capacity [veh/h] | | 668 | 668 | 786 | 778 | 775 | 1482 |
| d1, Uniform Delay [s] | | 15.04 | 15.03 | 12.62 | 24.46 | 24.53 | 23.32 |
| k, delay calibration | | 0.50 | 0.50 | 0.50 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | | 2.45 | 2.45 | 0.51 | 4.04 | 4.21 | 1.21 |
| d3, Initial Queue Delay [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| X, volume / capacity | | 0.48 | 0.48 | 0.18 | 0.90 | 0.90 | 0.82 |
|---|---|---|---|---|---|---|---|
| d, Delay for Lane Group [s/veh] | | 17.48 | 17.48 | 13.13 | 28.50 | 28.73 | 24.54 |
| Lane Group LOS | | B | B | B | C | C | C |
| Critical Lane Group | | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | | 4.63 | 4.63 | 1.69 | 13.42 | 13.49 | 10.71 |
| 50th-Percentile Queue Length [ft/ln] | | 115.71 | 115.72 | 42.28 | 335.53 | 337.14 | 267.67 |
| 95th-Percentile Queue Length [veh/ln] | | 8.16 | 8.16 | 3.04 | 19.43 | 19.51 | 16.07 |
| 95th-Percentile Queue Length [ft/ln] | | 203.92 | 203.93 | 76.10 | 485.74 | 487.71 | 401.83 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 17.48 | 17.48 | 13.13 | 0.00 | 28.62 | 28.73 | 0.00 | 24.54 | 0.00 |
| Movement LOS | | | | B | B | B | | C | C | | C | |
| d_A, Approach Delay [s/veh] | 0.00 | | | 16.68 | | | 28.62 | | | 24.54 | | |
| Approach LOS | A | | | B | | | C | | | C | | |
| d_I, Intersection Delay [s/veh] | 24.41 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.672 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 34.67 | 34.67 | 34.67 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 1.440 | 2.152 | 3.029 | 0.000 |
| Crosswalk LOS | A | B | C | F |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 311 | 1511 | 1511 |
| d_b, Bicycle Delay [s] | 45.00 | 32.09 | 2.69 | 2.69 |
| l_b,int, Bicycle LOS Score for Intersection | 4.132 | 2.852 | 2.713 | 2.568 |
| Bicycle LOS | D | C | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 20: Temple Avenue at I-405 NB Off-Ramp**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 16.0 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.376 |

**Intersection Setup**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Curb Present | No | | No | | No | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 490 | 0 | 0 | 347 | 365 | 122 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 490 | 0 | 0 | 347 | 365 | 122 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h] | 123 | 0 | 0 | 87 | 91 | 0 |
| Total Analysis Volume [veh/h] | 490 | 0 | 0 | 347 | 365 | 0 |
| Presence of On-Street Parking | No | No | No | No | No | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing | 0 | | 0 | | 0 | |
| v_di, Inbound Pedestrian Volume crossing m | 0 | | 0 | | 0 | |
| v_co, Outbound Pedestrian Volume crossing | 0 | | 0 | | 0 | |
| v_ci, Inbound Pedestrian Volume crossing mi | 0 | | 0 | | 0 | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 2 | 0 | 0 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | - | - | - | - | Lead | - |
| Minimum Green [s] | 6 | 0 | 0 | 6 | 6 | 0 |
| Maximum Green [s] | 30 | 0 | 0 | 30 | 30 | 0 |
| Amber [s] | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 1.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 25 | 0 | 0 | 25 | 65 | 0 |
| Vehicle Extension [s] | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 7 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 4 | 0 | 0 | 0 | 0 | 0 |
| Rest In Walk | No | | | No | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Minimum Recall | No | | | No | No | |
| Maximum Recall | No | | | No | No | |
| Pedestrian Recall | No | | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | C | C | L | R |
|---|---|---|---|---|
| C, Cycle Length [s] | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 61 | 61 | 21 | 21 |
| g / C, Green / Cycle | 0.68 | 0.68 | 0.23 | 0.23 |
| (v / s)_i Volume / Saturation Flow Rate | 0.14 | 0.10 | 0.20 | 0.00 |
| s, saturation flow rate [veh/h] | 3560 | 3560 | 1781 | 1589 |
| c, Capacity [veh/h] | 2426 | 2426 | 409 | 365 |
| d1, Uniform Delay [s] | 5.29 | 5.05 | 33.54 | 0.00 |
| k, delay calibration | 0.50 | 0.50 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.19 | 0.12 | 6.94 | 0.00 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | |
|---|---|---|---|---|
| X, volume / capacity | 0.20 | 0.14 | 0.89 | 0.00 |
| d, Delay for Lane Group [s/veh] | 5.47 | 5.17 | 40.48 | 0.00 |
| Lane Group LOS | A | A | D | A |
| Critical Lane Group | Yes | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 1.38 | 0.93 | 8.40 | 0.00 |
| 50th-Percentile Queue Length [ft/ln] | 34.47 | 23.29 | 209.91 | 0.00 |
| 95th-Percentile Queue Length [veh/ln] | 2.48 | 1.68 | 13.15 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 62.04 | 41.93 | 328.71 | 0.00 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 5.47 | 0.00 | 0.00 | 5.17 | 40.48 | 0.00 |
| Movement LOS | A | | | A | D | A |
| d_A, Approach Delay [s/veh] | 5.47 | | 5.17 | | 40.48 | |
| Approach LOS | A | | A | | D | |
| d_I, Intersection Delay [s/veh] | 16.02 | | | | | |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.376 | | | | | |

**Other Modes**

| | | | |
|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 34.67 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 1.863 |
| Crosswalk LOS | F | F | A |
| s_b, Saturation Flow Rate of the bicycle lane | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 0 | 0 |
| d_b, Bicycle Delay [s] | 45.00 | 45.00 | 45.00 |
| l_b,int, Bicycle LOS Score for Intersection | 4.537 | 4.419 | 4.132 |
| Bicycle LOS | E | E | D |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

*APPENDIX E-IV*

# YEAR 2040 PLUS PROJECT TRAFFIC CONDITIONS

**Intersection Level Of Service Report**
**Intersection 10: I-405 NB Ramps at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 12.0 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.242 |

