# Traffic Capacity Analysis

# U-4700 US 321 Widening

**Catawba, Burke, and Caldwell Counties, North Carolina**

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**North Carolina Department of Transportation**

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# Capacity Analysis Report

# US 321 Widening

# (NCDOT STIP U-4700)

## An Analysis of 2040 No-Build Alternative and 2040 Build Alternatives

**For:**

**North Carolina Department of Transportation**

**By:**

**AECOM Technical Services of North Carolina**

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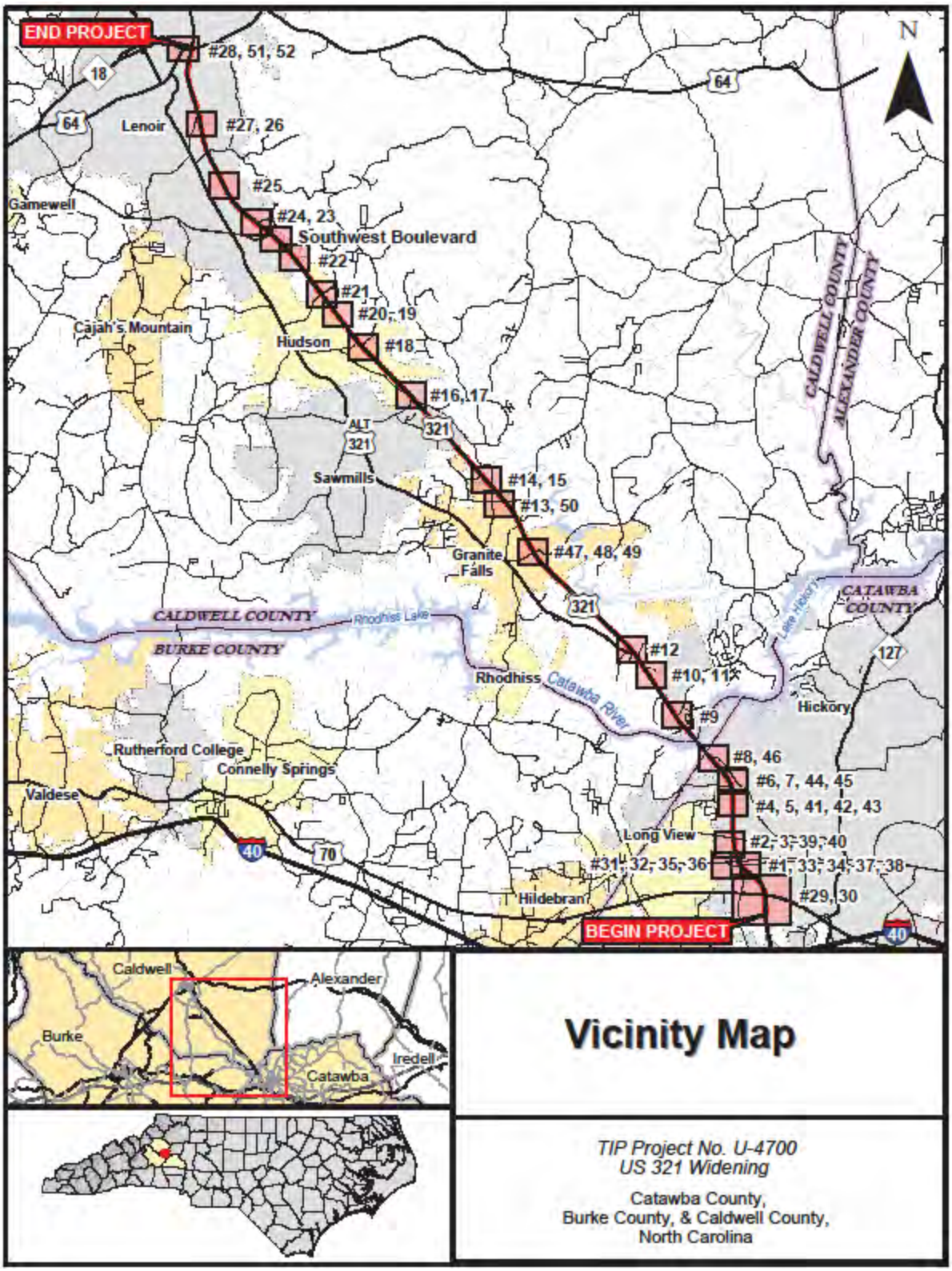
# 1.0 INTRODUCTION

This report summarizes the capacity analysis findings for North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program (STIP) Project U-4700. Project U-4700 consists of widening of US 321 for 14 miles in Catawba, Burke, and Caldwell Counties. The project limits have been revised and now begin at US 70 in Hickory and end at Southwest Boulevard in Lenoir. Several major intersections along the study corridor will be considered for improvements and upgrades. In the vicinity of the project, US 321 serves as a primary north-south route connecting several cities and towns to each other and to Interstate 40.

The analysis area is shown below in the **Vicinity Map**. The intersection list for this analysis is as follows:

- 1. US 321 at 13th Street SW
- 2. US 321 at Main Avenue Drive NW
- 3. US 321 at 2nd Avenue NW
- 4. US 321 at 7th Avenue NW
- 5. US 321 at 9th Avenue NW
- 6. US 321 at Clement Boulevard
- 7. US 321 at 13th Avenue Drive NW
- 8. US 321 at 15th Avenue NW/14th Avenue Circle NW
- 9. US 321 at Grace Chapel Road
- 10. US 321 at Alex Lee Blvd
- 11. US 321 at Pooveys Grove Church Road
- 12. US 321 at US 321 A/River Bend Drive
- 13. US 321 at Pinewood Road
- 14. US 321 at N. Highland Avenue
- 16. US 321 at Lower Cedar Valley Rd
- 17. US 321 at Quarry Estates Rd
- 18. US 321 at Pine Mountain Rd
- 19. US 321 at CCCTI South Entrance
- 20. US 321 at CCCTI Main Entrance
- XX. US 321 at CCCTI North Entrance
- 21. US 321 at Mount Herman Road
- 25. 12th Avenue NW at Old Lenoir Road
- 33. 1st Street SW Connector at 2nd Avenue SW
- 33. 2nd Avenue SW at 14th Street SW
- 34. 2nd Avenue SW at 13th Street SW
- 35. 1st Avenue SW at 17th Avenue SW
- 36. 1st Avenue SW at 1st Street SW Connector
- 38. 1st Avenue SW at 13th Street SW
- 37. 1st Avenue SW at 14th Street SW
- 44. 12th Street Drive at Old Lenoir Road
- 441. Clement Blvd at 12th Street Drive
- 50. Pinewood Road at N. Highland Avenue
- 2. Pinewood at Dudley Shoals
- 7. US 321 at Dudley Shoals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US 321 Widening
Catawba County,
Burke County, & Caldwell County,
North Carolina

Figure 1

## 2.0 SCOPE

This report includes an evaluation of the following alternatives:

- 2040 No-Build Alternative
- 2040 Build Alternative
  - 13th Street
    - One-Way Split Partial Cloverleaf Interchange
    - Partial Cloverleaf Interchange
    - Two-Way Partial Cloverleaf Interchange
    - Two-Way Split Partial Cloverleaf Interchange
  - Clement Boulevard
    - Partial Cloverleaf Interchange
    - Superstreet
  - Grace Chapel Road
    - Superstreet
    - Reverse Superstreet
  - Dudley Shoals Road
    - At-Grade Intersection
    - Freeway Ramp
  - Lower Cedar Valley Road & Pine Mountain Road
  - Mount Herman Road & Caldwell Community College and Technical Institute
  - MDI Simulation Analysis

Using the traffic forecast information provided by the NCDOT (dated February 2017) and located in **Appendix A**, a Synchro, SimTraffic, and Highway Capacity Software capacity analysis was performed. Per the current scope of the project, the analysis included no-build conditions as well as build conditions with recommendations on future improvements.

# 3.0 EXISTING CONDITIONS

US 321 is a four-lane divided highway that is a primary north-south corridor providing connections between Hickory and Lenoir. It carries 42,100 vehicles per day south of US 70, dropping to 25,000 vehicles per day north of SR 1933 (Southwest Blvd) and peaks at 43,200 vehicles across the Catawba River. It has a posted speed limit of 55 miles per hour (mph) south of US 70, 45 mph through Hickory, NC, and 55 mph north of the Catawba River. Approximately 6-13% of this traffic is heavy vehicles.

13th St SW is a four-lane divided east-west roadway providing access to businesses. It carries 3,800 vehicles per day west of US 321, and 4,500 vehicles per day east of US 321, with a posted speed limit of 35 mph. Approximately 9% of this traffic is heavy vehicles.

SR 1371 (Clement Blvd) is a four-lane undivided east-west roadway providing access to businesses and residences in northwest Hickory. It carries 4,500 vehicles per day west of US 321, and 13,100 vehicles per day east of US 321, with a posted speed limit of 35 mph. Approximately 3-5% of this traffic is heavy vehicles.

SR 1751 (Grace Chapel Rd) is two-lane undivided an east-west roadway providing access to residential communities. It carries 7,000 vehicles per day with a posted speed limit of 45 mph. Approximately 4% of this traffic is heavy vehicles.

SR 1102 (Dudley Shoals Rd) is a two-lane undivided east-west roadway providing access to residential communities. It carries 3,200 vehicles per day, with a posted speed limit of 35 mph. Approximately 8% of this traffic is heavy vehicles.

SR 1108 (Lower Cedar Valley Rd) is a two-lane undivided north-south roadway providing access to residential communities. It carries 7,300 vehicles per day west of US 321, and 3,100 vehicles per day east of US 321, with a posted speed limit of 45 mph. Approximately 4-6% of this traffic is heavy vehicles.

SR 1809 (Pine Mountain Rd) is a two-lane undivided east-west roadway providing access to residential communities. It carries 6,900 vehicles per day west of US 321, and 7,000 vehicles per day east of US 321, with a posted speed limit of 35 mph. Approximately 4% of this traffic is heavy vehicles.

SR 1160 (Mount Herman Rd) is a two-lane undivided east-west roadway providing access to residential communities and is within the vicinity of Caldwell Community College. It carries 8,600 vehicles per day west of US 321, and 6,900 vehicles per day east of US 321, with a posted speed limit of 35 mph. Approximately 3% of this traffic is heavy vehicles.

# 4.0 METHOD OF ANALYSIS

## 4.1 Traffic Volume Assumptions

The traffic forecast used for this project was conducted and furnished to AECOM by NCDOT (dated February 2017), as shown in **Appendix A**. Using this forecast and NCDOT's Intersection Analysis Utility (IAU) tool, AM and PM peak hour volumes were developed for all of the alternatives being evaluated. The NCDOT 2016-2025 STIP was reviewed, and no fiscally constrained projects within or adjacent to the project study area are assumed to be in place. The IAU spreadsheets for all scenarios are located in **Appendix B**.

## 4.2 Capacity Analysis

The highway capacity analyses performed were based on methodologies from the *Highway Capacity Manual (HCM 2010)*. Traffic modeling software used in the capacity analyses were *Synchro 9.1* and *SimTraffic 9.1, (Build 910, Rev 24)*, and *Highway Capacity Software (HCS) 2010 Version 6.80*. The analyses were conducted in accordance with the latest NCDOT Congestion Management Unit's *Capacity Analysis Guidelines for TIP projects*, dated July 2015.

The traffic carrying ability of a roadway is described by levels of service (LOS) that range from LOS A to LOS F. **Table 1** defines the traffic flow conditions and approximate driver comfort level at each level of service for signalized and unsignalized intersections, as well as basic freeway segments and ramp merges/diverges. Note that the delays associated with LOS for signalized intersections are different from those associated with unsignalized intersections. *HCM 2010* explains that drivers perceive that a signalized intersection is designed to carry higher traffic volumes, and therefore expect to experience greater delays at signalized intersections. A signalized intersection is described by a single LOS. Unsignalized intersections are assigned a LOS for each minor movement. Basic freeway segments and ramps are described by density (passenger cars per mile per lane (pc/mi/ln)) or volume-to-capacity (v/c) ratios.

**Table 1 – Level of Service (LOS) Index**

| LOS | Traffic Flow Conditions | Delay (sec) Signalized Intersections | Delay (sec) Unsignalized Intersections | Basic Freeway Segment Density (pc/mi/ln) | Ramp Merge/ Diverge Density (pc/mi/ln) |
|---|---|---|---|---|---|
| A | Progression is extremely favorable and most vehicles do not stop at all. | ≤ 10 | ≤ 10 | ≤ 11 | ≤ 10 |
| B | Good progression, some delay. | > 10 - 20 | > 10 - 15 | > 11 - 18 | > 10 - 20 |
| C | Fair progression, higher delay. | > 20 - 35 | > 15 - 25 | > 18 - 26 | > 20 - 28 |
| D | Unfavorable progression, congestion becomes apparent. | > 35 - 55 | > 25 - 35 | > 26 - 35 | > 28 - 35 |
| E | Poor progression, substantial delay. | > 55 - 80 | > 35 - 50 | > 35 - 45 | > 35, and v/c < 1.0 |
| F | Poor progression, extreme delay. | > 80 | > 50 | > 45, or v/c > 1.0 | v/c > 1.0 |

Source: HCM 2010

For the queue analysis, simulation runs (using SimTraffic) were performed to analyze the queuing and blocking problems. The queue reported is the greater of the SimTraffic maximum queue and the Synchro 95th percentile queue.

# 5.0 FINDINGS

## 5.1 2040 No-Build Alternative

A capacity analysis was performed for 2040 No-Build Alternative AM and PM peak periods for all of the study intersections and freeway network. The analyses were based on signal design plans and congestion management guidelines from NCDOT (confirmed by observations in the field). Levels of service are summarized in **Table 2**, while traffic volumes are shown in **Figures 1A**, **1B**, and **1C**. Levels of service and lane configurations are shown in **Figure 2A**, **2B**, and **2C**, and detailed Synchro and SimTraffic reports are located in **Appendix C**. This analysis was performed to establish a baseline for comparison of travel times between US 70 and US 321 ALT, and not the entire project network.

**Table 2 – 2040 No-Build Alternative Level of Service**

| # | Intersection | Level of Service | |
|---|---|---|---|
| | | AM Peak | PM Peak |
| **1** | **US 321 at 13th Street SW** | **C** | **C** |
| | Eastbound Left | F | F |
| | Eastbound Left / Through / Right | E | E |
| | Westbound Left | E | E |
| | Westbound Through | E | E |
| | Westbound Right | A | A |
| | Northbound Left | E | D |
| | Northbound Through | C | C |
| | Northbound Right | A | A |
| | Southbound Left | F | E |
| | Southbound Through | A | A |
| | Southbound Right | A | A |
| **2** | **US 321 at Main Avenue Drive NW** | **-** | **-** |
| | Northbound Left | D | C |
| | Southbound Left | C | C |
| | Eastbound Left / Through / Right | F | F |
| | Westbound Left / Through / Right | F | F |

*As per the HCM 2010, V/C ration in excess of 1.0 is LOS F.

| Table 2 (Continued) – 2040 No-Build Alternative Level of Service | | | |
|---|---|---|---|
| # | Intersection | Level of Service | |
| | | AM Peak | PM Peak |
| **3** | **US 321 at 2nd Avenue NW** | **E** | **E** |
| | Eastbound Left | E | E |
| | Eastbound Through / Right | F | F |
| | Westbound Left / Through / Right | F | F |
| | Northbound Left | F | F |
| | Northbound Through | C | F* |
| | Northbound Right | A | A |
| | Southbound Left | E | E |
| | Southbound Through / Right | F* | C |
| **4** | **US 321 at 7th Avenue NW** | **B** | **C** |
| | Eastbound Left / Through / Right | E | E |
| | Westbound Left | E | E |
| | Westbound Through / Right | F | D |
| | Northbound Left | E | E |
| | Northbound Through | A | C |
| | Northbound Right | A | B |
| | Southbound Left | E | E |
| | Southbound Through / Right | B | A |
| **5** | **US 321 at 9th Avenue NW** | **B** | **C** |
| | Eastbound Left | F | F |
| | Eastbound Through / Right | E | D |
| | Westbound Left | F | D |
| | Westbound Through / Right | F | D |
| | Northbound Left | E | E |
| | Northbound Through / Right | A | C |
| | Southbound Left | F | E |
| | Southbound Through / Right | A | A |

*As per the HCM 2010, V/C ration in excess of 1.0 is LOS F.

**Table 2 (Continued) – 2040 No-Build Alternative Level of Service**

| # | Intersection | Level of Service | |
|---|---|---|---|
| | | AM Peak | PM Peak |
| **6** | **US 321 at Clement Boulevard** | **E** | **E** |
| | Eastbound Left | F | E |
| | Eastbound Left / Through | F | F |
| | Eastbound Right | E | D |
| | Westbound Left | F | F |
| | Westbound Left / Through | F | F |
| | Westbound Right | F | D |
| | Northbound Left | E | D |
| | Northbound Through | F* | F* |
| | Northbound Right | B | A |
| | Southbound Left | D | F |
| | Southbound Through / Right | B | B |
| **7** | **US 321 at 13th Avenue Drive NW** | **-** | **-** |
| | Eastbound Right | F | C |
| | Northbound Left | D | C |
| **8** | **US 321 at 15th Avenue NW & 14th Avenue Circle NW** | **C** | **F** |
| | Eastbound Left | E | E |
| | Eastbound Through | E | E |
| | Eastbound Right | D | D |
| | Westbound Left / Through | E | E |
| | Westbound Right | D | F |
| | Northbound Left | F | E |
| | Northbound Through | B | F |
| | Northbound Right | B | A |
| | Southbound Left | F | E |
| | Southbound Through | B | B |
| | Southbound Right | A | A |

*As per the HCM 2010, V/C ration in excess of 1.0 is LOS F.