**Intersection Setup**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 25.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 160 | 11 | 17 | 502 | 4 | 3 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 160 | 11 | 17 | 502 | 4 | 3 |
| Peak Hour Factor | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 | 0.9500 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 42 | 3 | 4 | 132 | 1 | 1 |
| Total Analysis Volume [veh/h] | 168 | 12 | 18 | 528 | 4 | 3 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| Priority Scheme | Stop | Free | Free |
|---|---|---|---|
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| V/C, Movement V/C Ratio | 0.24 | 0.02 | 0.00 | 0.01 | 0.00 | 0.00 |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 11.96 | 11.53 | 0.00 | 0.00 | 8.53 | 0.00 |
| Movement LOS | B | B | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 1.02 | 1.02 | 0.00 | 0.00 | 0.01 | 0.01 |
| 95th-Percentile Queue Length [ft/ln] | 25.61 | 25.61 | 0.00 | 0.00 | 0.29 | 0.29 |
| d_A, Approach Delay [s/veh] | 11.93 | | 0.00 | | 4.88 | |
| Approach LOS | B | | A | | A | |
| d_I, Intersection Delay [s/veh] | 2.98 | | | | | |
| Intersection LOS | B | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Orange Avenue at I-405 SB Ramps**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 19.7 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.645 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Curb Present | No | | No | | No | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 187 | 656 | 570 | 292 | 123 | 311 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 187 | 656 | 570 | 292 | 123 | 311 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 47 | 164 | 143 | 73 | 31 | 78 |
| Total Analysis Volume [veh/h] | 187 | 656 | 570 | 292 | 123 | 311 |
| Presence of On-Street Parking | No | No | No | No | No | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0 | | 0 | | 0 | |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h] | 0 | | 0 | | 0 | |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0 | | 0 | | 0 | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h] | 0 | | 0 | | 0 | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Protected | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 6 | 0 | 3 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | Lead | - |
| Minimum Green [s] | 6 | 6 | 6 | 0 | 6 | 0 |
| Maximum Green [s] | 30 | 30 | 30 | 0 | 30 | 0 |
| Amber [s] | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 1.0 | 1.0 | 1.0 | 0.0 | 1.0 | 0.0 |
| Split [s] | 22 | 44 | 22 | 0 | 46 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 0 | 7 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 11 | 0 | 11 | 0 |
| Rest In Walk | | No | No | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 2.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 2.0 | 2.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | No | | No | |
| Maximum Recall | No | No | No | | No | |
| Pedestrian Recall | No | No | No | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | C | L | R |
|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 11 | 62 | 46 | 46 | 20 | 20 |
| g / C, Green / Cycle | 0.13 | 0.69 | 0.52 | 0.52 | 0.22 | 0.22 |
| (v / s)_i Volume / Saturation Flow Rate | 0.11 | 0.18 | 0.23 | 0.26 | 0.07 | 0.20 |
| s, saturation flow rate [veh/h] | 1781 | 3560 | 1870 | 1670 | 1781 | 1589 |
| c, Capacity [veh/h] | 225 | 2446 | 965 | 862 | 399 | 356 |
| d1, Uniform Delay [s] | 38.38 | 5.41 | 13.70 | 14.21 | 29.11 | 33.69 |
| k, delay calibration | 0.11 | 0.50 | 0.50 | 0.50 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 7.65 | 0.27 | 1.50 | 2.07 | 0.43 | 6.71 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| X, volume / capacity | 0.83 | 0.27 | 0.45 | 0.50 | 0.31 | 0.87 |
| d, Delay for Lane Group [s/veh] | 46.03 | 5.68 | 15.20 | 16.28 | 29.54 | 40.40 |
| Lane Group LOS | D | A | B | B | C | D |
| Critical Lane Group | Yes | No | No | Yes | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 4.35 | 1.90 | 5.30 | 5.58 | 2.26 | 7.14 |
| 50th-Percentile Queue Length [ft/ln] | 108.67 | 47.38 | 132.60 | 139.51 | 56.52 | 178.47 |
| 95th-Percentile Queue Length [veh/ln] | 7.77 | 3.41 | 9.08 | 9.45 | 4.07 | 11.52 |
| 95th-Percentile Queue Length [ft/ln] | 194.16 | 85.28 | 227.02 | 236.36 | 101.73 | 288.02 |

**Movement, Approach, & Intersection Results**

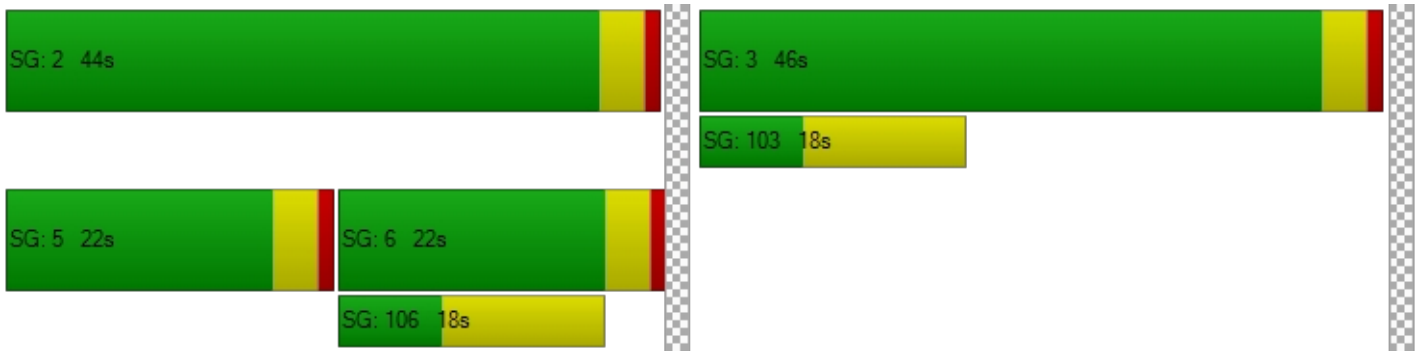
| | | | | | | |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 46.03 | 5.68 | 15.46 | 16.28 | 29.54 | 40.40 |
| Movement LOS | D | A | B | B | C | D |
| d_A, Approach Delay [s/veh] | 14.63 | | 15.74 | | 37.32 | |
| Approach LOS | B | | B | | D | |
| d_I, Intersection Delay [s/veh] | 19.68 | | | | | |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.645 | | | | | |

**Other Modes**

| | | | |
|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 11.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 34.67 | 0.00 | 34.67 |
| l_p,int, Pedestrian LOS Score for Intersection | 2.748 | 0.000 | 2.187 |
| Crosswalk LOS | B | F | B |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 0 | 0 |
| d_b, Bicycle Delay [s] | 45.00 | 45.00 | 45.00 |
| l_b,int, Bicycle LOS Score for Intersection | 4.828 | 4.844 | 4.132 |
| Bicycle LOS | E | E | D |

## Sequence

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 18: I-405 SB Off-Ramp at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 61.0 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | E |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.745 |

**Intersection Setup**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 30.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 753 | 4 | 350 | 0 | 981 | 8 | 0 | 1417 | 0 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 753 | 4 | 350 | 0 | 981 | 8 | 0 | 1417 | 0 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 188 | 1 | 88 | 0 | 245 | 2 | 0 | 354 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 753 | 4 | 350 | 0 | 981 | 8 | 0 | 1417 | 0 |
| Presence of On-Street Parking | | | | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Split | Split | Split | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 6 | 0 |
| Maximum Green [s] | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 30 | 0 |
| Amber [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Split [s] | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 72 | 0 | 0 | 72 | 0 |
| Vehicle Extension [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Rest In Walk | | | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | | | | | No | | | No | | | No | |
| Maximum Recall | | | | | No | | | No | | | No | |
| Pedestrian Recall | | | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | | L | C | R | C | C | C |
|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | | 52 | 52 | 52 | 30 | 30 | 30 |
| g / C, Green / Cycle | | 0.58 | 0.58 | 0.58 | 0.33 | 0.33 | 0.33 |
| (v / s)_i Volume / Saturation Flow Rate | | 0.28 | 0.28 | 0.22 | 0.26 | 0.27 | 0.40 |
| s, saturation flow rate [veh/h] | | 1350 | 1350 | 1589 | 1870 | 1865 | 3560 |
| c, Capacity [veh/h] | | 780 | 780 | 919 | 623 | 621 | 1185 |
| d1, Uniform Delay [s] | | 11.10 | 11.10 | 10.24 | 27.12 | 27.15 | 29.90 |
| k, delay calibration | | 0.50 | 0.50 | 0.50 | 0.11 | 0.11 | 0.15 |
| I, Upstream Filtering Factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | | 2.16 | 2.15 | 1.20 | 2.35 | 2.39 | 90.73 |
| d3, Initial Queue Delay [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| X, volume / capacity | | 0.49 | 0.49 | 0.38 | 0.79 | 0.80 | 1.20 |
| d, Delay for Lane Group [s/veh] | | 13.26 | 13.25 | 11.45 | 29.47 | 29.54 | 120.63 |
| Lane Group LOS | | B | B | B | C | C | F |
| Critical Lane Group | | Yes | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | | 4.61 | 4.61 | 3.84 | 9.35 | 9.36 | 26.75 |
| 50th-Percentile Queue Length [ft/ln] | | 115.2 | 115.2 | 96.04 | 233.75 | 234.11 | 668.85 |
| 95th-Percentile Queue Length [veh/ln] | | 8.13 | 8.13 | 6.91 | 14.36 | 14.38 | 39.31 |
| 95th-Percentile Queue Length [ft/ln] | | 203.2 | 203.2 | 172.8 | 359.12 | 359.58 | 982.66 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 13.25 | 13.25 | 11.45 | 0.00 | 29.51 | 29.54 | 0.00 | 120.6 | 0.00 |
| Movement LOS | | | | B | B | B | | C | C | | F | |
| d_A, Approach Delay [s/veh] | 0.00 | | | 12.68 | | | 29.51 | | | 120.63 | | |
| Approach LOS | A | | | B | | | C | | | F | | |
| d_I, Intersection Delay [s/veh] | 60.96 | | | | | | | | | | | |
| Intersection LOS | E | | | | | | | | | | | |
| Intersection V/C | 0.745 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 34.67 | 34.67 | 34.67 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 1.435 | 2.240 | 3.026 | 0.000 |
| Crosswalk LOS | A | B | C | F |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 311 | 1511 | 1511 |
| d_b, Bicycle Delay [s] | 45.00 | 32.09 | 2.69 | 2.69 |
| l_b,int, Bicycle LOS Score for Intersection | 4.132 | 3.386 | 2.376 | 2.729 |
| Bicycle LOS | D | C | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 20: Temple Avenue at I-405 NB Off-Ramp**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 12.9 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.303 |