**Table 2 (Continued) – 2040 No-Build Alternative Level of Service**

| # | Intersection | Level of Service | |
|---|---|---|---|
| | | AM Peak | PM Peak |
| **9** | **US 321 at Grace Chapel Road** | **C** | **B** |
| | Westbound Left | F | E |
| | Westbound Right | E | E |
| | Northbound U-Turn | F | F |
| | Northbound Through | A | F* |
| | Northbound Right | A | A |
| | Southbound Left | E | E |
| | Southbound Through | C | A |
| **10** | **US 321 at Alex Lee Boulevard** | **B** | **A** |
| | Eastbound Left / Through | E | E |
| | Eastbound Right | D | D |
| | Westbound Left / Through | F | E |
| | Westbound Right | D | D |
| | Northbound Left | E | D |
| | Northbound Through | C | A |
| | Northbound Right | B | A |
| | Southbound Left | E | E |
| | Southbound Through / Right | A | A |
| **11** | **US 321 at Pooveys Grove Church Rd** | **-** | **-** |
| | Westbound Right | C | D |
| **12** | **US 321 at US 321A & River Bend Dr** | **D** | **D** |
| | Eastbound Left | E | D |
| | Eastbound Through | F | F |
| | Eastbound Right | A | A |
| | Westbound Left | F | E |
| | Westbound Through | D | D |
| | Westbound Right | C | C |
| | Northbound Left | F | E |
| | Northbound Through | C | C |
| | Northbound Right | B | A |
| | Southbound Left | E | E |
| | Southbound Through | D | C |
| | Southbound Right | A | A |

Movements with zero delay were omitted
*As per the HCM 2010, V/C ration in excess of 1.0 is LOS F.

Eight (8) out of the twelve (12) intersections operate at LOS D or better in both peak hours. The intersections of US 321 at 13th Ave Dr NW, and US 321 at 15th Ave NW/20th Ave NW operate at LOS F in one peak hour, and LOS C in one peak hour. The intersections of US 321 at 2nd Ave NW, and US 321 at Clement Blvd operate at LOS E in both peak hours.

The average travel time per vehicle in the simulation is 7 minutes in the AM peak period and 7.2 minutes in the PM peak period. The average travel distance per vehicle is 2.1 miles with an average speed of 21 mph in the AM and 20 mph in the PM.

## 5.2 2040 Build Alternative

### 5.2.1 13th Street

#### 5.2.1.1 One-Way Split Partial Cloverleaf Interchange

A capacity analysis was performed for 2040 Build Alternative – 13th Street – One-Way Split Partial Cloverleaf Interchange AM and PM peak periods for all of the study intersections and freeway network. Intersection levels of service are summarized in **Table 3A**, HCS results are summarized in **Table 3B**, and queue reports are summarized in **Table 3C**. Traffic volumes are shown in **Figures 3A** and **3B**. Levels of service and lane configurations are shown in **Figures 4A** and **4B**, and detailed Synchro, SimTraffic, and HCS reports are located in **Appendix D**.

**Table 3A – 2040 Build Alternative – 13th Street One-Way Split Partial Cloverleaf Interchange Intersection Level of Service**

| # | Intersection | Level of Service | |
|---|---|---|---|
| | | AM Peak | PM Peak |
| **10** | **15th St SW / 15th St Connector at 1st Ave SW** | - | - |
| | Northbound Left / Through | B | B |
| | Southbound Through | C | C |
| | Southbound Right | B | B |
| **32** | **15th St SW at 1st Ave SW Connector / 2nd Ave SW** | - | - |
| | Northbound Through / Right | B | B |
| | Southbound Left / Through | B | B |
| **33** | **14th St SW at 2nd Ave SW** | - | - |
| | Northbound Through / Right | B | B |
| | Southbound Left / Through | C | C |
| **34** | **2nd Ave SW at 13th St SW** | - | - |
| | Northbound Through | B | B |
| | Northbound Right | B | B |
| | Southbound Left / Through | B | B |
| **35** | **2nd Ave SW at 13th St SW** | | |
| | Eastbound Left / Through / Right | | |
| | Westbound Left / Through / Right | | |
| | Northbound Left | | |
| | Northbound Through / Right | | |
| | Southbound Left / Through / Right | | |

| Table 3A (Continued) – 2040 Build Alternative – 13th Street One-Way Split Partial Cloverleaf Interchange Intersection Level of Service | | | |
|---|---|---|---|
| # | Intersection | Level of Service | |
| | | AM Peak | PM Peak |
| **37** | **14th St SW at 1st Ave SW** | **-** | **-** |
| | Northbound Left / Through | C | C |
| | Southbound Through / Right | B | C |
| **38** | **13th St SW at 1st Ave SW** | **-** | **-** |
| | Northbound Left / Through | B | B |
| | Southbound Through / Right | B | B |

Movements with zero delay were omitted

All six (6) intersections operate at LOS C or better in both peak hours.

| Table 3B – 2040 Build Alternative – 13th Street One-Way Split Partial Cloverleaf Interchange HCS Level of Service | | | |
|---|---|---|---|
| # | Segment | Level of Service or v/c Ratio | |
| | | AM Peak | PM Peak |
| **Freeway Merges and Diverges** | | | |
| **201** | **US 321 NB – Ramp to 13th St** | C | C |
| **202** | **US 321 SB – Ramp from 13th St** | B | B |
| **203** | **US 321 NB – Ramp from 13th St** | B | C |
| **204** | **US 321 SB – Ramp to 13th St** | C | B |

All four (4) ramps operate at LOS C or better in both peak hours.

| Table 3C – 2040 Build Alternative – 13th Street One-Way Split Partial Cloverleaf Interchange Queueing and Recommended Storage | | | | | |
|---|---|---|---|---|---|
| # | Intersection | Movement | Queue (feet) | | Recommended Storage (feet) |
| | | | AM Peak | PM Peak | |
| **10** | **15th St SW / 15th St Connector at 1st Ave SW** | SBR | 53 | 56 | 100 |
| **34** | **2nd Ave SW at 13th St SW** | NBR | 27 | 49 | 100 |

None of the intersections exhibit "excessive" queuing issues, defined by turning queue lengths of 200 feet in excess of the available storage bay. In general, the provided storage lengths adequately handle the queues.

#### 5.2.1.2 Partial Cloverleaf Interchange

A capacity analysis was performed for 2040 Build Alternative – 13th Street – Partial Cloverleaf Interchange AM and PM peak periods for all of the study intersections and freeway network. Intersection levels of service are summarized in **Table 4A**, HCS results are summarized in **Table 4B**, and queue reports are summarized in **Table 4C**. Traffic volumes are shown in **Figures 5A** and **5B**. Levels of service and lane configurations are shown in **Figures 6A** and **6B**, and detailed Synchro, SimTraffic, and HCS reports are located in **Appendix E**.

**Table 4A – 2040 Build Alternative – 13th Street Partial Cloverleaf Interchange Intersection Level of Service**

| # | Intersection | Level of Service | |
|---|---|---|---|
| | | AM Peak | PM Peak |
| **1** | **13th St SW at US 321 On/Off Ramp** | **-** | **-** |
| | Westbound Left / Right | B | B |
| | Southbound Left / Through | A | A |
| | Southbound Through | A | A |
| **2** | **13th St SW at US 321 SB Off Ramp** | **-** | **-** |
| | Eastbound Left / Right | B | B |
| | Northbound Left / Through | A | A |
| | Northbound Through | A | A |
| **10** | **15th St SW at 1st Ave SW** | **-** | **-** |
| | Northbound Left | A | B |
| **32** | **15th St SW at 1st Ave SW Connector / 2nd Ave SW** | **-** | **-** |
| | Northbound Through / Right | B | A |
| | Southbound Left / Through | B | B |
| **33** | **14th St SW at 2nd Ave SW** | **-** | **-** |
| | Northbound Through / Right | B | A |
| | Southbound Left / Through | B | B |
| **34** | **2nd Ave SW at 13th St SW** | **-** | **-** |
| | Northbound Through | B | B |
| | Northbound Right | B | B |
| | Southbound Left | B | B |
| | Southbound Through | B | C |

| Table 4A (Continued) – 2040 Build Alternative – 13th Street Partial Cloverleaf Interchange Intersection Level of Service | | | |
|---|---|---|---|
| # | Intersection | Level of Service | |
| | | AM Peak | PM Peak |
| **35** | **17th Ave SW at 1st Ave SW** | **B** | **B** |
| | Eastbound Left / Through / Right | A | A |
| | Westbound Left / Through / Right | A | B |
| | Northbound Left | B | B |
| | Northbound Through / Right | B | B |
| | Southbound Left / Through / Right | C | C |
| **37** | **14th St SW at 1st Ave SW** | **-** | **-** |
| | Northbound Left / Through | C | C |
| | Southbound Through / Right | B | C |
| **38** | **13th St SW at 1st Ave SW** | **-** | **-** |
| | Northbound Left / Through | B | C |
| | Southbound Through / Right | B | B |

Movements with zero delay were omitted

All nine (9) intersections operate at LOS C or better in both peak hours.

Intersection 35 was added to only this scenario to determine if it would function acceptably. A traffic count was taken May 30-31, 2017. The traffic forecast was used to calculate the growth factor resulting in 1.146 for 2040. The intersection functions well with a V/C ratio of less than 0.6. See **Appendix B** for the traffic count and growth factor calculations.

| Table 4B – 2040 Build Alternative – 13th Street Partial Cloverleaf Interchange HCS Level of Service | | | |
|---|---|---|---|
| # | Segment | Level of Service or v/c Ratio | |
| | | AM Peak | PM Peak |
| **Freeway Merges and Diverges** | | | |
| **201** | **US 321 NB – Ramp to 13th St** | B | C |
| **202** | **US 321 SB – Ramp from 13th St** | B | B |
| **203** | **US 321 NB – Ramp from 13th St** | B | B |
| **204** | **US 321 SB – Ramp to 13th St** | C | B |

All four (4) ramps operate at LOS C or better in both peak hours.

### 5.2.1.3 Two-Way Partial Cloverleaf Interchange

A capacity analysis was performed for 2040 Build Alternative – 13th Street – Two-Way Partial Cloverleaf Interchange AM and PM peak periods for all of the study intersections and freeway network. Intersection levels of service are summarized in **Table 5A**, HCS results are summarized in **Table 5B**, and queues are summarized in **Table 5C**. Traffic volumes are shown in **Figures 7A** and **7B**. Levels of service and lane configurations are shown in **Figures 8A** and **8B**, and detailed Synchro, SimTraffic, and HCS reports are located in **Appendix F**.

**Table 5A – 2040 Build Alternative – 13th Street Two-Way Partial Cloverleaf Interchange Intersection Level of Service**

| # | Intersection | Level of Service | |
|---|---|---|---|
| | | AM Peak | PM Peak |
| **1** | **13th St SW at US 321 On/Off Ramp** | **-** | **-** |
| | Westbound Left / Right | B | B |
| | Southbound Left | A | A |
| **2** | **13th St SW at US 321 SB Off Ramp** | **-** | **-** |
| | Eastbound Left / Right | B | B |
| | Northbound Left | A | A |
| **32** | **15th St SW at 1st St SW Connector / 2nd Ave SW** | **-** | **-** |
| | Westbound Left | A | A |
| | Northbound Through / Right | A | A |
| | Southbound Left / Through | A | A |
| **34** | **2nd Ave SW at 13th St SW** | **-** | **-** |
| | Northbound Right | B | B |
| | Southbound Left / Through | B | B |
| **35** | **12th St SW at 2nd Ave SW / 2nd Ave** | **-** | **-** |
| | Northbound Through / Right | B | B |
| | Southbound Left / Through | B | B |
| **36** | **15th St SW at 1st Ave SW** | **-** | **-** |
| | Westbound Left / Through | A | A |
| | Northbound Left / Right | B | B |
| **37** | **1st Ave SW at 14th St SW** | **-** | **-** |
| | Eastbound Left | A | A |
| | Southbound Right | B | B |

| Table 5A (Continued) – 2040 Build Alternative – 13th Street Two-Way Partial Cloverleaf Interchange Intersection Level of Service | | | |
|---|---|---|---|
| # | Intersection | Level of Service | |
| | | AM Peak | PM Peak |
| **38** | **1st Ave SW at Driveway** | **-** | **-** |
| | Southbound Right | B | B |
| **39** | **12th St SW at 1st Ave SW / 1st Ave** | **-** | **-** |
| | Northbound Left / Through | B | B |
| | Southbound Through / Right | B | B |

Movements with zero delay were omitted

All nine (9) intersections operate at LOS B or better in both peak hours.

| Table 5B – 2040 Build Alternative – 13th Street Two-Way Partial Cloverleaf Interchange HCS Level of Service | | | |
|---|---|---|---|
| # | Segment | Level of Service or v/c Ratio | |
| | | AM Peak | PM Peak |
| **Freeway Merges and Diverges** | | | |
| **201** | **US 321 NB – Ramp to 13th St** | C | C |
| **202** | **US 321 SB – Ramp from 13th St** | C | B |
| **203** | **US 321 NB – Ramp from 13th St** | B | C |
| **204** | **US 321 SB – Ramp to 13th St** | C | C |

All four (4) ramps operate at LOS C or better in both peak hours.

| Table 5C – 2040 Build Alternative – 13th Street Two-Way Partial Cloverleaf Interchange Queueing and Recommended Storage | | | | | |
|---|---|---|---|---|---|
| # | Intersection | Movement | Queue (feet) | | Recommended Storage (feet) |
| | | | AM Peak | PM Peak | |
| **1** | **13th St SW at US 321 On/Off Ramp** | SBL | 31 | 31 | 100 |

None of the intersections present "excessive" queuing issues, defined by turning queue lengths of 200 feet in excess of the available storage bay. In general, the provided storage lengths adequately handle the queues.

#### 5.2.1.4 Two-Way Split Partial Cloverleaf Interchange

A capacity analysis was performed for 2040 Build Alternative – 13th Street – Two-Way Split Partial Cloverleaf Interchange AM and PM peak periods for all of the study intersections and freeway network. Intersection levels of service are summarized in **Table 6A**, and HCS results are summarized in **Table 6B**. Traffic volumes are shown in **Figures 9A** and **9B**. Levels of service and lane configurations are shown in **Figures 10A** and **10B**, and detailed Synchro, SimTraffic, and HCS reports are located in **Appendix G**.

**Table 6A – 2040 Build Alternative – 13th Street Two-Way Split Partial Cloverleaf Interchange Intersection Level of Service**

| # | Intersection | Level of Service | |
|---|---|---|---|
| | | AM Peak | PM Peak |
| **32** | **15th St SW at 1st St SW Connector / 2nd Ave SW** | **-** | **-** |
| | Eastbound Left / Through / Right | A | A |
| | Westbound Left / Through / Right | A | A |
| | Northbound Left / Through / Right | B | B |
| | Southbound Left / Through / Right | C | C |
| **33** | **US 321 SB Off Ramp at 2nd Ave SW** | **-** | **-** |
| | Westbound Left / Through | A | A |
| | Northbound Left / Right | C | C |
| **34** | **13th St SW at 2nd Ave SW** | **-** | **-** |
| | Eastbound Left / Through / Right | A | A |
| | Westbound Left / Through / Right | A | A |
| | Northbound Left / Through / Right | F | D |
| | Southbound Left / Through / Right | C | B |
| **36** | **15th St SW at 1st Ave SW** | **-** | **-** |
| | Westbound Left / Through | A | A |
| | Northbound Left / Right | B | B |
| **37** | **14th St SW at 1st Ave SW** | **-** | **-** |
| | Eastbound Left / Through / Right | A | A |
| | Westbound Left / Through / Right | A | A |
| | Northbound Left / Through / Right | B | B |
| | Southbound Left / Through / Right | B | B |

| Table 6A (Continued) – 2040 Build Alternative – 13th Street Two-Way Split Partial Cloverleaf Interchange Intersection Level of Service | | | |
|---|---|---|---|
| # | Intersection | Level of Service | |
| | | AM Peak | PM Peak |
| **38** | **13th St SW / Driveway at 1st Ave SW** | **-** | **-** |
| | Eastbound Left / Through / Right | A | A |
| | Westbound Left / Through / Right | A | A |
| | Northbound Left / Through / Right | B | B |
| | Southbound Left / Through / Right | B | B |

Movements with zero delay were omitted

Five (5) of the six (6) intersections operate at LOS C or better in both peak hours. The intersection of 13th St SW at 2nd Ave SW operates at LOS F in the AM peak hour, and LOS D in the PM peak hour, stemming from the minor side street turning movement. There is available capacity for this movement being less than 0.85. If a signal were added, it would have an LOS of B. However, a traffic signal may not be warranted by the projected future year volumes and thus was not included in the analysis.

| Table 6B – 2040 Build Alternative – 13th Street Two-Way Split Partial Cloverleaf Interchange HCS Level of Service | | | |
|---|---|---|---|
| # | Segment | Level of Service or v/c Ratio | |
| | | AM Peak | PM Peak |
| **Freeway Merges and Diverges** | | | |
| **201** | **US 321 NB – Ramp to 13th St** | C | C |
| **202** | **US 321 SB – Ramp from 13th St** | C | B |
| **203** | **US 321 NB – Ramp from 13th St** | B | C |
| **204** | **US 321 SB – Ramp to 13th St** | C | C |

All four (4) ramps operate at LOS C or better in both peak hours.