**Intersection Setup**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Curb Present | No | | No | | No | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 458 | 0 | 0 | 395 | 262 | 151 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 458 | 0 | 0 | 395 | 262 | 151 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h] | 115 | 0 | 0 | 99 | 66 | 0 |
| Total Analysis Volume [veh/h] | 458 | 0 | 0 | 395 | 262 | 0 |
| Presence of On-Street Parking | No | No | No | No | No | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0 | | 0 | | 0 | |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h] | 0 | | 0 | | 0 | |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0 | | 0 | | 0 | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h] | 0 | | 0 | | 0 | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 2 | 0 | 0 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | - | - | - | - | Lead | - |
| Minimum Green [s] | 6 | 0 | 0 | 6 | 6 | 0 |
| Maximum Green [s] | 30 | 0 | 0 | 30 | 30 | 0 |
| Amber [s] | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 1.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 30 | 0 | 0 | 30 | 60 | 0 |
| Vehicle Extension [s] | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 7 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 4 | 0 | 0 | 0 | 0 | 0 |
| Rest In Walk | No | | | No | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Minimum Recall | No | | | No | No | |
| Maximum Recall | No | | | No | No | |
| Pedestrian Recall | No | | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | C | C | L | R |
|---|---|---|---|---|
| C, Cycle Length [s] | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 67 | 67 | 15 | 15 |
| g / C, Green / Cycle | 0.74 | 0.74 | 0.17 | 0.17 |
| (v / s)_i Volume / Saturation Flow Rate | 0.13 | 0.11 | 0.15 | 0.00 |
| s, saturation flow rate [veh/h] | 3560 | 3560 | 1781 | 1589 |
| c, Capacity [veh/h] | 2634 | 2634 | 305 | 272 |
| d1, Uniform Delay [s] | 3.49 | 3.42 | 36.19 | 0.00 |
| k, delay calibration | 0.50 | 0.50 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.14 | 0.12 | 7.05 | 0.00 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | |
|---|---|---|---|---|
| X, volume / capacity | 0.17 | 0.15 | 0.86 | 0.00 |
| d, Delay for Lane Group [s/veh] | 3.63 | 3.54 | 43.24 | 0.00 |
| Lane Group LOS | A | A | D | A |
| Critical Lane Group | Yes | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 0.88 | 0.75 | 6.14 | 0.00 |
| 50th-Percentile Queue Length [ft/ln] | 22.11 | 18.68 | 153.45 | 0.00 |
| 95th-Percentile Queue Length [veh/ln] | 1.59 | 1.34 | 10.20 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 39.79 | 33.62 | 255.03 | 0.00 |

**Movement, Approach, & Intersection Results**

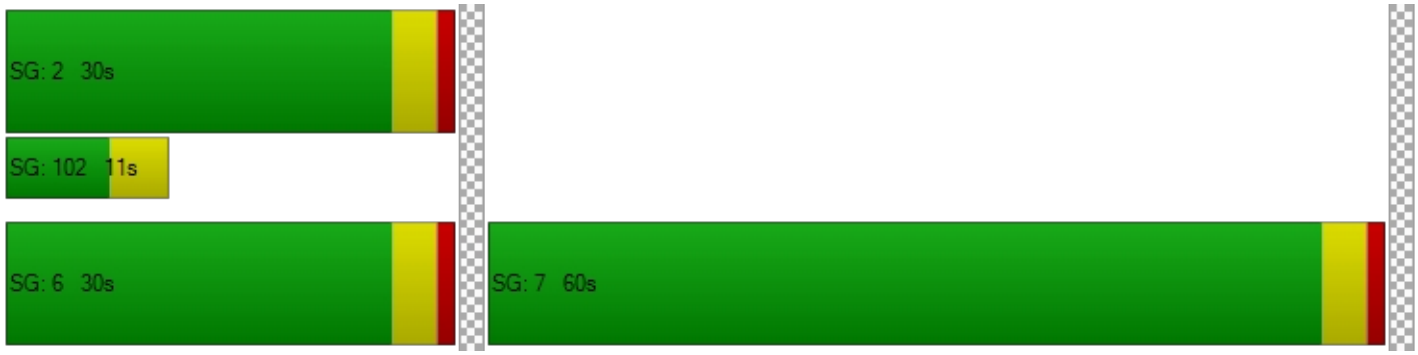
| | | | | | | |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 3.63 | 0.00 | 0.00 | 3.54 | 43.24 | 0.00 |
| Movement LOS | A | | | A | D | A |
| d_A, Approach Delay [s/veh] | 3.63 | | 3.54 | | 43.24 | |
| Approach LOS | A | | A | | D | |
| d_I, Intersection Delay [s/veh] | 12.91 | | | | | |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.303 | | | | | |

**Other Modes**

| | | | |
|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 34.67 |
| l_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 1.821 |
| Crosswalk LOS | F | F | A |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 0 | 0 |
| d_b, Bicycle Delay [s] | 45.00 | 45.00 | 45.00 |
| l_b,int, Bicycle LOS Score for Intersection | 4.510 | 4.458 | 4.132 |
| Bicycle LOS | E | E | D |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 10: I-405 NB Ramps at 32nd Street**

| | | | |
|---|---|---|---|
| Control Type: | Two-way stop | Delay (sec / veh): | 29.9 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | D |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.790 |

**Intersection Setup**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Eastbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Right | Thru | Right | Left | Thru |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 25.00 | | 25.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Crosswalk | No | | No | | No | |

**Volumes**

| Name | I-405 NB Ramps | | 32nd Street | | 32nd Street | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 383 | 2 | 45 | 365 | 19 | 39 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 383 | 2 | 45 | 365 | 19 | 39 |
| Peak Hour Factor | 0.8000 | 0.8000 | 0.8000 | 0.8000 | 0.8000 | 0.8000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 120 | 1 | 14 | 114 | 6 | 12 |
| Total Analysis Volume [veh/h] | 479 | 3 | 56 | 456 | 24 | 49 |
| Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | | | |
|---|---|---|---|
| Priority Scheme | Stop | Free | Free |
| Flared Lane | No | | |
| Storage Area [veh] | 0 | 0 | 0 |
| Two-Stage Gap Acceptance | No | | |
| Number of Storage Spaces in Median | 0 | 0 | 0 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| V/C, Movement V/C Ratio | 0.79 | 0.00 | 0.00 | 0.00 | 0.02 | 0.00 |
| d_M, Delay for Movement [s/veh] | 29.85 | 28.69 | 0.00 | 0.00 | 8.50 | 0.00 |
| Movement LOS | D | D | A | A | A | A |
| 95th-Percentile Queue Length [veh/ln] | 7.72 | 7.72 | 0.00 | 0.00 | 0.06 | 0.06 |
| 95th-Percentile Queue Length [ft/ln] | 193.08 | 193.08 | 0.00 | 0.00 | 1.38 | 1.38 |
| d_A, Approach Delay [s/veh] | 29.85 | | 0.00 | | 2.79 | |
| Approach LOS | D | | A | | A | |
| d_I, Intersection Delay [s/veh] | 13.67 | | | | | |
| Intersection LOS | D | | | | | |

**Intersection Level Of Service Report**
**Intersection 11: Orange Avenue at I-405 SB Ramps**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 14.6 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.530 |

**Intersection Setup**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Eastbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Left | Thru | Thru | Right | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Curb Present | No | | No | | No | |
| Crosswalk | Yes | | No | | Yes | |

**Volumes**

| Name | Orange Avenue | | Orange Avenue | | I-405 SB Ramps | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 154 | 925 | 788 | 150 | 136 | 178 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 154 | 925 | 788 | 150 | 136 | 178 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Total 15-Minute Volume [veh/h] | 39 | 231 | 197 | 38 | 34 | 45 |
| Total Analysis Volume [veh/h] | 154 | 925 | 788 | 150 | 136 | 178 |
| Presence of On-Street Parking | No | No | No | No | No | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0 | | 0 | | 0 | |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h] | 0 | | 0 | | 0 | |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0 | | 0 | | 0 | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h] | 0 | | 0 | | 0 | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 95 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 12.00 |

**Phasing & Timing**

| Control Type | Protected | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 5 | 2 | 6 | 0 | 3 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | Lead | - | - | - | Lead | - |
| Minimum Green [s] | 6 | 6 | 6 | 0 | 6 | 0 |
| Maximum Green [s] | 30 | 30 | 30 | 0 | 30 | 0 |
| Amber [s] | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 1.0 | 1.0 | 1.0 | 0.0 | 1.0 | 0.0 |
| Split [s] | 34 | 56 | 22 | 0 | 39 | 0 |
| Vehicle Extension [s] | 3.0 | 3.0 | 3.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 0 | 7 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 11 | 0 | 11 | 0 |
| Rest In Walk | | No | No | | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 2.0 | 2.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 2.0 | 2.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | No | No | No | | No | |
| Maximum Recall | No | No | No | | No | |
| Pedestrian Recall | No | No | No | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | L | C | C | C | L | R |
|---|---|---|---|---|---|---|
| C, Cycle Length [s] | 95 | 95 | 95 | 95 | 95 | 95 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 10 | 74 | 60 | 60 | 13 | 13 |
| g / C, Green / Cycle | 0.11 | 0.78 | 0.63 | 0.63 | 0.14 | 0.14 |
| (v / s)_i Volume / Saturation Flow Rate | 0.09 | 0.26 | 0.25 | 0.26 | 0.08 | 0.11 |
| s, saturation flow rate [veh/h] | 1781 | 3560 | 1870 | 1770 | 1781 | 1589 |
| c, Capacity [veh/h] | 191 | 2769 | 1175 | 1112 | 246 | 220 |
| d1, Uniform Delay [s] | 41.45 | 3.17 | 8.77 | 8.94 | 38.21 | 39.74 |
| k, delay calibration | 0.11 | 0.50 | 0.50 | 0.50 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 7.76 | 0.33 | 1.01 | 1.18 | 1.93 | 6.99 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| X, volume / capacity | 0.81 | 0.33 | 0.40 | 0.42 | 0.55 | 0.81 |
| d, Delay for Lane Group [s/veh] | 49.21 | 3.50 | 9.78 | 10.11 | 40.14 | 46.73 |
| Lane Group LOS | D | A | A | B | D | D |
| Critical Lane Group | Yes | No | No | Yes | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | 3.82 | 1.70 | 4.38 | 4.49 | 3.09 | 4.45 |
| 50th-Percentile Queue Length [ft/ln] | 95.55 | 42.61 | 109.43 | 112.18 | 77.26 | 111.35 |
| 95th-Percentile Queue Length [veh/ln] | 6.88 | 3.07 | 7.81 | 7.96 | 5.56 | 7.91 |
| 95th-Percentile Queue Length [ft/ln] | 172.00 | 76.69 | 195.21 | 199.03 | 139.07 | 197.87 |

**Movement, Approach, & Intersection Results**

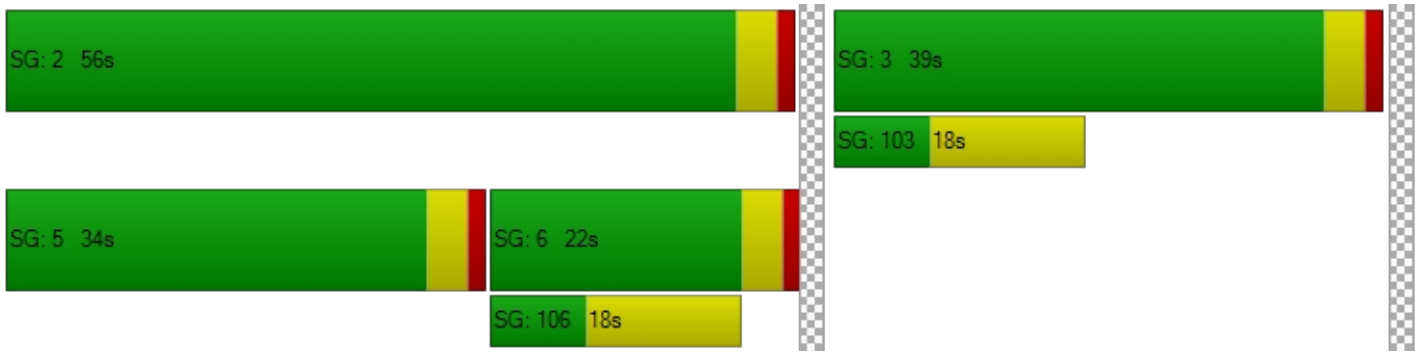
| | | | | | | |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 49.21 | 3.50 | 9.91 | 10.11 | 40.14 | 46.73 |
| Movement LOS | D | A | A | B | D | D |
| d_A, Approach Delay [s/veh] | 10.02 | | 9.95 | | 43.87 | |
| Approach LOS | B | | A | | D | |
| d_I, Intersection Delay [s/veh] | 14.55 | | | | | |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.530 | | | | | |

**Other Modes**

| | | | |
|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 11.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 37.14 | 0.00 | 37.14 |
| l_p,int, Pedestrian LOS Score for Intersection | 2.834 | 0.000 | 2.110 |
| Crosswalk LOS | C | F | B |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 0 | 0 |
| d_b, Bicycle Delay [s] | 47.50 | 47.50 | 47.50 |
| l_b,int, Bicycle LOS Score for Intersection | 5.023 | 4.906 | 4.132 |
| Bicycle LOS | F | E | D |

## Sequence

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 2 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 5 | 6 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 18: I-405 SB Off-Ramp at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 23.9 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.716 |

**Intersection Setup**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | | 30.00 | | | 25.00 | | | 40.00 | | | 40.00 | |
| Grade [%] | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | |
| Curb Present | | | | | No | | | No | | | No | |
| Crosswalk | | Yes | | | Yes | | | Yes | | | No | |

**Volumes**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 653 | 1 | 183 | 0 | 1510 | 17 | 0 | 1305 | 0 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 653 | 1 | 183 | 0 | 1510 | 17 | 0 | 1305 | 0 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 163 | 0 | 46 | 0 | 378 | 4 | 0 | 326 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 653 | 1 | 183 | 0 | 1510 | 17 | 0 | 1305 | 0 |
| Presence of On-Street Parking | | | | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| v_ab, Corner Pedestrian Volume [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Split | Split | Split | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 6 | 0 |
| Maximum Green [s] | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 30 | 0 |
| Amber [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Split [s] | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 72 | 0 | 0 | 72 | 0 |
| Vehicle Extension [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Rest In Walk | | | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | | | | | No | | | No | | | No | |
| Maximum Recall | | | | | No | | | No | | | No | |
| Pedestrian Recall | | | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | | L | C | R | C | C | C |
|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | | 41 | 41 | 41 | 41 | 41 | 41 |
| g / C, Green / Cycle | | 0.46 | 0.46 | 0.46 | 0.45 | 0.45 | 0.45 |
| (v / s)_i Volume / Saturation Flow Rate | | 0.24 | 0.24 | 0.12 | 0.41 | 0.41 | 0.37 |
| s, saturation flow rate [veh/h] | | 1350 | 1350 | 1589 | 1870 | 1863 | 3560 |
| c, Capacity [veh/h] | | 619 | 619 | 729 | 846 | 843 | 1611 |
| d1, Uniform Delay [s] | | 17.39 | 17.39 | 14.89 | 22.78 | 22.85 | 21.28 |
| k, delay calibration | | 0.50 | 0.50 | 0.50 | 0.13 | 0.13 | 0.12 |
| I, Upstream Filtering Factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | | 3.21 | 3.21 | 0.83 | 4.54 | 4.77 | 1.13 |
| d3, Initial Queue Delay [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| X, volume / capacity | | 0.53 | 0.53 | 0.25 | 0.90 | 0.91 | 0.81 |
| d, Delay for Lane Group [s/veh] | | 20.60 | 20.59 | 15.72 | 27.32 | 27.61 | 22.41 |
| Lane Group LOS | | C | C | B | C | C | C |
| Critical Lane Group | | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | | 5.24 | 5.24 | 2.42 | 14.41 | 14.49 | 10.90 |
| 50th-Percentile Queue Length [ft/ln] | | 131.1 | 131.1 | 60.41 | 360.18 | 362.32 | 272.53 |
| 95th-Percentile Queue Length [veh/ln] | | 9.00 | 9.00 | 4.35 | 20.63 | 20.74 | 16.32 |
| 95th-Percentile Queue Length [ft/ln] | | 225.0 | 225.0 | 108.7 | 515.80 | 518.40 | 407.90 |