### 5.2.2 Clement Boulevard

#### 5.2.2.1 Partial Cloverleaf Interchange

A capacity analysis was performed for 2040 Build Alternative – Clement Boulevard – Partial Cloverleaf Interchange AM and PM peak periods for all of the study intersections and freeway network. Intersection levels of service are summarized in **Table 7A**, HCS results are summarized in **Table 7B**, and queue reports are summarized in **Table 7C**. Traffic volumes are shown in **Figure 11**. Levels of service and lane configurations are shown in **Figure 12**, and detailed Synchro, SimTraffic, and HCS reports are located in **Appendix H**.

**Table 7A – 2040 Build Alternative – Clement Boulevard Partial Cloverleaf Interchange Intersection Level of Service**

| # | Intersection | Level of Service | |
|---|---|---|---|
| | | AM Peak | PM Peak |
| **1** | **US 321 SB Ramps at Clement Blvd** | **A** | **A** |
| | Eastbound Through | B | B |
| | Eastbound Right | A | A |
| | Westbound Left | B | B |
| | Westbound Through | A | A |
| | Northbound Left | D | D |
| | Northbound Right | A | A |
| **2** | **US 321 NB Ramps at Clement Blvd** | **B** | **C** |
| | Eastbound Left | D | E |
| | Eastbound Through | B | C |
| | Westbound Through | C | C |
| | Westbound Right | A | B |
| | Southbound Left | B | B |
| | Southbound Right | A | A |
| **3** | **Clement Blvd / Old Lenoir Rd at 12th Ave** | **B** | **B** |
| | Eastbound Left | A | B |
| | Eastbound Through | A | A |
| | Westbound Through / Right | D | C |
| | Southbound Left | C | C |
| | Southbound Right | A | B |

| Table 7A (Continued) – 2040 Build Alternative – Clement Boulevard Partial Cloverleaf Interchange Intersection Level of Service | | | |
|---|---|---|---|
| # | Intersection | Level of Service | |
| | | AM Peak | PM Peak |
| **4** | **12th Ave at 12th St Dr** | **C** | **B** |
| | Eastbound Through / Right | E | D |
| | Westbound Left | C | B |
| | Westbound Through | A | A |
| | Northbound Left | D | D |
| | Northbound Right | A | A |

Movements with zero delay were omitted

All four (4) intersections operate at LOS C or better in both peak hours.

| Table 7B – 2040 Build Alternative – Clement Boulevard Partial Cloverleaf Interchange HCS Level of Service | | | |
|---|---|---|---|
| # | Segment | Level of Service or v/c Ratio | |
| | | AM Peak | PM Peak |
| **Freeway Merges and Diverges** | | | |
| **201** | **US 321 NB – Ramp to Clement Blvd** | B | C |
| **202** | **US 321 SB – Ramp from Clement Blvd** | C | B |
| **203** | **US 321 NB – Ramp from Clement Blvd** | C | D |
| **204** | **US 321 SB – Ramp to Clement Blvd** | D | C |

All four (4) ramps operate at LOS D or better in both peak hours.

| Table 7C – 2040 Build Alternative – Clement Boulevard Partial Cloverleaf Interchange Queueing and Recommended Storage | | | | | |
|---|---|---|---|---|---|
| # | Intersection | Movement | Queue (feet) | | Recommended Storage (feet) |
| | | | AM Peak | PM Peak | |
| 1 | US 321 SB Ramps at Clement Blvd | EBR | 53 | 52 | 250 |
| | | WBL | 246 | 232 | 400 |
| | | NBL | 150 | 129 | Continuous Lane |
| 2 | US 321 NB Ramps at Clement Blvd | EBL | 93 | 128 | 250 |
| | | WBR | 221 | 799 | Continuous Lane |
| | | SBL | 197 | 244 | 250 |
| | | SBR | 133 | 48 | Continuous Lane |
| 3 | Clement Blvd / Old Lenoir Rd at 12th Ave | EBL | 371 | 297 | 250/ Continuous Lane |
| | | SBL | 274 | 225 | 175 |
| | | SBR | 400 | 397 | Continuous Lane |
| 4 | 12th Ave at 12th St Dr | WBL | 700 | 367 | 600 |
| | | NBL | 112 | 180 | 100 |
| | | NBR | 155 | 290 | Continuous Lane |

One queue for Old Lenoir Rd exceeds the proposed storage lengths by approximately 125 feet. The southbound left exceeds the storage length, additional storage is not recommended as it would require a wider roadway.

The Queues for 12th St Dr do exceed the proposed storage lengths. Westbound left storage is proposed as 600 feet, additional storage would require further widening and would not be recommended. The southbound left exceeds the storage length, additional storage is not recommended as would require a wider roadway to be constructed.

None of the intersections present “excessive” queuing issues, defined by turning queue lengths of 200 feet in excess of the available storage bay. In general, the provided storage lengths adequately handle the queues with the exceptions noted above.

#### 5.2.2.2 Superstreet

A capacity analysis was performed for 2040 Build Alternative – Clement Boulevard – Superstreet AM and PM peak periods for all of the study intersections. Intersection levels of service are summarized in **Table 8A**, and queue reports are summarized in **Table 8B**. Traffic volumes are shown in **Figure 13**. Levels of service and lane configurations are shown in **Figure 14**, and detailed Synchro and SimTraffic reports are located in **Appendix I**.

**Table 8A – 2040 Build Alternative – Clement Boulevard Superstreet Intersection Level of Service**

| # | Intersection | Level of Service | |
|---|---|---|---|
| | | AM Peak | PM Peak |
| **25** | **12th St Dr NW / Old Lenoir Rd at Clement Blvd** | **C** | **B** |
| | Eastbound Left | B | A |
| | Eastbound Through / Right | B | A |
| | Westbound Left | E | D |
| | Westbound Through | B | A |
| | Westbound Right | B | A |
| | Northbound Left | B | C |
| | Northbound Through | B | C |
| | Northbound Right | B | C |
| | Southbound Left | D | D |
| | Southbound Through / Right | C | C |
| **43** | **SB US 321 at 7th Ave NW / 7th Ave NW Left-Over** | **B** | **C** |
| | Eastbound Right | D | D |
| | Northwestbound Left | D | B |
| | Southbound Through | A | C |
| | Southbound Right | A | A |
| **44** | **NB US 321 at 7th Ave NW U-Turn** | **B** | **C** |
| | Southeastbound Left | D | D |
| | Northbound Through | A | C |

| Table 8A (Continued) – 2040 Build Alternative – Clement Boulevard Superstreet Intersection Level of Service | | | |
|---|---|---|---|
| # | Intersection | Level of Service | |
| | | AM Peak | PM Peak |
| **61** | **NB US 321 at Clement Blvd / Clement Blvd Left-Over** | **B** | **B** |
| | Westbound Right | C | C |
| | Southeastbound Left | C | D |
| | Northbound Through | B | A |
| | Northbound Right | A | A |
| **62** | **SB US 321 at 13th Ave Dr NW / Clement Blvd U-Turn** | **B** | **A** |
| | Eastbound Right | A | A |
| | Northwestbound Left | D | D |
| | Southbound Through / Right | B | A |
| **63** | **SB US 321 at Clement Blvd / Clement Blvd Left-Over** | **C** | **C** |
| | Eastbound Right | E | D |
| | Northwestbound U-Turn | D | D |
| | Northwestbound Left | D | D |
| | Southbound Through | B | B |
| | Southbound Right | A | A |
| **64** | **NB US 321 at 9th Ave NW / Clement Blvd U-Turn** | **C** | **C** |
| | Westbound Right | D | E |
| | Southeastbound Left | C | D |
| | Northbound Through / Right | B | B |
| **441** | **Old Lenoir Rd / 12th Ave NW** | **A** | **B** |
| | Eastbound Left | B | C |
| | Eastbound Through | A | A |
| | Westbound Through / Right | B | B |
| | Southbound Left | D | D |
| | Southbound Right | A | A |

Movements with zero delay were omitted

All eight (8) intersections operate at LOS C or better in both peak hours.

| Table 8B –2040 Build Alternative – Clement Boulevard Superstreet Queueing and Recommended Storage | | | | | |
|---|---|---|---|---|---|
| # | Intersection | Movement | Queue (feet) | | Recommended Storage (feet) |
| | | | AM Peak | PM Peak | |
| 25 | 12th St Dr NW / Old Lenoir Rd at Clement Blvd | EBL | 113 | 74 | 175 |
| | | WBL | 250 | 102 | 150 |
| | | WBR | 131 | 151 | 125 |
| | | NBL | 26 | 88 | 125 |
| | | SBL | 367 | 156 | Continuous Lane |
| | | SBTR | 135 | 65 | 450 |
| 43 | SB US 321 at 7th Ave NW / 7th Ave NW Left-Over | EBR | 252 | 541 | Continuous Lane |
| | | NWL | 234 | 91 | 225 |
| | | SBR | 157 | 111 | 250 |
| 44 | NB US 321 at 7th Ave NW U-Turn | SEL | 137 | 418 | 425 |
| 61 | NB US 321 at Clement Blvd / Clement Blvd Left-Over | WBR | 346 | 200 | 250/ Continuous Lane |
| | | NBR | 54 | 114 | Continuous Lane |
| | | SEL | 175 | 282 | 350 |
| 62 | SB US 321 at 13th Ave Dr NW / Clement Blvd U-Turn | NWL | 365 | 134 | Continuous Lane |
| 63 | SB US 321 at Clement Blvd / Clement Blvd Left-Over | EBR | 191 | 169 | Continuous Lane |
| | | NWL | 173 | 137 | 450 |
| | | SBR | 156 | 116 | Continuous Lane |
| 64 | NB US 321 at 9th Ave NW / Clement Blvd U-Turn | WBR | 273 | 287 | 250/ Continuous Lane |
| | | NBTR | 324 | 268 | 375 |
| | | SEL | 230 | 267 | 275 |
| 441 | Old Lenoir Rd / 12th Ave NW | EBL | 199 | 299 | 200 |
| | | SBL | 144 | 163 | Continuous Lane |
| | | SBR | 104 | 258 | 300 |

Two queues for 12th St Dr at Clement Blvd exceed the existing storage lengths. The westbound left and right queues exceed the storage by approximately 50 and 75 feet respectively. Additional storage would require realignment of the existing roadway and is not recommended for only an extra 75 feet.

One queue for Old Lenoir Rd at 12th Ave exceeds the existing storage lengths. The eastbound left queue exceeds the storage by approximately 100 feet. Additional storage would require realignment of the existing roadway and is not recommended for only an extra 100 feet.

None of the intersections present "excessive" queuing issues, defined by turning queue lengths of 200 feet in excess of the available storage bay. In general, the provided storage lengths adequately handle the queues with the exceptions noted above.

### 5.2.3 Grace Chapel Road

#### 5.2.3.1 Superstreet

A capacity analysis was performed for 2040 Build Alternative – Grace Chapel Road – Superstreet AM and PM peak periods for all of the study intersections. Intersection levels of service are summarized in **Table 9A**, and queue reports are summarized in **Table 9B**. Traffic volumes are shown in **Figure 15**. Levels of service and lane configurations are shown in **Figure 16**, and detailed Synchro and SimTraffic reports are located in **Appendix J**.

**Table 9A – 2040 Build Alternative – Grace Chapel Road Superstreet Intersection Level of Service**

| # | Intersection | Level of Service | |
|---|---|---|---|
| | | AM Peak | PM Peak |
| **91** | **US 321 at Grace Chapel Rd** | **B** | **B** |
| | Westbound Right | D | D |
| | Northbound Through | B | A |
| | Northbound Right | A | A |
| | Southeastbound Left | C | D |
| **92** | **SB US 321 at Grace Chapel Rd U-Turn** | **B** | **B** |
| | Northwestbound Left | D | C |
| | Southbound Through | B | A |
| **93** | **NB US 321 at Grace Chapel Rd U-Turn** | **-** | **-** |
| | Southeastbound Left | C | C |

Movements with zero delay were omitted

All three (3) intersections operate at LOS D or better in both peak hours.

| Table 9B – 2040 Build Alternative – Grace Chapel Road Superstreet Queueing and Recommended Storage | | | | | |
|---|---|---|---|---|---|
| # | Intersection | Movement | Queue (feet) | | Recommended Storage (feet) |
| | | | AM Peak | PM Peak | |
| **91** | **US 321 at Grace Chapel Rd** | WBR | 478 | 226 | 300/ Continuous Lane |
| | | SEL | 122 | 53 | 150 |
| **92** | **SB US 321 at Grace Chapel Rd U-Turn** | NWL | 144 | 133 | 200 |
| **93** | **NB US 321 at Grace Chapel Rd U-Turn** | SEL | 28 | 29 | 200 |

None of the intersections present "excessive" queuing issues, defined by turning queue lengths of 200 feet in excess of the available storage bay. In general, the provided storage lengths adequately handle the queues.

### 5.2.3.2 Reverse Superstreet

A capacity analysis was performed for 2040 Build Alternative – Grace Chapel Road – Reverse Superstreet AM and PM peak periods for all of the study intersections. Intersection levels of service are summarized in **Table 10A**, and queue reports are summarized in **Table 10B**. Traffic volumes are shown in **Figure 17**. Levels of service and lane configurations are shown in **Figure 18**, and detailed Synchro and SimTraffic reports are located in **Appendix K**.

**Table 10A – 2040 Build Alternative – Grace Chapel Road Reverse Superstreet Intersection Level of Service**

| # | Intersection | Level of Service | |
|---|---|---|---|
| | | AM Peak | PM Peak |
| **91** | **US 321 at Grace Chapel Rd** | **B** | **A** |
| | Westbound Left | D | E |
| | Westbound Right | D | D |
| | Northbound Through | A | A |
| | Northbound Right | A | A |
| | Southbound Through | B | A |
| **92** | **SB US 321 at Grace Chapel Rd U-Turn** | **-** | **-** |
| | Northwestbound Left | C | B |
| **93** | **NB US 321 at Grace Chapel Rd U-Turn** | **-** | **-** |
| | Eastbound Left | C | D |

Movements with zero delay were omitted

All three (3) intersections operate at LOS D or better in both peak hours.

| Table 10B – 2040 Build Alternative – Grace Chapel Road Reverse Superstreet Queueing and Recommended Storage | | | | | |
|---|---|---|---|---|---|
| # | Intersection | Movement | Queue (feet) | | Recommended Storage (feet) |
| | | | AM Peak | PM Peak | |
| 91 | US 321 at Grace Chapel Rd | WBL | 272 | 273 | 300 |
| | | WBR | 106 | 46 | Continuous Lane |
| | | NBR | - | - | 400 |
| 92 | SB US 321 at Grace Chapel Rd U-Turn | NWL | 22 | 23 | 200 |
| 93 | NB US 321 at Grace Chapel Rd U-Turn | EBL | 45 | 67 | 200 |

None of the intersections present "excessive" queuing issues, defined by turning queue lengths of 200 feet in excess of the available storage bay. In general, the provided storage lengths adequately handle the queues.

### 5.2.4 Dudley Shoals Road

#### 5.2.4.1 At-Grade Intersection

A capacity analysis was performed for 2040 Build Alternative – Dudley Shoals Road – At-Grade Intersection AM and PM peak periods for all of the study intersections. Intersection levels of service are summarized in **Table 11A**, and queue reports are summarized in **Table 11B**. Traffic volumes are shown in **Figures 19A** and **19B**. Levels of service and lane configurations are shown in **Figures 20A** and **20B**, and detailed Synchro and SimTraffic reports are located in **Appendix L**.

**Table 11A – 2040 Build Alternative – Dudley Shoals Road At-Grade Intersection Intersection Level of Service**

| # | Intersection | Level of Service | |
|---|---|---|---|
| | | AM Peak | PM Peak |
| **1** | **Dudley Shoals Rd at US 321 SB On-Ramp** | **-** | **-** |
| | Eastbound Left / Through | A | A |
| **2** | **Dudley Shoals Rd at Pinewood Rd** | **-** | **-** |
| | Eastbound Left / Right | C | C |
| | Northbound Left / Through | A | A |
| **7** | **US 321 SB at Dudley Shoals Rd On-Ramp** | **-** | **-** |
| | Eastbound Right | F | C |
| **131** | **NB US 321 at Pinewood Rd / Pinewood Rd Left-Over** | **C** | **B** |
| | Westbound Right | D | D |
| | Northbound Through | B | B |
| | Northbound Right | B | A |
| | Southeastbound U-Turn | D | D |
| | Southeastbound Left | B | C |
| **132** | **SB US 321 at Pinewood Rd U-Turn** | **A** | **A** |
| | Northwestbound Left | E | D |
| | Southbound Through | A | A |
| **133** | **SB US 321 at Pinewood Rd / Pinewood Rd Left-Over** | **B** | **B** |
| | Eastbound Right | D | D |
| | Northwestbound Left | D | C |
| | Southbound Through | A | A |
| | Southbound Right | A | A |

| Table 11A (Continued) – 2040 Build Alternative – Dudley Shoals Road At-Grade Intersection Intersection Level of Service | | | |
|---|---|---|---|
| # | Intersection | Level of Service | |
| | | AM Peak | PM Peak |
| **134** | **NB US 321 at Pinewood Rd U-Turn** | **B** | **C** |
| | Eastbound Left | D | E |
| | Northbound Through | A | C |
| **141** | **NB US 321 at Highland Ave / Highland Ave Left-Over** | **A** | **A** |
| | Westbound Right | D | D |
| | Northbound Through / Right | A | A |
| | Southeastbound Left | D | D |
| **142** | **SB US 321 at Highland Ave U-Turn** | **B** | **A** |
| | Northwestbound Left | D | C |
| | Southbound Through | B | A |
| **143** | **SB US 321 at Highland Ave / Highland Ave Left-Over** | **C** | **A** |
| | Eastbound Right | E | D |
| | Northwestbound Left | C | D |
| | Southbound Through / Right | C | A |

Movements with zero delay were omitted

Nine (9) of the ten (10) intersections operate at LOS C or better in both peak hours. The intersection of US 321 Southbound at the Dudley Shoals Road On-Ramp operates at LOS F in the AM peak hour, and LOS C in the PM peak hour, stemming from the minor side street turning movement.

| Table 11B – 2040 Build Alternative – Dudley Shoals Road At-Grade Intersection Queueing and Recommended Storage | | | | | |
|---|---|---|---|---|---|
| # | Intersection | Movement | Queue (feet) | | Recommended Storage (feet) |
| | | | AM Peak | PM Peak | |
| **131** | **NB US 321 at Pinewood Rd / Pinewood Rd Left-Over** | WBR | 159 | 139 | 200 |
| | | NBR | 62 | 28 | Continuous Lane |
| | | SEL | 176 | 156 | 225 |

**Table 11B (Continued) – 2040 Build Alternative – Dudley Shoals Road At-Grade Intersection Queueing and Recommended Storage**

| # | Intersection | Movement | Queue (feet) | | Recommended Storage (feet) |
|---|---|---|---|---|---|
| | | | AM Peak | PM Peak | |
| 132 | SB US 321 at Pinewood Rd U-Turn | NWL | 144 | 139 | 200 |
| 133 | SB US 321 at Pinewood Rd / Pinewood Rd Left-Over | EBR | 299 | 256 | 300/ Continuous Lane |
| | | NWL | 160 | 188 | 275 |
| | | SBR | 15 | 12 | Continuous Lane |
| 134 | NB US 321 at Pinewood Rd U-Turn | EBL | 156 | 265 | 300 |
| 141 | NB US 321 at Highland Ave / Highland Ave Left-Over | WBR | 188 | 72 | Continuous Lane |
| | | SEL | 45 | 44 | 100 |
| 142 | SB US 321 at Highland Ave U-Turn | NWL | 114 | 51 | 175 |
| 143 | SB US 321 at Highland Ave / Highland Ave Left-Over | EBR | 265 | 84 | Continuous Lane |
| | | NWL | 25 | 94 | 100 |

None of the intersections present "excessive" queuing issues, defined by turning queue lengths of 200 feet in excess of the available storage bay. In general, the provided storage lengths adequately handle the queues.

#### 5.2.4.2 Freeway Ramp

An analysis using a free flow ramp was also conducted at Dudley Shoals for 2040 Build Alternative. HCS results are summarized in **Table 12**, and traffic volumes are shown in **Figures 19A** and **19B**. Levels of service and lane configurations are shown in **Figure 21**, and detailed HCS reports are located in **Appendix M**.

**Table 12 – 2040 Build Alternative – Dudley Shoals Road Freeway Ramp HCS Level of Service**

| # | Segment | Level of Service or v/c Ratio | |
|---|---|---|---|
| | | AM Peak | PM Peak |
| **Freeway Merges** | | | |
| **204** | **US 321 SB – Ramp from Dudley Shoals Rd** | C | B |

The ramp operates at LOS C or better in both peak hours. This performs substantially better than stop control.

### 5.2.5 Lower Cedar Valley Road & Pine Mountain Road

A capacity analysis was performed for 2040 Build Alternative – Lower Cedar Valley Road & Pine Mountain Road AM and PM peak periods for all of the study intersections. Intersection levels of service are summarized in **Table 13A**, and queue reports are summarized in **Table 13B**. Traffic volumes are shown in **Figures 22A** and **22B**. Levels of service and lane configurations are shown in **Figure 23A** and **23B**, and detailed Synchro and SimTraffic reports are located in **Appendix N**.

**Table 13A – 2040 Build Alternative – Lower Cedar Valley Road & Pine Mountain Road Intersection Level of Service**

| # | Intersection | Level of Service | |
|---|---|---|---|
| | | AM Peak | PM Peak |
| **161** | **NB US 321 at Lower Cedar Valley Rd / Lower Cedar Valley Rd Left-Over** | **B** | **B** |
| | Westbound Right | D | D |
| | Northbound Through / Right | B | A |
| | Southeastbound U-Turn / Left | D | D |
| **162** | **SB US 321 at Lower Cedar Valley Rd U-Turn** | **B** | **A** |
| | Westbound Left | E | D |
| | Southbound Through | A | A |
| **163** | **SB US 321 at Lower Cedar Valley Rd / Lower Cedar Valley Rd Left-Over** | **A** | **B** |
| | Eastbound Right | D | D |
| | Northwestbound Left | D | C |
| | Southbound Through | A | A |
| | Southbound Right | A | A |
| **164** | **NB US 321 at Lower Cedar Valley Rd U-Turn** | **A** | **C** |
| | Eastbound Left | D | D |
| | Northbound Through | A | C |
| **171** | **NB US 321 at Quarry Estates Rd** | **-** | **-** |
| | Westbound Right | A | B |
| **172** | **SB US 321 at Quarry Estates Rd** | **-** | **-** |
| | Eastbound Right | B | A |

| Table 13A (Continued) – 2040 Build Alternative – Lower Cedar Valley Road & Pine Mountain Road Intersection Level of Service | | | |
|---|---|---|---|
| # | Intersection | Level of Service | |
| | | AM Peak | PM Peak |
| **181** | **NB US 321 at Pine Mountain Rd / Pine Mountain Rd Left-Over** | **B** | **B** |
| | Westbound Right | D | D |
| | Northbound Through | A | A |
| | Northbound Right | A | A |
| | Southeastbound Left | C | D |
| **182** | **SB US 321 at Pine Mountain Rd U-Turn** | **C** | **B** |
| | Westbound Left | D | C |
| | Southbound Through | C | B |
| **183** | **SB US 321 at Pine Mountain Rd / Pine Mountain Rd Left-Over** | **B** | **B** |
| | Eastbound Right | D | D |
| | Northwestbound Left | D | C |
| | Southbound Through | A | A |
| **184** | **NB US 321 at Pine Mountain Rd U-Turn** | **A** | **B** |
| | Eastbound Left | C | E |
| | Northbound Through | A | A |
| **185** | **Pine Mountain Rd at Ramp to Pine Mountain Road** | **-** | **-** |
| | Southbound Right | A | B |

Movements with zero delay were omitted

All eleven (11) intersections operate at LOS C or better in both peak hours. One U-turn movement at Lower Cedar Valley and Pinr Mountain Rd operate at LOS E in one peak hour, however the capacity is less than 0.85.

**Table 13B – 2040 Build Alternative – Lower Cedar Valley Road & Pine Mountain Road Queueing and Recommended Storage**

| # | Intersection | Movement | Queue (feet) | | Recommended Storage (feet) |
|---|---|---|---|---|---|
| | | | AM Peak | PM Peak | |
| 161 | NB US 321 at Lower Cedar Valley Rd / Lower Cedar Valley Rd Left-Over | WBR | 203 | 131 | 150/ Continuous Lane |
| | | SEL | 125 | 154 | 225 |
| 163 | SB US 321 at Lower Cedar Valley Rd / Lower Cedar Valley Rd Left-Over | EBR | 249 | 285 | 250/ Continuous Lane |
| | | NWL | 278 | 136 | 300 |
| | | SBR | 116 | 52 | Continuous Lane |
| 164 | NB US 321 at Lower Cedar Valley Rd U-Turn | EBL | 142 | 247 | 350 |
| 181 | NB US 321 at Pine Mountain Rd / Pine Mountain Rd Left-Over | WBR | 282 | 304 | 400/ Continuous Lane |
| | | NBR | 56 | 56 | 225 |
| | | SEL | 181 | 159 | 275 |
| 182 | SB US 321 at Pine Mountain Rd U-Turn | WBL | 247 | 199 | 350 |
| 183 | SB US 321 at Pine Mountain Rd / Pine Mountain Rd Left-Over | EBR | 255 | 194 | 200/ Continuous Lane |
| | | NWL | 116 | 138 | 225 |
| 184 | NB US 321 at Pine Mountain Rd U-Turn | EBL | 182 | 202 | 250 |

None of the intersections present “excessive” queuing issues, defined by turning queue lengths of 200 feet in excess of the available storage bay. In general, the provided storage lengths adequately handle the queues.

### 5.2.6 Mount Herman Road & Caldwell Community College and Technical Institute

A capacity analysis will be performed for 2040 Build Alternative – Mount Herman Road & Caldwell Community College and Technical Institute (CCCTI) AM and PM peak periods for all of the study intersections. At present, a plan is being developed that will alter the internal circulation and the driveways at CCCTI. Once this plan is complete, the analysis along US 321 can be completed.

### 5.2.7 MDI Simulation Analysis

A capacity analysis was performed for 2040 Build Alternative – to determine travel time reductions for implementing a superstreet for Merchants Distributors Incorporated (MDI). Intersection levels of service are summarized in **Table 15A**, and queue reports are summarized in **Table 15B**. Traffic volumes are shown in **Figure 24A, 24B, 24C, 24D,** and **24E**. Levels of service and lane configurations are shown in **Figure 25A, 25B, 25C, 25D, and 25E**, and detailed Synchro, SimTraffic, and HCS reports are located in **Appendix P**.

**Table 15A – 2040 Build Alternative – MDI Simulation Analysis Intersection Level of Service**

| # | Intersection | Level of Service | |
|---|---|---|---|
| | | AM Peak | PM Peak |
| **11** | **US 321 at 13th St SW** | - | - |
| | Eastbound Right | F | D |
| | Westbound Right | F | F |
| **21** | **SB US 321 at Main Ave Dr NW** | - | - |
| | Eastbound Right | D | D |
| **31** | **NB US 321 at 2nd Ave NW / 2nd Ave NW Left-Over** | **B** | **B** |
| | Westbound Right | D | D |
| | Northbound Through | A | A |
| | Northbound Right | A | A |
| | Southeastbound Left | D | C |
| **32** | **SB US 321 at 2nd Ave NW U-Turn** | **B** | **A** |
| | Northwestbound Left | D | D |
| | Southbound Through | A | A |
| **33** | **SB US 321 at 2nd Ave NW / 2nd Ave NW Left-Over** | **B** | **B** |
| | Eastbound Right | D | D |
| | Northwestbound Left | D | C |
| | Southbound Through | A | A |
| | Southbound Right | A | A |
| **34** | **NB US 321 at 2nd Ave NW U-Turn** | **B** | **D** |
| | Northbound Through | B | C |
| | Southeastbound Left | D | E |

| Table 15A (Continued) – 2040 Build Alternative – MDI Simulation Analysis Intersection Level of Service | | | |
|---|---|---|---|
| # | Intersection | Level of Service | |
| | | AM Peak | PM Peak |
| **43** | **SB US 321 at 7th Ave NW / 7th Ave NW Left-Over** | **B** | **B** |
| | Eastbound Right | D | D |
| | Northwestbound Left | D | B |
| | Southbound Through | A | B |
| | Southbound Right | A | A |
| **44** | **SB US 321 at 7th Ave NW U-Turn** | **A** | **B** |
| | Northbound Through | A | A |
| | Southeastbound Left | C | D |
| **61** | **NB US 321 at Clement Blvd / Clement Blvd Left-Over** | **B** | **C** |
| | Westbound Right | C | D |
| | Northbound Through | A | B |
| | Northbound Right | B | A |
| | Southeastbound Left | B | C |
| **62** | **SB US 321 at 13th Ave Dr NW / Clement Blvd U-Turn** | **B** | **B** |
| | Eastbound Right | A | A |
| | Westbound Left | D | D |
| | Southbound Through / Right | B | A |
| **63** | **SB US 321 at Clement Blvd / Clement Blvd Left-Over** | **B** | **B** |
| | Eastbound Right | E | D |
| | Northwestbound U-Turn | D | D |
| | Northwestbound Left | D | D |
| | Southbound Through / Right | A | B |
| **64** | **NB US 321 at 9th Ave NW / Clement Blvd U-Turn** | **B** | **C** |
| | Westbound Right | D | D |
| | Northbound Through / Right | B | B |
| | Southeastbound Left / U-Turn | D | D |
| **81** | **NB US 321 at 15th Ave NW** | **A** | **A** |
| | Westbound Right | C | D |
| | Northbound Through / Right | A | A |
| | Southeastbound Left | D | D |

| Table 15A (Continued) – 2040 Build Alternative – MDI Simulation Analysis Intersection Level of Service | | | |
|---|---|---|---|
| # | Intersection | Level of Service | |
| | | AM Peak | PM Peak |
| **82** | **SB US 321 at 15th Avenue NW U-Turn** | **-** | **-** |
| | Westbound Left | D | C |
| **83** | **SB US 321 at 15th Avenue NW / 20th Avenue NW** | - | - |
| | Eastbound Right | D | C |
| | Northwestbound Left | F | F |
| **84** | **NB US 321 at 15th Avenue NW U-Turn** | **-** | **-** |
| | Eastbound Left | C | D |
| **91** | **US 321 at Grace Chapel Rd** | **B** | **A** |
| | Westbound Left | D | D |
| | Westbound Right | C | D |
| | Northbound Through | A | A |
| | Northbound Right | A | A |
| | Southbound Through | B | A |
| **92** | **SB US 321 at Grace Chapel U-Turn** | **-** | **-** |
| | Westbound Left | C | B |
| **93** | **NB US 321 at Grace Chapel U-Turn** | **-** | **-** |
| | Eastbound Left | C | D |
| **101** | **NB US 321 at Alex Lee Blvd / Alex Lee Left-Over** | **A** | **A** |
| | Westbound Right | D | D |
| | Northbound Through | A | A |
| | Northbound Right | A | A |
| | Southeastbound Left | C | D |
| **102** | **SB US 321 at Alex Lee Blvd U-Turn** | - | - |
| | Northwestbound Left | F | E |
| **103** | **SB US 321 at Alex Lee Blvd / Alex Lee Left-Over** | - | - |
| | Eastbound Right | D | C |
| | Southbound Right | - | - |
| | Northwestbound Left | F | F |
| **104** | **NB US 321 at Alex Lee Blvd U-Turn** | - | **-** |
| | Eastbound Left | B | C |

| Table 15A (Continued) – 2040 Build Alternative – MDI Simulation Analysis Intersection Level of Service | | | |
|---|---|---|---|
| # | Intersection | Level of Service | |
| | | AM Peak | PM Peak |
| **121** | **NB US321 at River Bend Dr / River Bend Dr Left-Over** | **B** | **C** |
| | Westbound Right | C | E |
| | Northbound Through | B | C |
| | Northbound Right | A | A |
| | Southeastbound Left | B | C |
| **122** | **SB US 321 and River Bend Dr U-Turn** | **B** | **B** |
| | Westbound Left | C | C |
| | Southbound Through | B | A |
| **123** | **SB US 321 at US 321A / US 321A Left-Over** | **B** | **A** |
| | Eastbound Right | E | D |
| | Northwestbound Left | C | D |
| | Southbound Through | B | A |
| | Southbound Right | A | A |
| **124** | **NB US 321 at US 321A U-Turn** | **-** | **-** |
| | Eastbound Left | D | F |

22 of the 26 intersections operate at LOS D or better in both peak hours. The intersections at LOS E or F are all unsignalized intersections with volumes that would not warrant a traffic signal.