**Movement, Approach, & Intersection Results**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 20.60 | 20.59 | 15.72 | 0.00 | 27.47 | 27.61 | 0.00 | 22.41 | 0.00 |
| Movement LOS | | | | C | C | B | | C | C | | C | |
| d_A, Approach Delay [s/veh] | 0.00 | | | 19.53 | | | 27.47 | | | 22.41 | | |
| Approach LOS | A | | | B | | | C | | | C | | |
| d_I, Intersection Delay [s/veh] | 23.86 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.716 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 34.67 | 34.67 | 34.67 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 1.440 | 2.166 | 3.110 | 0.000 |
| Crosswalk LOS | A | B | C | F |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 311 | 1511 | 1511 |
| d_b, Bicycle Delay [s] | 45.00 | 32.09 | 2.69 | 2.69 |
| l_b,int, Bicycle LOS Score for Intersection | 4.132 | 2.941 | 2.819 | 2.636 |
| Bicycle LOS | D | C | C | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

**Intersection Level Of Service Report**
**Intersection 20: Temple Avenue at I-405 NB Off-Ramp**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 15.3 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | B |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.386 |

**Intersection Setup**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Approach | Northbound | | Southbound | | Westbound | |
| Lane Configuration | | | | | | |
| Turning Movement | Thru | Right | Left | Thru | Left | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| Speed [mph] | 40.00 | | 40.00 | | 25.00 | |
| Grade [%] | 0.00 | | 0.00 | | 0.00 | |
| Curb Present | No | | No | | No | |
| Crosswalk | No | | No | | Yes | |

**Volumes**

| Name | Temple Avenue | | Temple Avenue | | I-405 NB Off-Ramp | |
|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 522 | 0 | 0 | 406 | 365 | 136 |
| Base Volume Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 522 | 0 | 0 | 406 | 365 | 136 |
| Peak Hour Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 |
| Other Adjustment Factor | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 1.0000 | 0.0000 |
| Total 15-Minute Volume [veh/h] | 131 | 0 | 0 | 102 | 91 | 0 |
| Total Analysis Volume [veh/h] | 522 | 0 | 0 | 406 | 365 | 0 |
| Presence of On-Street Parking | No | No | No | No | No | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0 | | 0 | | 0 | |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h] | 0 | | 0 | | 0 | |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0 | | 0 | | 0 | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h] | 0 | | 0 | | 0 | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | 0 | | 0 | |
| Bicycle Volume [bicycles/h] | 0 | | 0 | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing**

| Control Type | Permissive | Permissive | Permissive | Permissive | Split | Split |
|---|---|---|---|---|---|---|
| Signal group | 2 | 0 | 0 | 6 | 7 | 0 |
| Auxiliary Signal Groups | | | | | | |
| Lead / Lag | - | - | - | - | Lead | - |
| Minimum Green [s] | 6 | 0 | 0 | 6 | 6 | 0 |
| Maximum Green [s] | 30 | 0 | 0 | 30 | 30 | 0 |
| Amber [s] | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| All red [s] | 1.0 | 0.0 | 0.0 | 1.0 | 1.0 | 0.0 |
| Split [s] | 25 | 0 | 0 | 25 | 65 | 0 |
| Vehicle Extension [s] | 3.0 | 0.0 | 0.0 | 3.0 | 3.0 | 0.0 |
| Walk [s] | 7 | 0 | 0 | 0 | 0 | 0 |
| Pedestrian Clearance [s] | 4 | 0 | 0 | 0 | 0 | 0 |
| Rest In Walk | No | | | No | No | |
| I1, Start-Up Lost Time [s] | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 2.0 | 0.0 | 0.0 | 2.0 | 2.0 | 0.0 |
| Minimum Recall | No | | | No | No | |
| Maximum Recall | No | | | No | No | |
| Pedestrian Recall | No | | | No | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | C | C | L | R |
|---|---|---|---|---|
| C, Cycle Length [s] | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | 61 | 61 | 21 | 21 |
| g / C, Green / Cycle | 0.68 | 0.68 | 0.23 | 0.23 |
| (v / s)_i Volume / Saturation Flow Rate | 0.15 | 0.11 | 0.20 | 0.00 |
| s, saturation flow rate [veh/h] | 3560 | 3560 | 1781 | 1589 |
| c, Capacity [veh/h] | 2426 | 2426 | 409 | 365 |
| d1, Uniform Delay [s] | 5.34 | 5.14 | 33.54 | 0.00 |
| k, delay calibration | 0.50 | 0.50 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | 0.20 | 0.15 | 6.94 | 0.00 |
| d3, Initial Queue Delay [s] | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | |
|---|---|---|---|---|
| X, volume / capacity | 0.22 | 0.17 | 0.89 | 0.00 |
| d, Delay for Lane Group [s/veh] | 5.54 | 5.29 | 40.48 | 0.00 |
| Lane Group LOS | A | A | D | A |
| Critical Lane Group | Yes | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | 1.48 | 1.11 | 8.40 | 0.00 |
| 50th-Percentile Queue Length [ft/ln] | 37.11 | 27.78 | 209.91 | 0.00 |
| 95th-Percentile Queue Length [veh/ln] | 2.67 | 2.00 | 13.15 | 0.00 |
| 95th-Percentile Queue Length [ft/ln] | 66.81 | 50.00 | 328.71 | 0.00 |

**Movement, Approach, & Intersection Results**

| | | | | | | |
|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 5.54 | 0.00 | 0.00 | 5.29 | 40.48 | 0.00 |
| Movement LOS | A | | | A | D | A |
| d_A, Approach Delay [s/veh] | 5.54 | | 5.29 | | 40.48 | |
| Approach LOS | A | | A | | D | |
| d_I, Intersection Delay [s/veh] | 15.33 | | | | | |
| Intersection LOS | B | | | | | |
| Intersection V/C | 0.386 | | | | | |

**Other Modes**

| | | | |
|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 0.0 | 0.0 | 11.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 0.00 | 0.00 | 34.67 |
| I_p,int, Pedestrian LOS Score for Intersection | 0.000 | 0.000 | 1.863 |
| Crosswalk LOS | F | F | A |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 0 | 0 |
| d_b, Bicycle Delay [s] | 45.00 | 45.00 | 45.00 |
| I_b,int, Bicycle LOS Score for Intersection | 4.563 | 4.467 | 4.132 |
| Bicycle LOS | E | E | D |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 7 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

*APPENDIX E-V*

# YEAR 2040 PLUS PROJECT WITH MITIGATION TRAFFIC CONDITIONS

**Intersection Level Of Service Report**
**Intersection 18: I-405 SB Off-Ramp at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 25.4 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.613 |

**Intersection Setup**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | 30.00 | | | 25.00 | | | 40.00 | | | 40.00 | | |
| Grade [%] | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | | |
| Curb Present | | | | No | | | No | | | No | | |
| Crosswalk | Yes | | | Yes | | | Yes | | | No | | |