The Southbound U-turn for MDI was not signalized in the analysis due to the inadequate volume to warrant a traffic signal (<100 Vehicles per hour). It may however be necessary to install a signal for safety reasons due to the large number of trucks making the U-turn, and to provide gaps in traffic during peak hours so that the trucks are able to make the U-turn in a reasonable time frame.

| Table 15B – 2040 Build Alternative – MDI Simulation Analysis Queueing and Recommended Storage | | | | | |
|---|---|---|---|---|---|
| # | Intersection | Movement | Queue (feet) | | Recommended Storage (feet) |
| | | | AM Peak | PM Peak | |
| 31 | NB US 321 at 2nd Ave NW / 2nd Ave NW Left-Over | WBR | 202 | 228 | Continuous |
| | | NBR | 96 | 69 | Continuous |
| | | SEL | 143 | 115 | 400 |
| 32 | SB US 321 at 2nd Ave NW U-Turn | NWL | 206 | 229 | 450 |
| 33 | SB US 321 at 2nd Ave NW / 2nd Ave NW Left-Over | EBR | 232 | 251 | Continuous |
| | | NWL | 224 | 116 | 650 |
| | | SBR | 117 | 124 | Continuous |
| 34 | NB US 321 at 2nd Ave NW U-Turn | SEL | 227 | 325 | 350 |
| 43 | SB US 321 at 7th Ave NW / 7th Ave NW Left-Over | EBR | 208 | 340 | Continuous |
| | | NWL | 195 | 78 | 200 |
| | | SBR | 102 | 72 | Continuous |
| 44 | SB US 321 at 7th Ave NW U-Turn | SEL | 71 | 177 | 350 |
| 61 | NB US 321 at Clement Blvd / Clement Blvd Left-Over | WBR | 351 | 473 | Continuous |
| | | NBR | 133 | 137 | 475 |
| | | SEL | 238 | 244 | 525 |
| 62 | SB US 321 at 13th Ave Dr NW / Clement Blvd U-Turn | EBR | 8 | - | Continuous |
| | | NWL | 184 | 128 | 350 |
| 63 | SB US 321 at Clement Blvd / Clement Blvd Left-Over | EBR | 191 | 210 | Continuous |
| | | NWL | 76 | 78 | 475 |
| 64 | NB US 321 at 9th Ave NW / Clement Blvd U-Turn | WBR | 167 | 149 | Continuous |
| | | NBTR | 244 | 460 | 375 |
| | | SEL | 161 | 295 | 300 |
| 81 | NB US 321 at 15th Ave NW | WBR | 93 | 162 | Continuous |
| | | SEL | 161 | 85 | 625 |
| 82 | SB US 321 at 15th Ave NW U-Turn | NWL | 53 | 46 | 250 |
| 83 | SB US 321 at 15th Ave NW / 20th Avenue NW | EBR | 106 | 79 | Continuous |
| | | NWL | 103 | 52 | 300 |
| 84 | NB US 321 at 15th Ave NW U-Turn | SEL | 41 | 78 | 300 |

**Table 15B (Continued) – 2040 Build Alternative – MDI Simulation Analysis Queueing and Recommended Storage**

| # | Intersection | Movement | Queue (feet) | | Recommended Storage (feet) |
|---|---|---|---|---|---|
| | | | AM Peak | PM Peak | |
| 91 | US 321 at Grace Chapel Rd | WBL | 246 | 171 | 500/Continuous |
| | | WBR | 58 | 45 | 500/Continuous |
| | | NBR | - | - | 550 |
| 92 | SB US 321 at Grace Chapel Rd U-Turn | NWL | 21 | 21 | 250 |
| 93 | NB US 321 at Grace Chapel Rd U-Turn | SEL | 47 | 80 | 450 |
| 101 | NB US 321 at Alex Lee Blvd / Alex Lee Left-Over | WBR | 186 | 146 | Continuous |
| | | NBR | 60 | 71 | Continuous |
| | | SEL | 46 | 79 | 475 |
| 102 | SB US 321 at Alex Lee Blvd U-Turn | NWL | 375 | 77 | 400 |
| 103 | SB US 321 at Alex Lee Blvd / Alex Lee Left-Over | EBR | 22 | 60 | Continuous |
| | | SBR | 2 | - | 175 |
| | | NWL | 116 | 22 | 350 |
| 104 | NB US 321 at Alex Lee Blvd U-Turn | SEL | 26 | 31 | 300 |
| 121 | NB US321 at River Bend Dr / River Bend Dr Left-Over | WBR | 334 | 414 | Continuous |
| | | NBR | 173 | 178 | Continuous |
| | | SEL | 102 | 391 | 575 |
| 122 | SB US 321 and River Bend Dr U-Turn | WBL | 511 | 326 | 575 |
| 123 | SB US 321 at US 321A / US 321A Left-Over | EBR | 233 | 219 | Continuous |
| | | NWL | 133 | 133 | 600 |
| | | SBR | 80 | 104 | Continuous |
| 124 | Northbound US 321 at US 321A U-Turn | EBL | 234 | 342 | 300 |

None of the intersections present "excessive" queuing issues, defined by turning queue lengths of 200 feet in excess of the available storage bay. In general, the provided storage lengths adequately handle the queues.

The average travel time per vehicle in the simulation is 6.4 minutes in the AM and PM peak periods. The average travel distance per vehicle is 3 miles with an average speed of 29 mph in the AM and 28 mph in the PM. This is a 18% reduction in travel time and 39% increase in travel speed.

| Table 15C – 2040 Network Delay Analysis (No Build vs. Superstreet Build) | | | | | | |
|---|---|---|---|---|---|---|
| | AM Peak | | | PM Peak | | |
| | No Build | Superstreet Build | % Change | No Build | Superstreet Build | % Change |
| Vehicles Exited (veh / hr) | 9,280 | 7,590 | -18.21% | 9,152 | 7,567 | -17.32% |
| Vehicles Entered (veh / hr) | 9,480 | 7,743 | -18.32% | 9,449 | 7,823 | -17.21% |
| | | | | | | |
| Travel Distance (mi) | 19,809 | 23,314 | 17.69% | 19,394 | 23,078 | 19.00% |
| Travel Time (hr) | 1,089.5 | 819.5 | **-24.78%** | 1,121.9 | 823.7 | **-26.58%** |
| Average Speed (mph) | 21 | 29 | **38.10%** | 20 | 28 | **40.00%** |
| Total Delay (hr) | 652.6 | 296.8 | **-54.52%** | 562.3 | 303.0 | **-46.11%** |
| Total Stops | 19,136 | 16,664 | -12.92% | 23,477 | 16,346 | **-30.37%** |
| Fuel Usage (gal) | 806.5 | 843.0 | 4.53% | 792.8 | 833.9 | 5.18% |
| | | | | | | |
| Per Veh. Distance (mi) | 2.1 | 3.0 | **44.00%** | 2.1 | 3.0 | **43.83%** |
| Per Veh. Time (min) | 7.0 | 6.4 | -7.97% | 7.2 | 6.4 | -11.26% |
| Per Veh. Delay (min) | 3.0 | 2.1 | **-29.34%** | 3.3 | 2.2 | **-34.54%** |
| Per Veh. Stops | 1.9 | 2.0 | 6.45% | 2.3 | 1.9 | -16.09% |
| Per Veh. Fuel (gal) | 0.09 | 0.11 | 27.89% | 0.09 | 0.11 | 27.13% |

The total number of vehicles drops 18% for the build condition, however, the overall travel distance goes up 18% as well. Travel time drops significantly as does total delay. Travel Speed also goes up significantly. Total stops decrease as well.

The change in the number of vehicles is likely the result of the superstreet configuration that enables more options to balance flows instead of making vehicles disappear and appear at points due to imbalances. The change in the travel distance is partly the result of the relocation of traffic from 15$^{th}$ Ave NW to Clement Blvd, which extends the distance some cars travel on the network by about ½ mile, as well as the extra distance that some left turners must travel to utilize the proposed U-turns.

Distance per vehicle rises by 44%, with travel time dropping by 10%. Delay time per vehicle drops by 32% and stops per vehicle drop by 5%. Fuel usage per vehicle climbs by 27%, but it must be remembered that vehicles are traveling much farther than previously.

Overall, travel speed goes up, and travel time and delay go down.

# 6.0 CONCLUSIONS & RECOMMENDATIONS

Sections 6.1 through 6.2.7 summarize the findings and recommendations of the capacity and queuing analyses.

## 6.1 2040 No-Build Alternative

Eight (8) out of the twelve (12) intersections operate at LOS D or better in both peak hours. The intersections of US 321 at 13th Ave Dr NW, and US 321 at 15th Ave NW/20th Ave NW operate at LOS F in one peak hour, and LOS C in one peak hour. The intersections of US 321 at 2nd Ave NW, and US 321 at Clement Blvd operate at LOS E in both peak hours.

The average travel time per vehicle in the simulation is 7 minutes in the AM peak period and 7.2 minutes in the PM peak period. The average travel distance per vehicle is 2.1 miles with an average speed of 21 mph in the AM and 20 mph in the PM.

## 6.2 2040 Build Alternative

### 6.2.1 13th Street

#### 6.2.1.1 One-Way Split Partial Cloverleaf Interchange

All five (5) intersections operate at LOS C or better in both peak hours.

All four (4) ramps operate at LOS C or better in both peak hours.

None of the intersections present “excessive” queuing issues, defined by turning queue lengths of 200 feet in excess of the available storage bay. In general, the provided storage lengths adequately handle the queues.

#### 6.2.1.2 Partial Cloverleaf Interchange

All nine (9) intersections operate at LOS C or better in both peak hours.

All four (4) ramps operate at LOS C or better in both peak hours.

None of the intersections present “excessive” queuing issues, defined by turning queue lengths of 200 feet in excess of the available storage bay. In general, the provided storage lengths adequately handle the queues.

#### 6.2.1.3 Two-Way Partial Cloverleaf Interchange

All nine (9) intersections operate at LOS B or better in both peak hours.

All four (4) ramps operate at LOS C or better in both peak hours.

None of the intersections present "excessive" queuing issues, defined by turning queue lengths of 200 feet in excess of the available storage bay. In general, the provided storage lengths adequately handle the queues.

#### 6.2.1.4 Two-Way Split Partial Cloverleaf Interchange

Five (5) of the six (6) intersections operate at LOS C or better in both peak hours. The intersection of 13th St SW at 2nd Ave SW operates at LOS F in the AM peak hour, and LOS D in the PM peak hour, stemming from the minor side street turning movement. From the projected traffic volumes, it is not expected to warrant a traffic signal.

All four (4) ramps operate at LOS C or better in both peak hours.

None of the intersections present "excessive" queuing issues, defined by turning queue lengths of 200 feet in excess of the available storage bay. In general, the provided storage lengths adequately handle the queues.

Of the four alternatives analyzed, all four would satisfy the projected traffic demand and the first three operate acceptably at all locations analyzed.

### 6.2.2 Clement Boulevard

#### 6.2.2.1 Partial Cloverleaf Interchange

All four (4) intersections operate at LOS C or better in both peak hours.

All four (4) ramps operate at LOS D or better in both peak hours.

None of the intersections present "excessive" queuing issues, defined by turning queue lengths of 200 feet in excess of the available storage bay. In general, the provided storage lengths adequately handle the queues.

#### 6.2.2.2 Superstreet

All eight (8) intersections operate at LOS C or better in both peak hours.

None of the intersections present "excessive" queuing issues, defined by turning queue lengths of 200 feet in excess of the available storage bay. In general, the provided storage lengths adequately handle the queues.

The interchange option would concentrate traffic east heading into town onto Clement Blvd and provide for a grade separation of the railroad. The superstreet would split the traffic to 15th Ave NW and Clement Blvd as it is at present for traffic heading east into town and keep the three closely spaced traffic signals and the rail crossing within 900ft. The superstreet would leave much of the recent construction along Clement Blvd while the interchange would require replacement. Either option would provide the needed capacity and operate acceptably for the 2040 projected traffic volumes.

### 6.2.3 Grace Chapel Road

#### 6.2.3.1 Superstreet

All three (3) intersections operate at LOS D or better in both peak hours.

None of the intersections present "excessive" queuing issues, defined by turning queue lengths of 200 feet in excess of the available storage bay. In general, the provided storage lengths adequately handle the queues.

#### 6.2.3.2 Reverse Superstreet

All three (3) intersections operate at LOS D or better in both peak hours.

None of the intersections present "excessive" queuing issues, defined by turning queue lengths of 200 feet in excess of the available storage bay. In general, the provided storage lengths adequately handle the queues.

Both alternatives would function acceptably. The superstreet would require hundreds more U-turns on US 321 in the peak hour than the reverse superstreet.

### 6.2.4 Dudley Shoals Road

#### 6.2.4.1 At-Grade Intersection

Nine (9) of the ten (10) intersections operate at LOS C or better in both peak hours. The intersection of US 321 Southbound at the Dudley Shoals Road On-Ramp operates at LOS F in the AM peak hour, and LOS C in the PM peak hour, stemming from the minor side street turning movement.

None of the intersections present "excessive" queuing issues, defined by turning queue lengths of 200 feet in excess of the available storage bay. In general, the provided storage lengths adequately handle the queues.

#### 6.2.4.2 Freeway Ramp

The ramp operates at LOS C or better in both peak hours.

Both alternatives are expected to provide relief to the Pinewood Rd intersection. The free flow ramp is expected to perform better than a stop controlled intersection at Dudley Shoals Rd. It, however, would be necessary to provide sufficient merge distance along US 321.

### 6.2.5 Lower Cedar Valley Road & Pine Mountain Road

Nine (9) of the eleven (11) intersections operate at LOS C or better in both peak hours. The intersections of US 321 Northbound at Quarry Estates Road, and US 321 Southbound at Quarry Estates Road operate at LOS E in one peak hour, and LOS D in one peak hour, stemming from the minor side street turning movement at locations that would not warrant a traffic signal.

None of the intersections present "excessive" queuing issues, defined by turning queue lengths of 200 feet in excess of the available storage bay. In general, the provided storage lengths adequately handle the queues.

### 6.2.6 Mount Herman Road & Caldwell Community College and Technical Institute

At present, a plan is being developed that will alter the internal circulation and the driveways at CCCTI. Once this plan is complete, the analysis along US 321 can be completed.

### 6.2.7 MDI Simulation Analysis

The average travel time per vehicle in the simulation is 6.4 minutes in the AM and PM peak periods. The average travel distance per vehicle is 3 miles with an average speed of 29 mph in the AM and 28 mph in the PM. This is a 18% reduction in travel time and 39% increase in travel speed.

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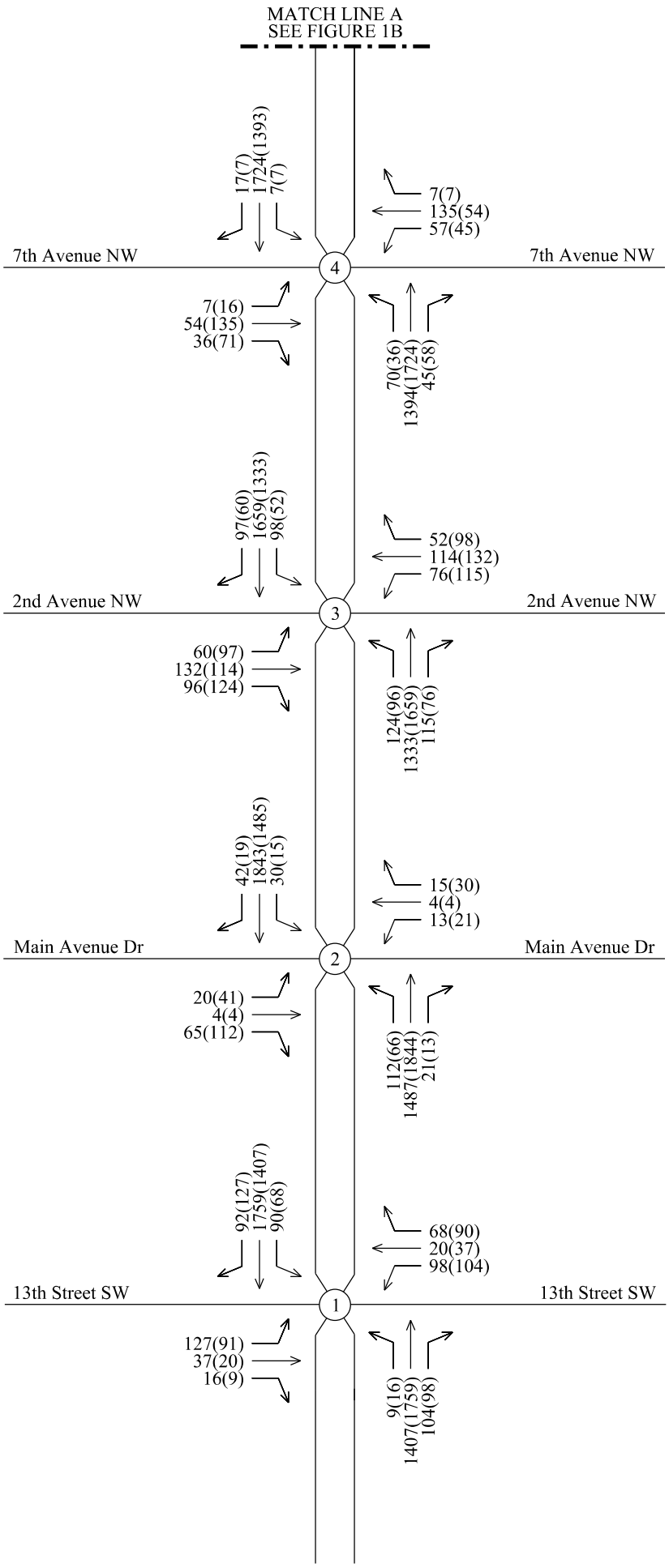
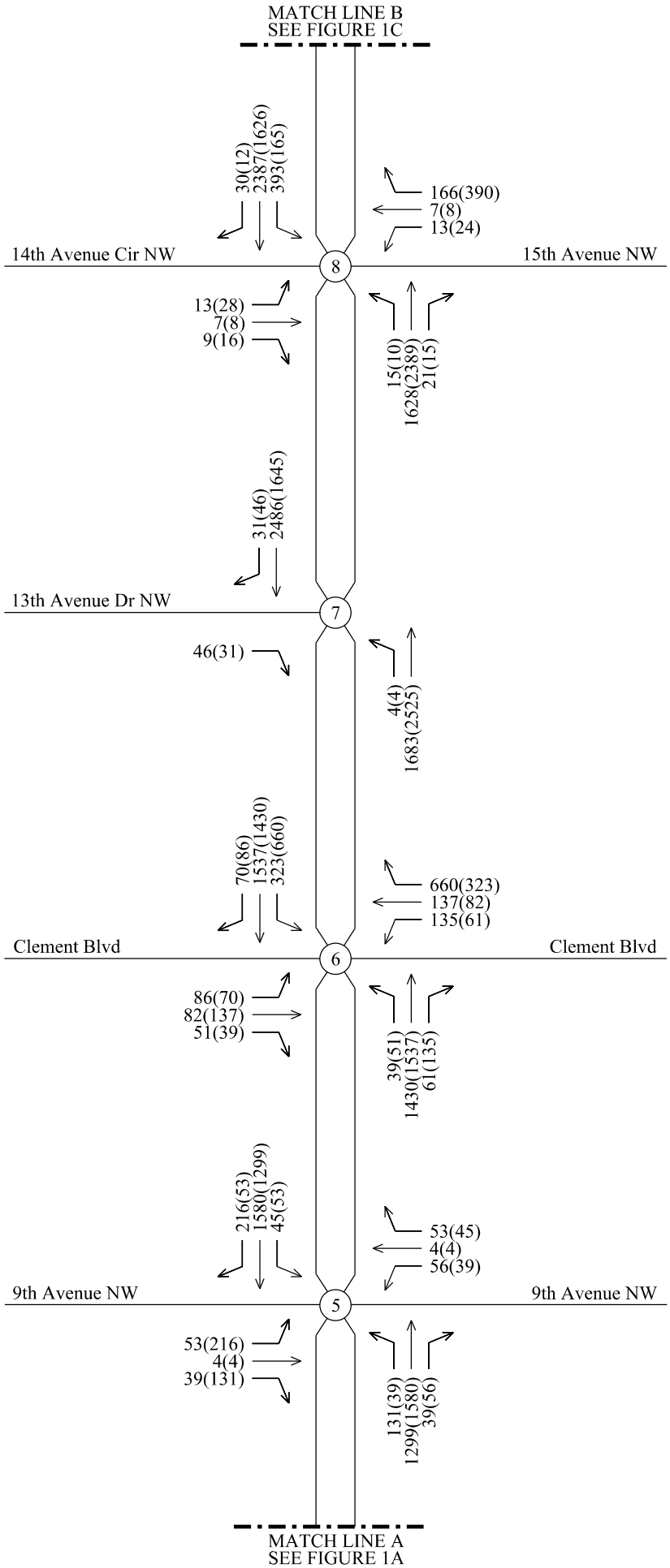