**Volumes**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 753 | 4 | 350 | 0 | 981 | 8 | 0 | 1417 | 0 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 753 | 4 | 350 | 0 | 981 | 8 | 0 | 1417 | 0 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 188 | 1 | 88 | 0 | 245 | 2 | 0 | 354 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 753 | 4 | 350 | 0 | 981 | 8 | 0 | 1417 | 0 |
| Presence of On-Street Parking | | | | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| v_ab, Corner Pedestrian Volume [ped/h] | 0 | | | 0 | | | 0 | | | 0 | | |
| Bicycle Volume [bicycles/h] | 0 | | | 0 | | | 0 | | | 0 | | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Split | Split | Split | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 6 | 0 |
| Maximum Green [s] | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 30 | 0 |
| Amber [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Split [s] | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 68 | 0 | 0 | 68 | 0 |
| Vehicle Extension [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Rest In Walk | | | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | | | | | No | | | No | | | No | |
| Maximum Recall | | | | | No | | | No | | | No | |
| Pedestrian Recall | | | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | | L | C | R | C | C | C |
|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | | 54 | 54 | 54 | 28 | 28 | 28 |
| g / C, Green / Cycle | | 0.60 | 0.60 | 0.60 | 0.31 | 0.31 | 0.31 |
| (v / s)_i Volume / Saturation Flow Rate | | 0.28 | 0.28 | 0.22 | 0.26 | 0.27 | 0.28 |
| s, saturation flow rate [veh/h] | | 1350 | 1350 | 1589 | 1870 | 1865 | 5094 |
| c, Capacity [veh/h] | | 808 | 808 | 951 | 584 | 583 | 1592 |
| d1, Uniform Delay [s] | | 10.07 | 10.07 | 9.29 | 28.86 | 28.89 | 29.40 |
| k, delay calibration | | 0.50 | 0.50 | 0.50 | 0.11 | 0.11 | 0.11 |
| I, Upstream Filtering Factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | | 1.95 | 1.95 | 1.10 | 3.48 | 3.55 | 1.90 |
| d3, Initial Queue Delay [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| X, volume / capacity | | 0.47 | 0.47 | 0.37 | 0.85 | 0.85 | 0.89 |
| d, Delay for Lane Group [s/veh] | | 12.02 | 12.01 | 10.39 | 32.34 | 32.44 | 31.31 |
| Lane Group LOS | | B | B | B | C | C | C |
| Critical Lane Group | | Yes | No | No | No | No | Yes |
| 50th-Percentile Queue Length [veh/ln] | | 4.32 | 4.32 | 3.60 | 9.86 | 9.88 | 9.32 |
| 50th-Percentile Queue Length [ft/ln] | | 108.0 | 107.9 | 90.09 | 246.40 | 246.88 | 233.09 |
| 95th-Percentile Queue Length [veh/ln] | | 7.73 | 7.73 | 6.49 | 15.00 | 15.03 | 14.33 |
| 95th-Percentile Queue Length [ft/ln] | | 193.2 | 193.2 | 162.1 | 375.11 | 375.72 | 358.28 |

**Movement, Approach, & Intersection Results**

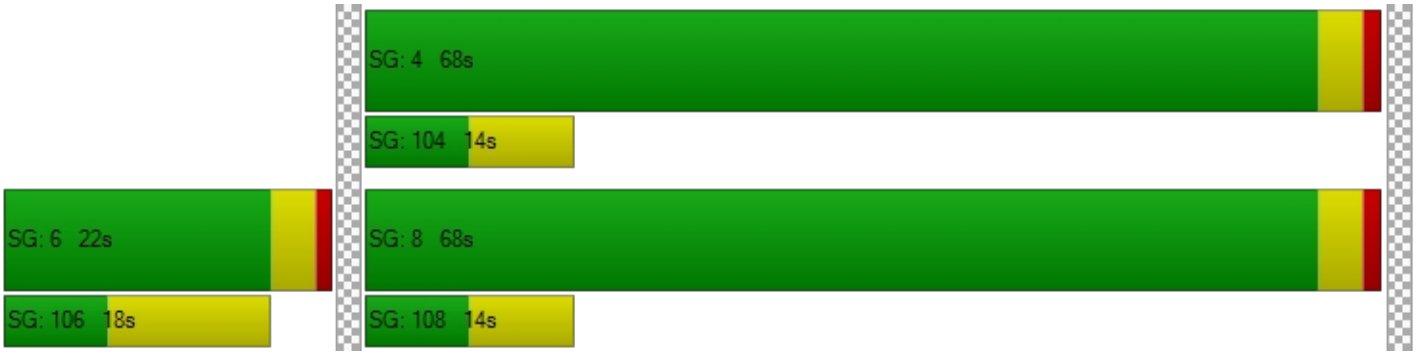
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 12.02 | 12.01 | 10.39 | 0.00 | 32.39 | 32.44 | 0.00 | 31.31 | 0.00 |
| Movement LOS | | | | B | B | B | | C | C | | C | |
| d_A, Approach Delay [s/veh] | 0.00 | | | 11.50 | | | 32.39 | | | 31.31 | | |
| Approach LOS | A | | | B | | | C | | | C | | |
| d_I, Intersection Delay [s/veh] | 25.37 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.613 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 34.67 | 34.67 | 34.67 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 1.435 | 2.240 | 3.016 | 0.000 |
| Crosswalk LOS | A | B | C | F |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 400 | 1422 | 1422 |
| d_b, Bicycle Delay [s] | 45.00 | 28.80 | 3.76 | 3.76 |
| l_b,int, Bicycle LOS Score for Intersection | 4.132 | 3.386 | 2.376 | 2.339 |
| Bicycle LOS | D | C | B | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



**Intersection Level Of Service Report**
**Intersection 18: I-405 SB Off-Ramp at Spring Street**

| | | | |
|---|---|---|---|
| Control Type: | Signalized | Delay (sec / veh): | 22.8 |
| Analysis Method: | HCM 6th Edition | Level Of Service: | C |
| Analysis Period: | 15 minutes | Volume to Capacity (v/c): | 0.716 |

**Intersection Setup**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach | Northbound | | | Southbound | | | Eastbound | | | Westbound | | |
| Lane Configuration | | | | | | | | | | | | |
| Turning Movement | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right |
| Lane Width [ft] | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 | 12.00 |
| No. of Lanes in Pocket | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pocket Length [ft] | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Speed [mph] | | 30.00 | | | 25.00 | | | 40.00 | | | 40.00 | |
| Grade [%] | | 0.00 | | | 0.00 | | | 0.00 | | | 0.00 | |
| Curb Present | | | | | No | | | No | | | No | |
| Crosswalk | | Yes | | | Yes | | | Yes | | | No | |

**Volumes**

| Name | | | | I-405 SB Off-Ramp | | | Spring Street | | | Spring Street | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Base Volume Input [veh/h] | 0 | 0 | 0 | 653 | 1 | 183 | 0 | 1510 | 17 | 0 | 1305 | 0 |
| Base Volume Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Heavy Vehicles Percentage [%] | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| Growth Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| In-Process Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Site-Generated Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diverted Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Pass-by Trips [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Existing Site Adjustment Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Other Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Right-Turn on Red Volume [veh/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Hourly Volume [veh/h] | 0 | 0 | 0 | 653 | 1 | 183 | 0 | 1510 | 17 | 0 | 1305 | 0 |
| Peak Hour Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Other Adjustment Factor | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| Total 15-Minute Volume [veh/h] | 0 | 0 | 0 | 163 | 0 | 46 | 0 | 378 | 4 | 0 | 326 | 0 |
| Total Analysis Volume [veh/h] | 0 | 0 | 0 | 653 | 1 | 183 | 0 | 1510 | 17 | 0 | 1305 | 0 |
| Presence of On-Street Parking | | | | No | | No | No | | No | No | | No |
| On-Street Parking Maneuver Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Local Bus Stopping Rate [/h] | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| v_do, Outbound Pedestrian Volume crossing major street [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| v_di, Inbound Pedestrian Volume crossing major street [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| v_co, Outbound Pedestrian Volume crossing minor street [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| v_ci, Inbound Pedestrian Volume crossing minor street [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| v_ab, Corner Pedestrian Volume [ped/h] | | 0 | | | 0 | | | 0 | | | 0 | |
| Bicycle Volume [bicycles/h] | | 0 | | | 0 | | | 0 | | | 0 | |