## 2040 No Build
## Peak Hour Volumes
## Figure 1A

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

AECOM




# 2040 No Build
# Peak Hour Volumes
# Figure 1B

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

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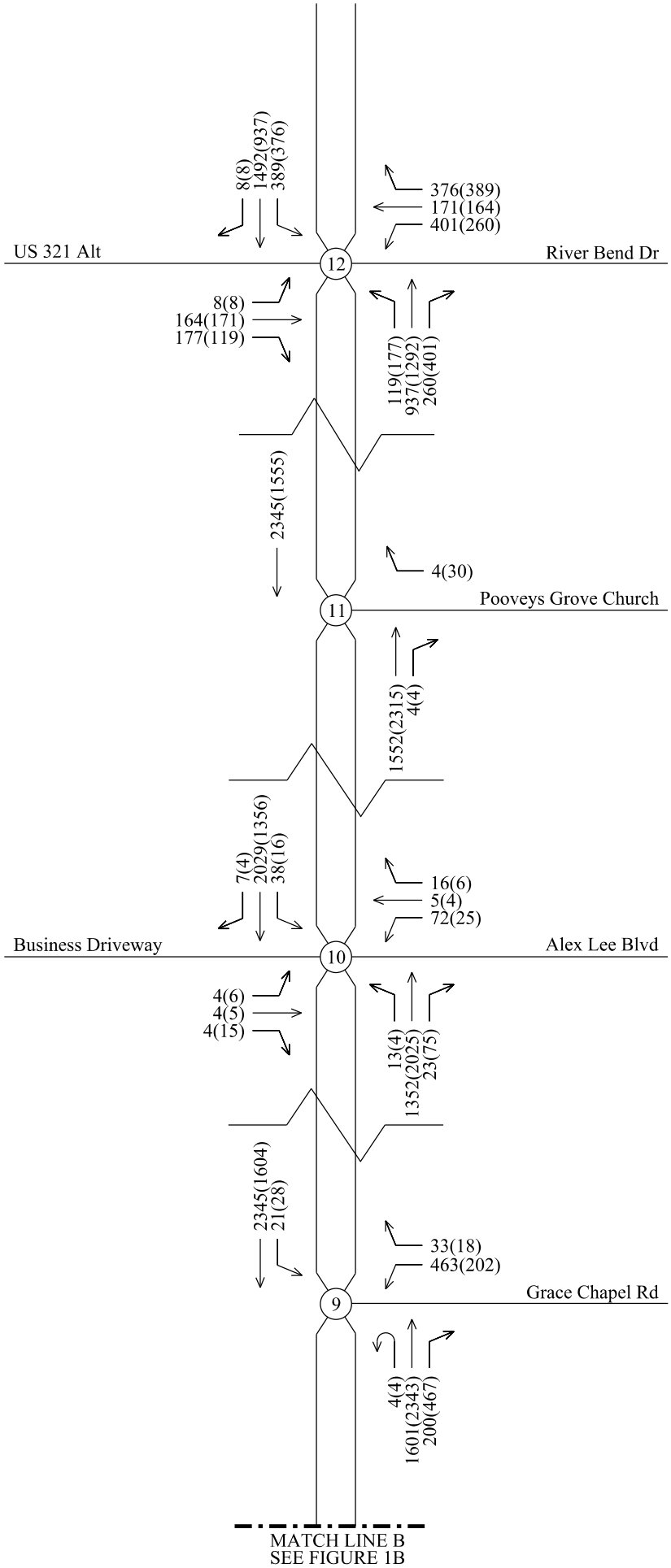
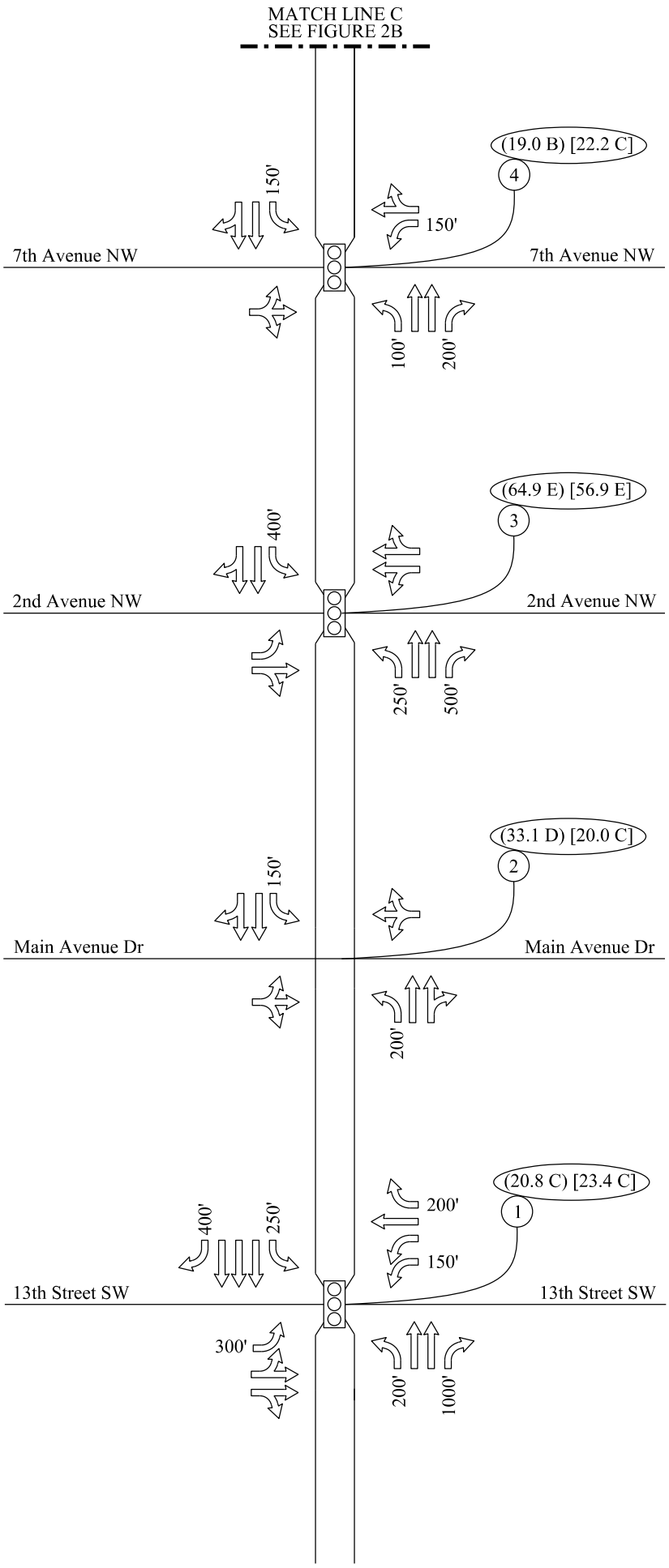



2040 No Build
Peak Hour Volumes
Figure 1C

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

AECOM




## 2040 No Build
## LOS and Laneage
## Figure 2A

- Existing Laneage
- Recommended Laneage
- ## — Intersection or HCS Number
- (## X)[## X] — Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Proposed Signal
- (##)[##] — HCS AM Peak and PM Peak LOS or v/c Ratio
- Ramp Merge/Diverge
- ###' — Storage

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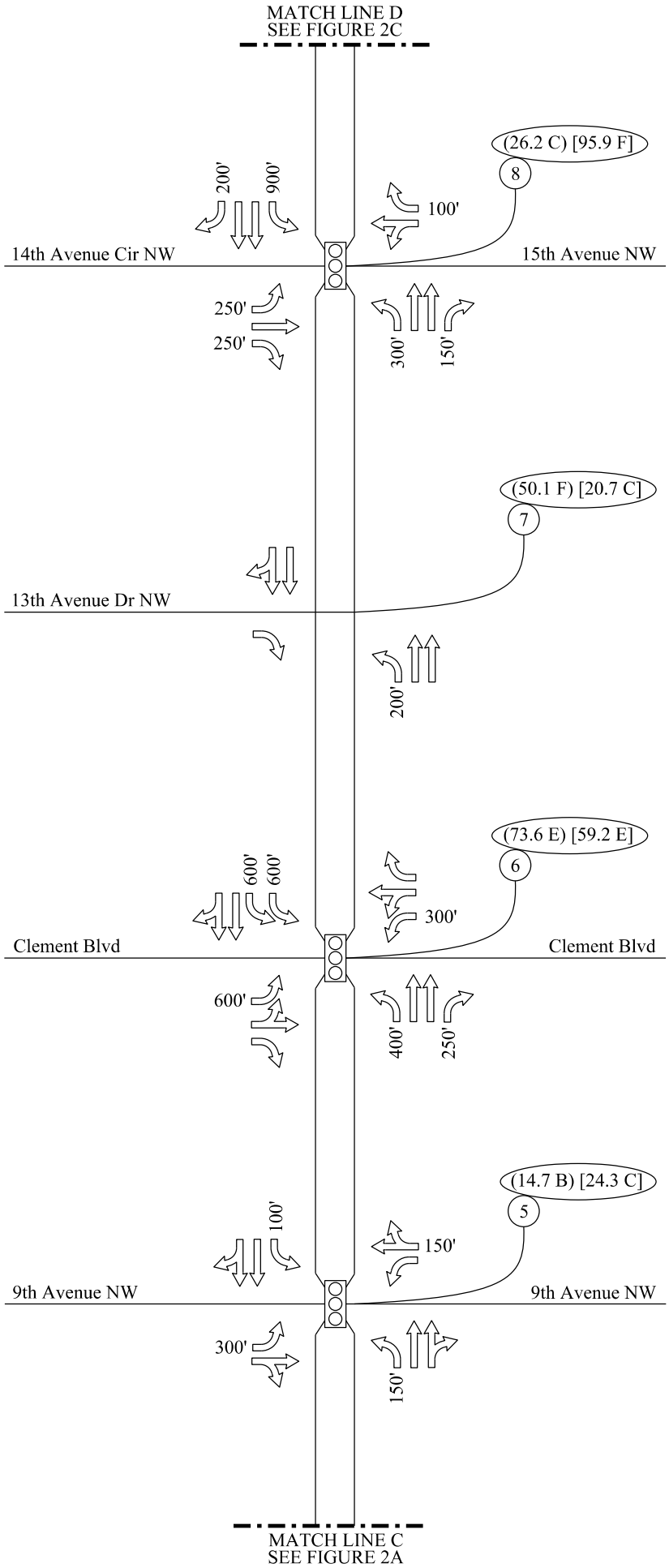
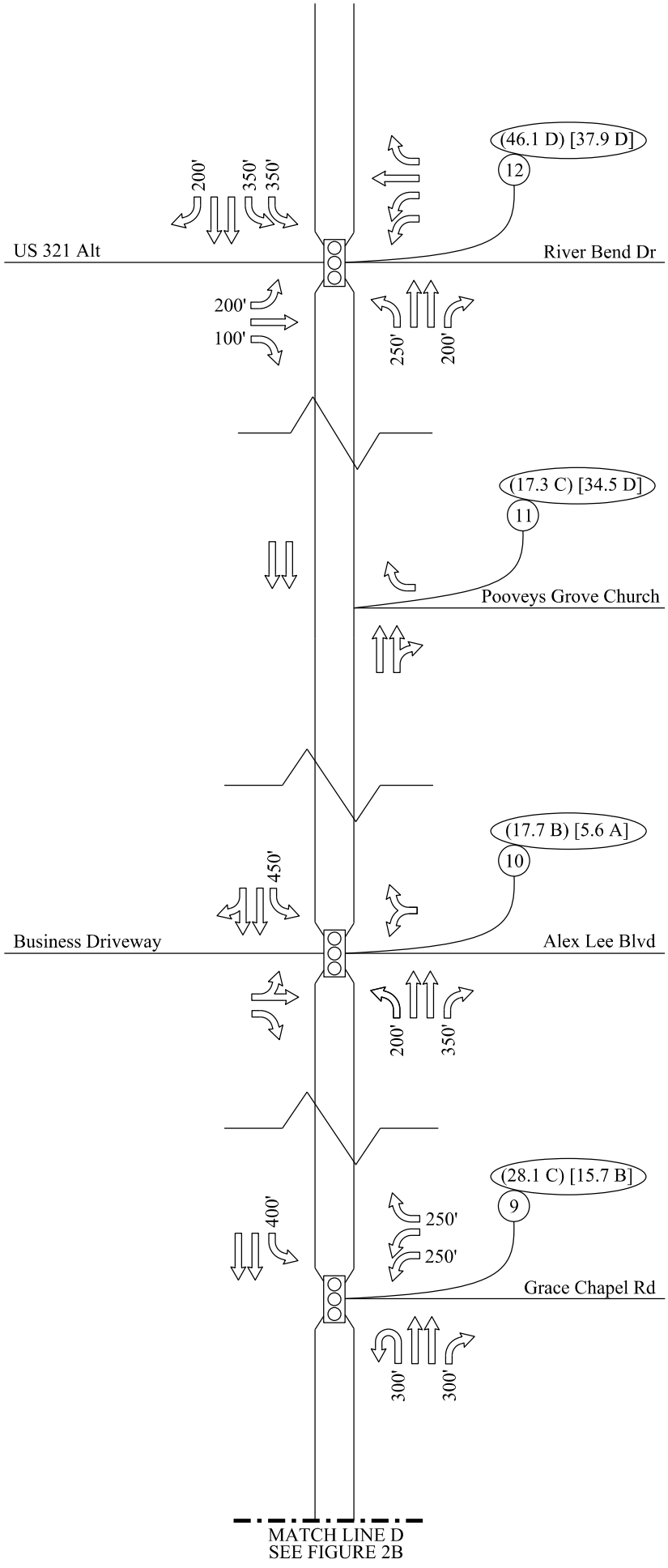



# 2040 No Build
# LOS and Laneage
# Figure 2B

- Existing Laneage
- Recommended Laneage
- (##) Intersection or HCS Number
- (## X)[## X] Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Proposed Signal
- (##)[##] HCS AM Peak and PM Peak LOS or v/c Ratio
- Ramp Merge/Diverge
- ###' Storage