**Intersection Settings**

| | |
|---|---|
| Located in CBD | No |
| Signal Coordination Group | - |
| Cycle Length [s] | 90 |
| Coordination Type | Time of Day Pattern Coordinated |
| Actuation Type | Fully actuated |
| Offset [s] | 0.0 |
| Offset Reference | LeadGreen |
| Permissive Mode | SingleBand |
| Lost time [s] | 8.00 |

**Phasing & Timing**

| Control Type | Permi | Permi | Permi | Split | Split | Split | Permi | Permi | Permi | Permi | Permi | Permi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Signal group | 0 | 0 | 2 | 0 | 6 | 0 | 0 | 8 | 0 | 0 | 4 | 0 |
| Auxiliary Signal Groups | | | | | | | | | | | | |
| Lead / Lag | - | - | - | - | - | - | - | - | - | - | - | - |
| Minimum Green [s] | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 | 0 | 0 | 6 | 0 |
| Maximum Green [s] | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 30 | 0 | 0 | 30 | 0 |
| Amber [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| All red [s] | 0.0 | 0.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 | 0.0 | 1.0 | 0.0 |
| Split [s] | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 68 | 0 | 0 | 68 | 0 |
| Vehicle Extension [s] | 0.0 | 0.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 | 0.0 | 3.0 | 0.0 |
| Walk [s] | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Pedestrian Clearance [s] | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 7 | 0 | 0 | 7 | 0 |
| Rest In Walk | | | | | No | | | No | | | No | |
| I1, Start-Up Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| I2, Clearance Lost Time [s] | 0.0 | 0.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 | 0.0 | 2.0 | 0.0 |
| Minimum Recall | | | | | No | | | No | | | No | |
| Maximum Recall | | | | | No | | | No | | | No | |
| Pedestrian Recall | | | | | No | | | No | | | No | |
| Detector Location [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Detector Length [ft] | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| I, Upstream Filtering Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Exclusive Pedestrian Phase**

| | |
|---|---|
| Pedestrian Signal Group | 0 |
| Pedestrian Walk [s] | 0 |
| Pedestrian Clearance [s] | 0 |

**Lane Group Calculations**

| Lane Group | | L | C | R | C | C | C |
|---|---|---|---|---|---|---|---|
| C, Cycle Length [s] | | 90 | 90 | 90 | 90 | 90 | 90 |
| L, Total Lost Time per Cycle [s] | | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| l1_p, Permitted Start-Up Lost Time [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| l2, Clearance Lost Time [s] | | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| g_i, Effective Green Time [s] | | 41 | 41 | 41 | 41 | 41 | 41 |
| g / C, Green / Cycle | | 0.46 | 0.46 | 0.46 | 0.45 | 0.45 | 0.45 |
| (v / s)_i Volume / Saturation Flow Rate | | 0.24 | 0.24 | 0.12 | 0.41 | 0.41 | 0.26 |
| s, saturation flow rate [veh/h] | | 1350 | 1350 | 1589 | 1870 | 1863 | 5094 |
| c, Capacity [veh/h] | | 620 | 620 | 730 | 844 | 841 | 2300 |
| d1, Uniform Delay [s] | | 17.32 | 17.32 | 14.83 | 22.84 | 22.90 | 18.17 |
| k, delay calibration | | 0.50 | 0.50 | 0.50 | 0.15 | 0.15 | 0.11 |
| I, Upstream Filtering Factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| d2, Incremental Delay [s] | | 3.19 | 3.19 | 0.82 | 5.43 | 5.69 | 0.22 |
| d3, Initial Queue Delay [s] | | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Rp, platoon ratio | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| PF, progression factor | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

**Lane Group Results**

| X, volume / capacity | | 0.53 | 0.53 | 0.25 | 0.90 | 0.91 | 0.57 |
|---|---|---|---|---|---|---|---|
| d, Delay for Lane Group [s/veh] | | 20.51 | 20.51 | 15.65 | 28.26 | 28.59 | 18.39 |
| Lane Group LOS | | C | C | B | C | C | B |
| Critical Lane Group | | Yes | No | No | No | Yes | No |
| 50th-Percentile Queue Length [veh/ln] | | 5.23 | 5.23 | 2.41 | 14.62 | 14.72 | 6.10 |
| 50th-Percentile Queue Length [ft/ln] | | 130.8 | 130.8 | 60.30 | 365.57 | 367.88 | 152.45 |
| 95th-Percentile Queue Length [veh/ln] | | 8.99 | 8.99 | 4.34 | 20.89 | 21.01 | 10.15 |
| 95th-Percentile Queue Length [ft/ln] | | 224.6 | 224.6 | 108.5 | 522.36 | 525.16 | 253.70 |

**Movement, Approach, & Intersection Results**

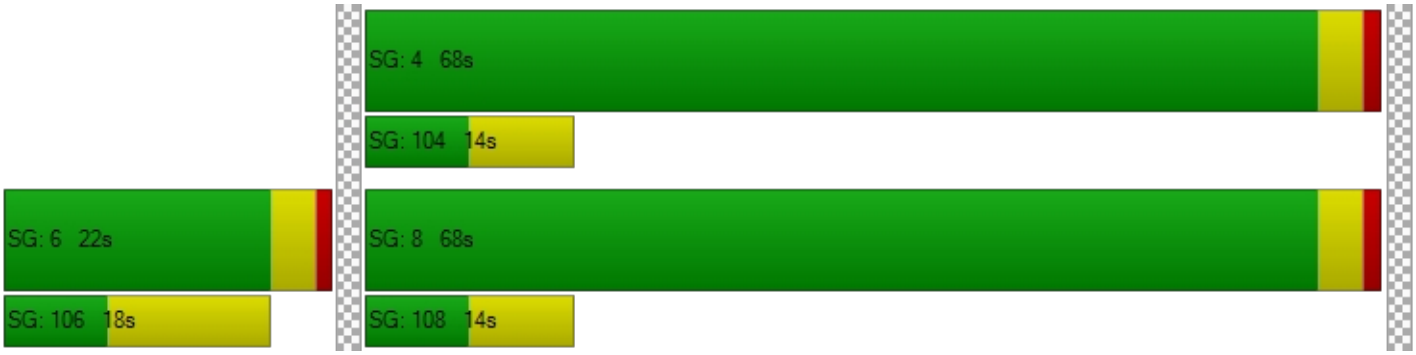
| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| d_M, Delay for Movement [s/veh] | 0.00 | 0.00 | 0.00 | 20.51 | 20.51 | 15.65 | 0.00 | 28.42 | 28.59 | 0.00 | 18.39 | 0.00 |
| Movement LOS | | | | C | C | B | | C | C | | B | |
| d_A, Approach Delay [s/veh] | 0.00 | | | 19.45 | | | 28.42 | | | 18.39 | | |
| Approach LOS | A | | | B | | | C | | | B | | |
| d_I, Intersection Delay [s/veh] | 22.81 | | | | | | | | | | | |
| Intersection LOS | C | | | | | | | | | | | |
| Intersection V/C | 0.716 | | | | | | | | | | | |

**Other Modes**

| | | | | |
|---|---|---|---|---|
| g_Walk,mi, Effective Walk Time [s] | 11.0 | 11.0 | 11.0 | 0.0 |
| M_corner, Corner Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| M_CW, Crosswalk Circulation Area [ft²/ped] | 0.00 | 0.00 | 0.00 | 0.00 |
| d_p, Pedestrian Delay [s] | 34.67 | 34.67 | 34.67 | 0.00 |
| l_p,int, Pedestrian LOS Score for Intersection | 1.440 | 2.166 | 3.083 | 0.000 |
| Crosswalk LOS | A | B | C | F |
| s_b, Saturation Flow Rate of the bicycle lane [bicycles/h] | 2000 | 2000 | 2000 | 2000 |
| c_b, Capacity of the bicycle lane [bicycles/h] | 0 | 400 | 1422 | 1422 |
| d_b, Bicycle Delay [s] | 45.00 | 28.80 | 3.76 | 3.76 |
| l_b,int, Bicycle LOS Score for Intersection | 4.132 | 2.941 | 2.819 | 2.277 |
| Bicycle LOS | D | C | C | B |

## Sequence

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ring 1 | - | 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 2 | 6 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Ring 4 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |



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# MEMORANDUM

**DATE:** June 30, 2020

**TO:** Trissa De Jesus Allen, P.E.

**FROM:** Ambarish Mukherjee, P.E., AICP

**SUBJECT:** Globemaster Corridor Specific Plan Vehicle Miles Traveled Analysis

Linscott, Law & Greenspan, Engineers (LLG) is currently preparing a traffic impact analysis (TIA) for the proposed Globemaster Corridor Specific Plan (GCSP) project in the City of Long Beach (City), evaluating the traffic impacts of the proposed project. The GCSP provides the planning and regulatory framework for guiding future development and attracting quality jobs to the approximately 432.12-acre GCSP area located in an area adjacent to the Long Beach Airport, I-405 Freeway and surrounding residential and business community. As part of the TIA, LSA has prepared this VMT analysis for the project.

## BACKGROUND

On December 28, 2018, the California Office of Administrative Law cleared the revised California Environmental Quality Act (CEQA) guidelines for use. Among the changes to the guidelines were removal of vehicle delay and level of service from consideration under CEQA. With the adopted guidelines, transportation impacts are to be evaluated based on a project's effect on VMT. Lead agencies are allowed to opt-in to the revised transportation guidelines, but the new guidelines must be used starting July 1, 2020.

The City is currently in the process to establish thresholds related to vehicle miles of travel. As such, the draft *CEQA Transportation Thresholds of Significance Guide- City of Long Beach,* dated May 2020 (draft guidelines) was used to determine the project VMT impacts. Additionally, the state law also provides guidance to evaluate the project's impacts related to VMT.

California Public Resources Code Section 15064.3(b)(4) states (in part) that:

> *A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household, or in any other measure.*

## METHODOLOGY

The City's draft guidelines include methodologies to analyze VMT impacts for land use plans. Since the project is a specific plan, methodologies described in *Chapter 6: Significance Thresholds for Land Use Plans* were used for this analysis.

The draft guidelines recommend the following methodology:

*"..Therefore, the recommended methodology for conducting VMT assessments for most land plans is to compare the existing VMT per household for the land plan area with the expected horizon year VMT per household. The recommended target is to achieve a lower VMT per household in the horizon year with the proposed land plan than occurs for the existing condition. If a land plan is composed of primarily employment uses (i.e., the land plan is for an employment center or has a focus on nonresidential uses), then VMT per employee would be an appropriate metric and the target is to achieve a lower VMT per employee in the horizon year with the proposed land plan than occurs for the existing condition."*

Since the project includes only non-residential land uses, based on the draft guidelines VMT per employee metric was analyzed. VMT per employee for the project was compared with the corresponding average for the region. The draft guidelines identify the entire Los Angeles County as the region. Additionally, based on the draft guidelines, the horizon year project average was compared with the existing regional average.

LSA has recently prepared an update to the City's General Plan Circulation Element. As part of the update, LSA updated the horizon year (2040) scenario in the 2016 Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Travel Demand Model to include the City's General Plan land use information. Based on discussion with City staff, this updated version of the model has been utilized for preparation of the VMT analysis.

### Regional VMT per Employee Estimate

The first step in preparation of this analysis was to calculate the existing regional VMT that will be compared with horizon year (2040) project VMT to determine project impact. The existing regional VMT per employee estimate was obtained from the draft guidelines.

### Project Traffic Analysis Zone Update and Model Run

The SCAG RTP/SCS model uses a two tier TAZ system – Tier 1 zones and Tier 2 zones. Two or more Tier 2 zones make up a Tier 1 zone. The model utilizes Tier 2 zone system for modeling steps such as trip generation, trip distribution, and mode choice while it uses Tier 1 zone system for assignment purposes.

The specific plan area is contained inside three Tier 1 zones and ten Tier 2 zones. Given the inability/complexity of performing zone splits in the SCAG RTP/SCS model, LSA used the existing zone system and modified the socioeconomic data of those Tier 1 and Tier 2 zones to isolate the project from all other uses into both Tier 1 zones and their corresponding Tier 2 zones.

LSA converted the project land uses into model socioeconomic categories. The socioeconomic data for both Tier 1 and Tier 2 zones in the 2040 model scenario was updated with project information. Upon completion of the socioeconomic data update, LSA conducted the model run for the 2040 scenario and estimated project VMT.

## VMT ANALYSIS

VMT is simply the product of trips and their trip lengths. This calculation can be conducted using output traffic volumes from the model and length of roadway links. However based on OPR guidance VMT should be estimated based on trip purpose depending on the type of land use being evaluated. The travel model doesn't retain trip purposes after the final step (traffic assignment) of the model that produces traffic volumes. In order to estimate VMT by trip purpose, outputs from mode choice step were used as trips and the trip lengths were derived from the skimming step.

Also as mentioned above, traffic assignment in the SCAG model is conducted at Tier1 zone system whereas mode choice outputs are available at a more disaggregate Tier2 zone system. Mode choice outputs include person trips by trip purpose and mode. Only auto modes were considered for VMT estimation purposes. The person trip tables were appropriately converted to vehicle trips by using average auto occupancy factors from the model.

The trip length or distance side of the equation was obtained using the model outputs from the "Skimming" step. The model skim outputs include peak and off peak skim matrices by mode, similar to trip outputs from the model.

Different trips purposes in the model are used in the estimation of different VMT metrics. For example, VMT per capita estimates include all home based trip purposes, VMT per employee includes only home based work trips whereas for VMT per service population estimates include all trip purposes.

The GCSP includes only non-residential land uses. Therefore, VMT per employee was used as the appropriate metric of comparison consistent with the City's draft VMT guidelines. VMT per employee for the project was estimated using the Tier2 zone system. Homebased work VMT for all the Tier2 project zones was aggregated and was divided by total project employment to derive the VMT per employee for the project.

It should be noted that LSA used a total employment of 11,103 as input to the travel model in the evaluation of VMT metrics for the project. However, the project team realized that the final job growth estimates from the project land uses resulted in a slightly higher employment of 11,170. LSA believes that the difference in the two employment numbers of less than 1% (0.6%) will not change the trip characteristics or average trip length of the project from a travel demand modeling perspective. Even though the employment differences are nominal to cause any meaningful changes in the VMT, LSA conducted proportional adjustment to the VMT estimate from the model to account for the nominal employment difference.

Horizon year (2040) VMT per employee for the project was compared with the existing regional VMT per employee. Table A shows the project VMT per employee estimate under the horizon year

(2040), and corresponding values for the region under existing conditions. As shown in Table A, the project's horizon year VMT per employee is 24.8% lower than existing regional average. Therefore, based on the City's draft VMT guidelines, the project is estimated to not have any significant VMT impacts.

Detailed VMT development calculations are included in Appendix A.

## Table A: Existing Regional and Horizon Year (2040) Project VMT Comparison

| Metric | Existing Regional Average | Horizon Year (2040) Project Average | Percentage Difference |
|---|---|---|---|
| VMT per Employee | 18.5 | 13.9 | -24.8% |

Source: 2016 SCAG RTP Model updated for City of Long Beach General Plan; CEQA Transportation Thresholds of Significance Guide City of Long Beach (May 2020)
VMT = vehicle miles traveled

Attachment:

Appendix A –VMT Calculation Worksheet

# APPENDIX A:

# VMT Calculation Worksheet

LSA

# Appendix A

## VMT Calculation Worksheet

| Adjusted 2040 with Project Model Run | | | |
|---|---|---|---|
| Tier2 Zone | Total Homebased Work VMT | Total Employment | VMT/Employee |
| 21413100 | 41,371 | 2,790 | 14.8 |
| 21417100 | 82,217 | 6,053 | 13.6 |
| 21417200 | 24,946 | 1,812 | 13.8 |
| 21417300 | 6,994 | 515 | 13.6 |
| **Total Project Zones** | **155,528** | **11,170** | **13.9** |