AECOM




N

2040 No Build
LOS and Laneage
Figure 2C

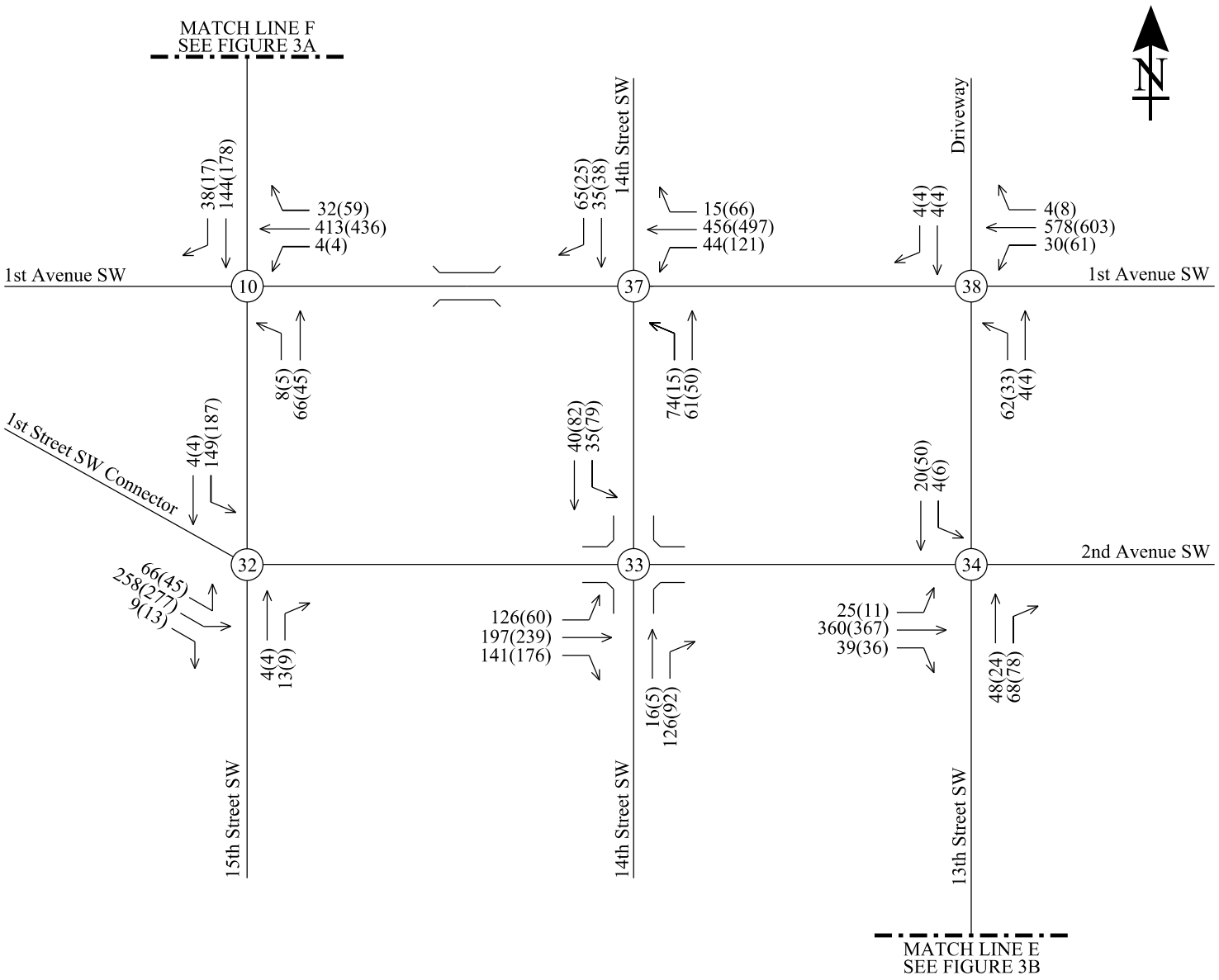
- Existing Laneage
- Recommended Laneage
- (##) Intersection or HCS Number
- (## X)[## X] Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Proposed Signal
- (##)[##] HCS AM Peak and PM Peak LOS or v/c Ratio
- Ramp Merge/Diverge
- ###' Storage

AECOM

2040 Build - 13th Street Interchange
One-Way Split Partial Cloverleaf
Peak Hour Volumes
Figure 3A

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

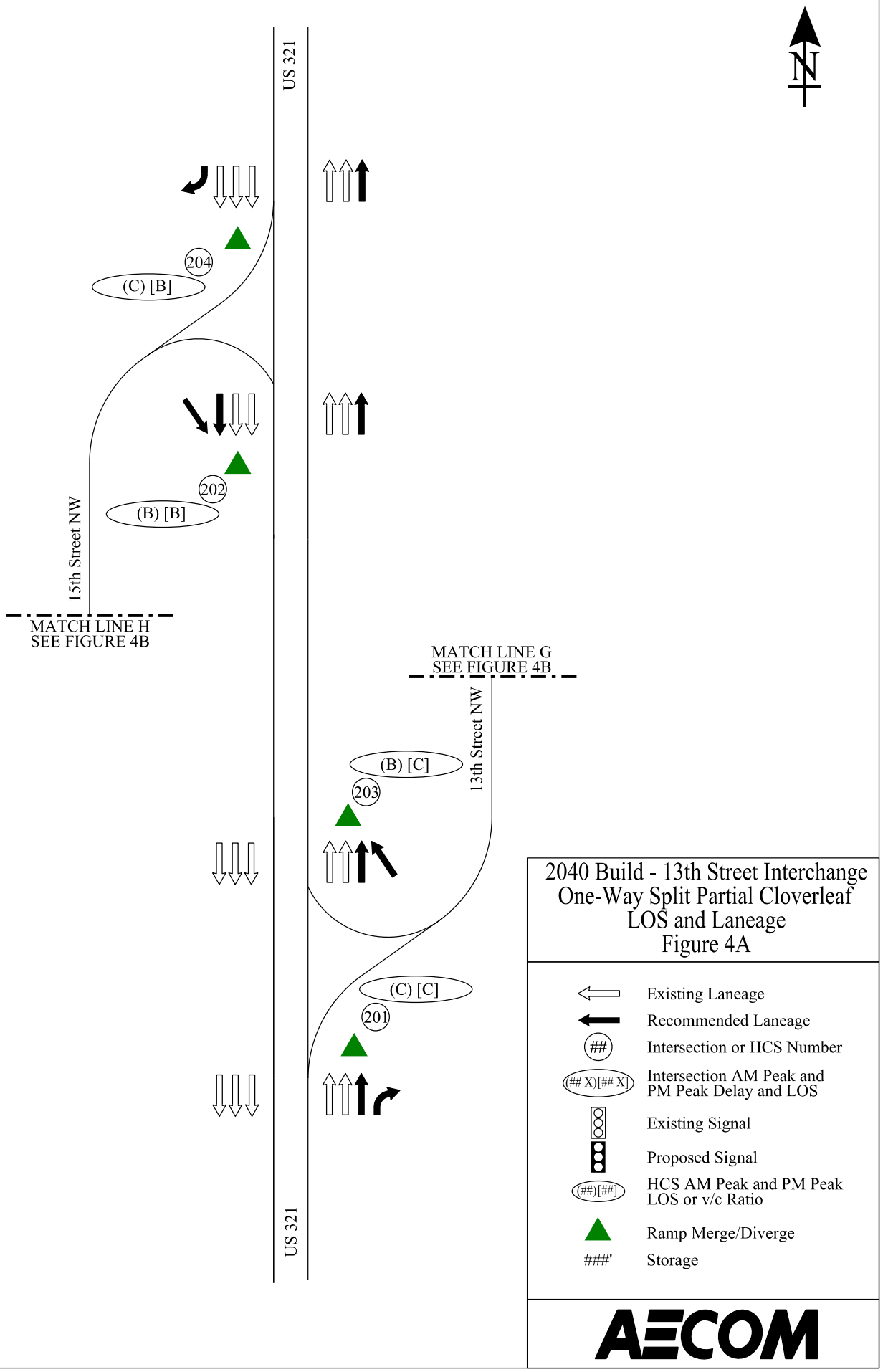
AECOM

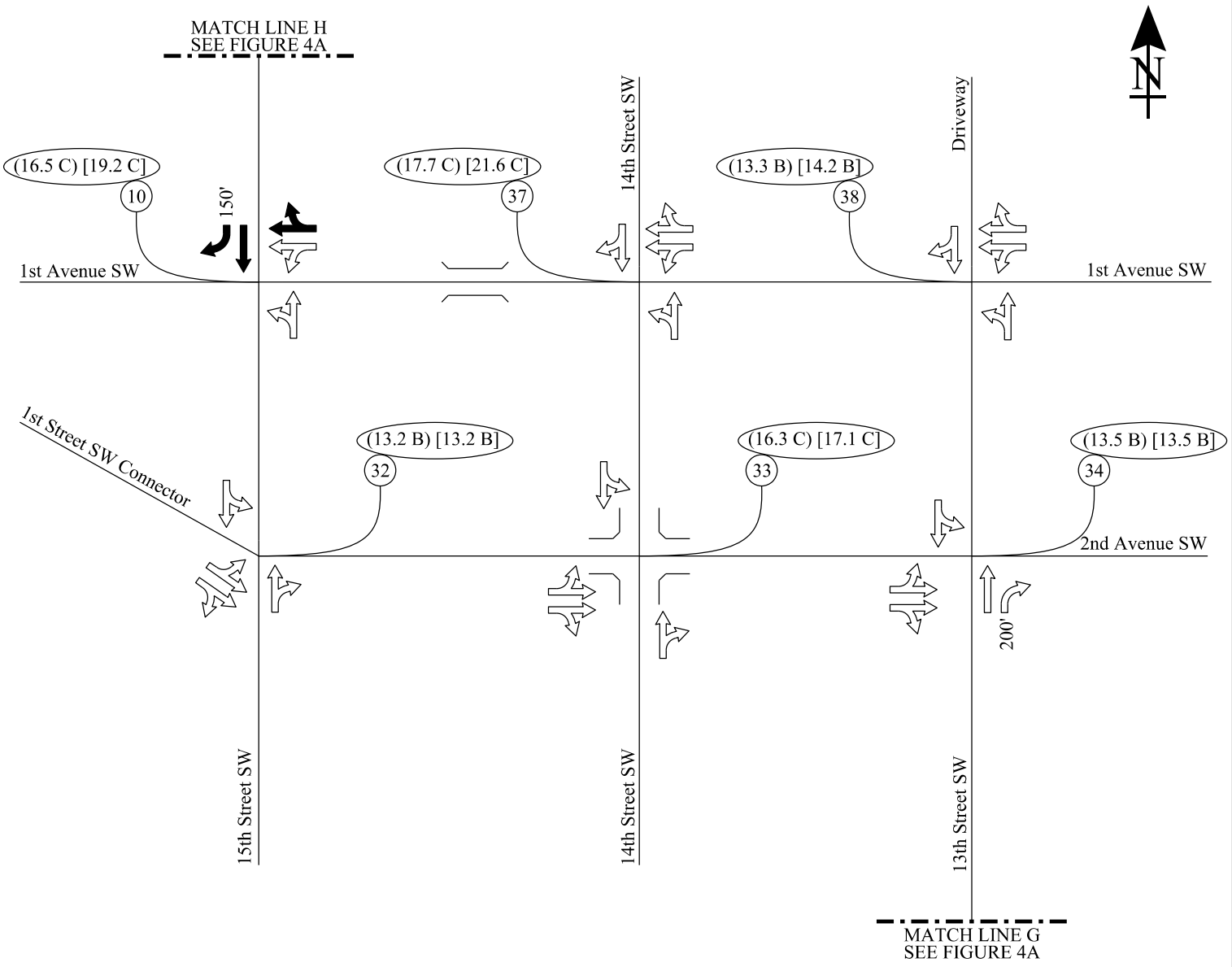



## 2040 Build - 13th Street Interchange
## One-Way Split Partial Cloverleaf
## Peak Hour Volumes
## Figure 3B

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

AECOM


N
US 321
204
(C) [B]
202
(B) [B]
15th Street NW
MATCH LINE H
SEE FIGURE 4B
MATCH LINE G
SEE FIGURE 4B
13th Street NW
(B) [C]
203
(C) [C]
201
US 321
2040 Build - 13th Street Interchange
One-Way Split Partial Cloverleaf
LOS and Laneage
Figure 4A
Existing Laneage
Recommended Laneage
## Intersection or HCS Number
(## X)[## X] Intersection AM Peak and PM Peak Delay and LOS
Existing Signal
Proposed Signal
(##)[##] HCS AM Peak and PM Peak LOS or v/c Ratio
Ramp Merge/Diverge
###' Storage
AECOM

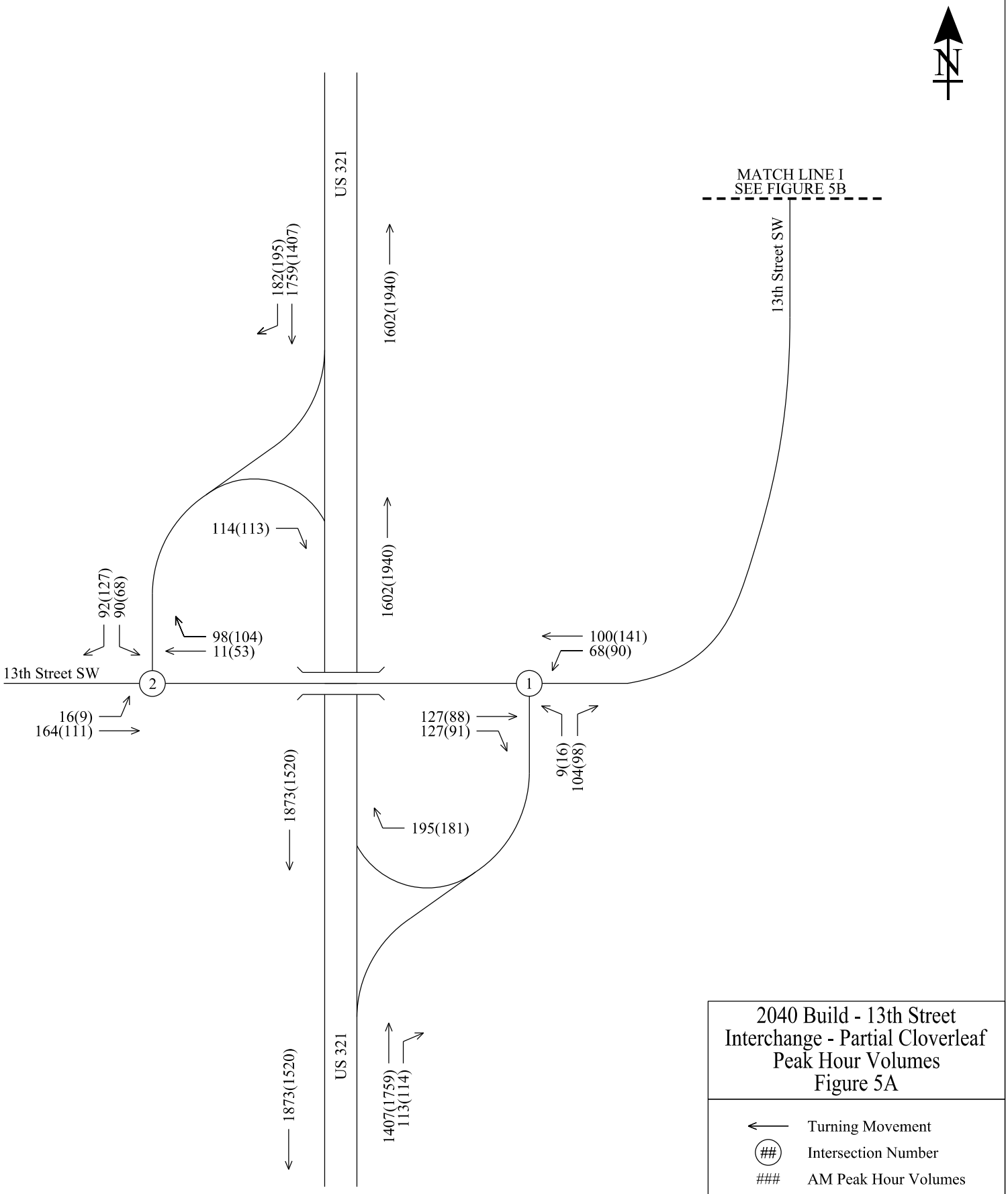



# 2040 Build - 13th Street Interchange One-Way Split Partial Cloverleaf LOS and Laneage

Figure 4B

- Existing Laneage
- Recommended Laneage
- ## — Intersection or HCS Number
- (## X)[## X] — Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Proposed Signal
- (##)[##] — HCS AM Peak and PM Peak LOS or v/c Ratio
- Ramp Merge/Diverge
- ###' — Storage

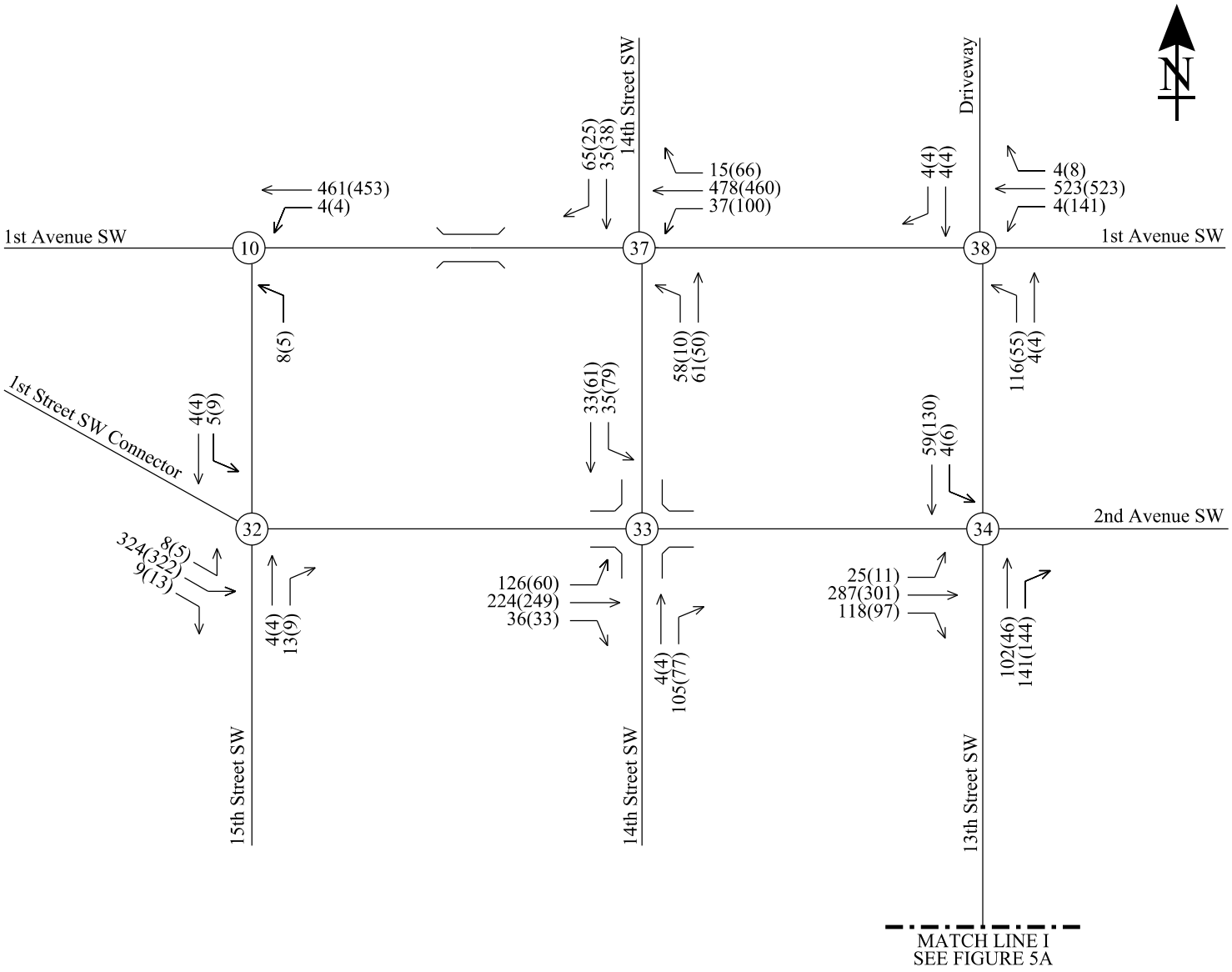
AECOM




2040 Build - 13th Street Interchange - Partial Cloverleaf
Peak Hour Volumes
Figure 5A

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

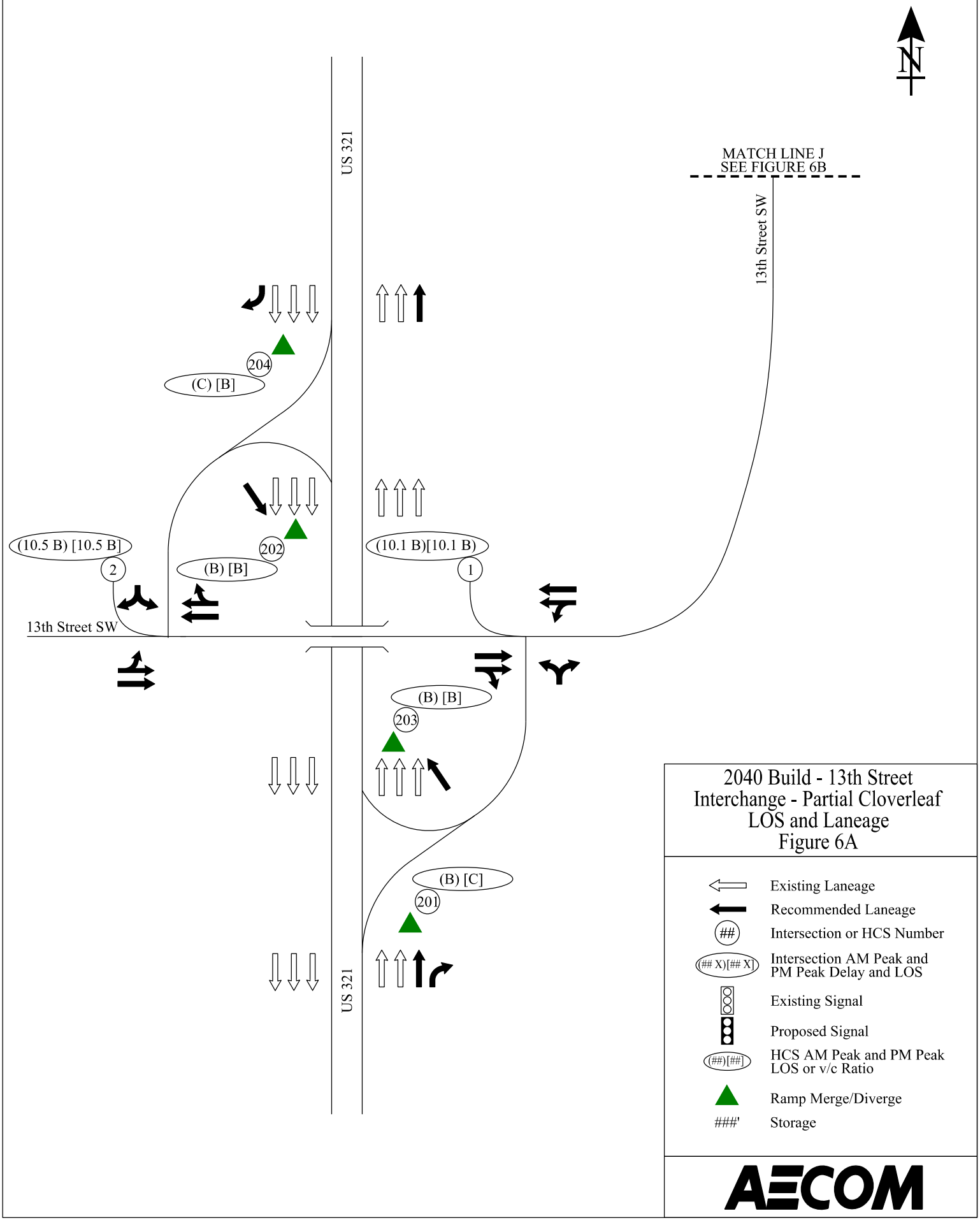
AECOM

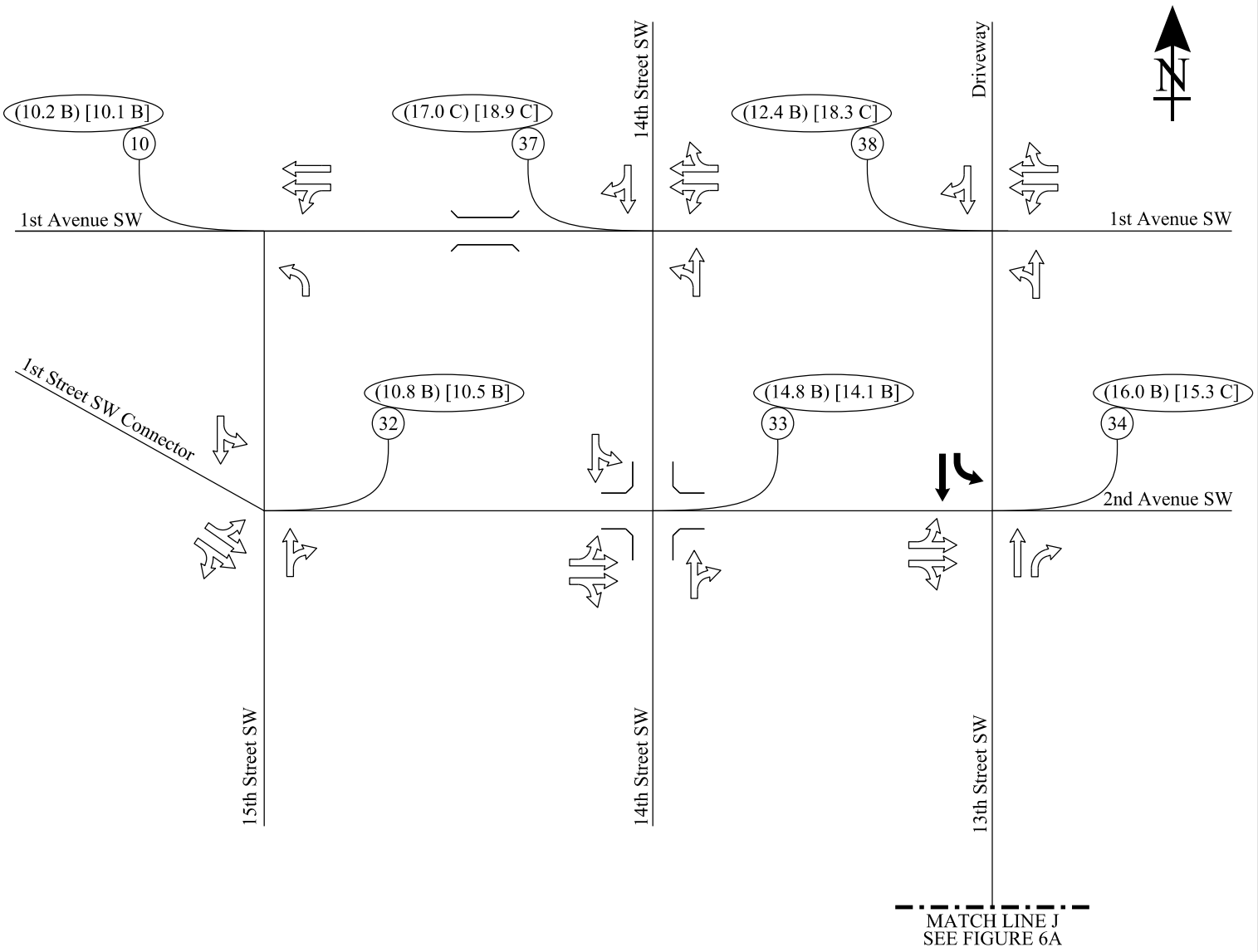



# 2040 Build - 13th Street Interchange - Partial Cloverleaf Peak Hour Volumes Figure 5B

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

AECOM


N
US 321
MATCH LINE J
SEE FIGURE 6B
13th Street SW
204
(C) [B]
202
(B) [B]
(10.5 B) [10.5 B]
2
(10.1 B)[10.1 B)
1
13th Street SW
(B) [B]
203
(B) [C]
201
US 321
2040 Build - 13th Street
Interchange - Partial Cloverleaf
LOS and Laneage
Figure 6A
Existing Laneage
Recommended Laneage
## Intersection or HCS Number
(## X)[## X] Intersection AM Peak and PM Peak Delay and LOS
Existing Signal
Proposed Signal
(##)[##] HCS AM Peak and PM Peak LOS or v/c Ratio
Ramp Merge/Diverge
###' Storage
AECOM

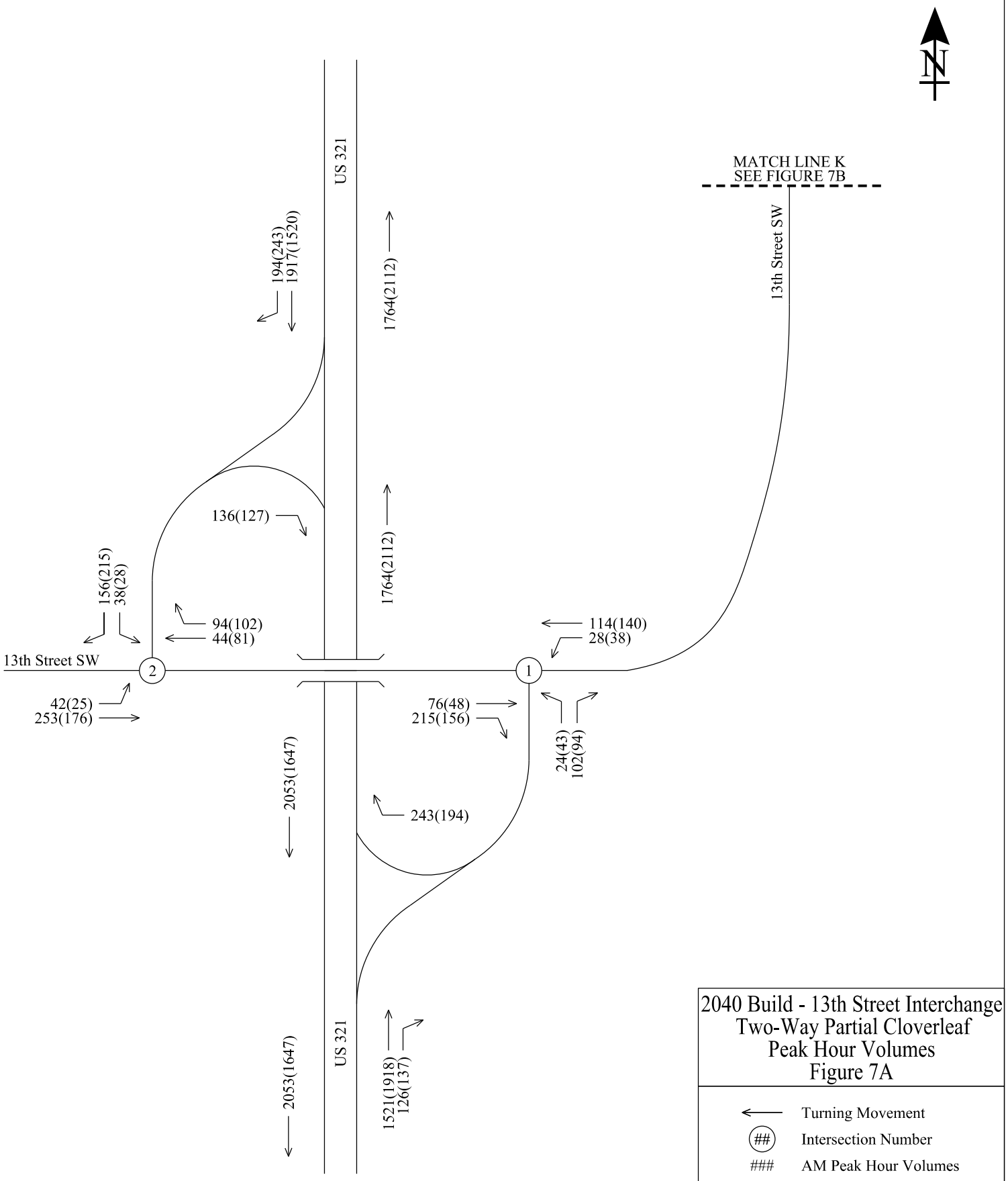



# 2040 Build - 13th Street Interchange - Partial Cloverleaf LOS and Laneage

Figure 6B

- Existing Laneage
- Recommended Laneage
- (##) Intersection or HCS Number
- (## X)[## X] Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Proposed Signal
- (##)[##] HCS AM Peak and PM Peak LOS or v/c Ratio
- Ramp Merge/Diverge
- ###' Storage

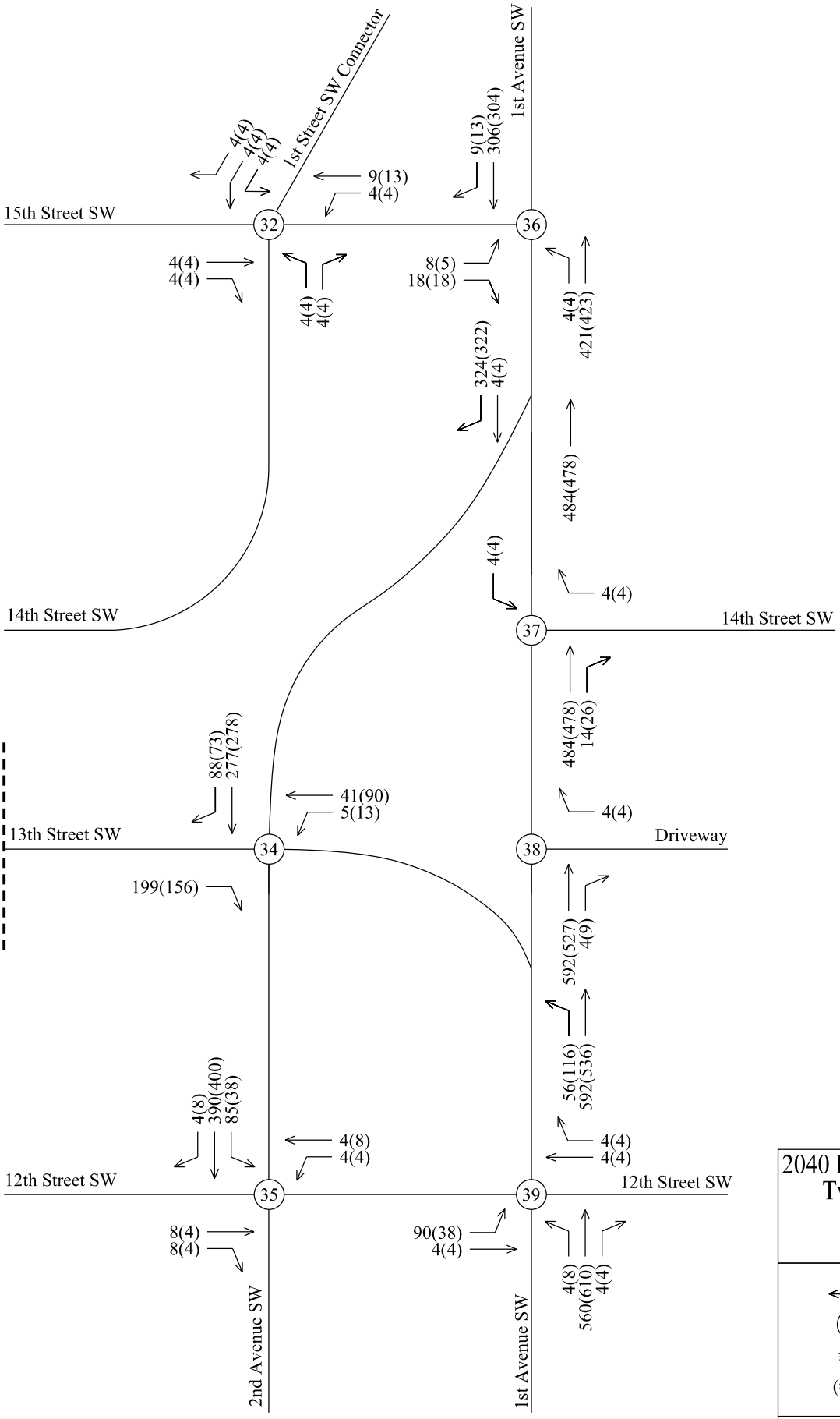
AECOM




2040 Build - 13th Street Interchange
Two-Way Partial Cloverleaf
Peak Hour Volumes
Figure 7A

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

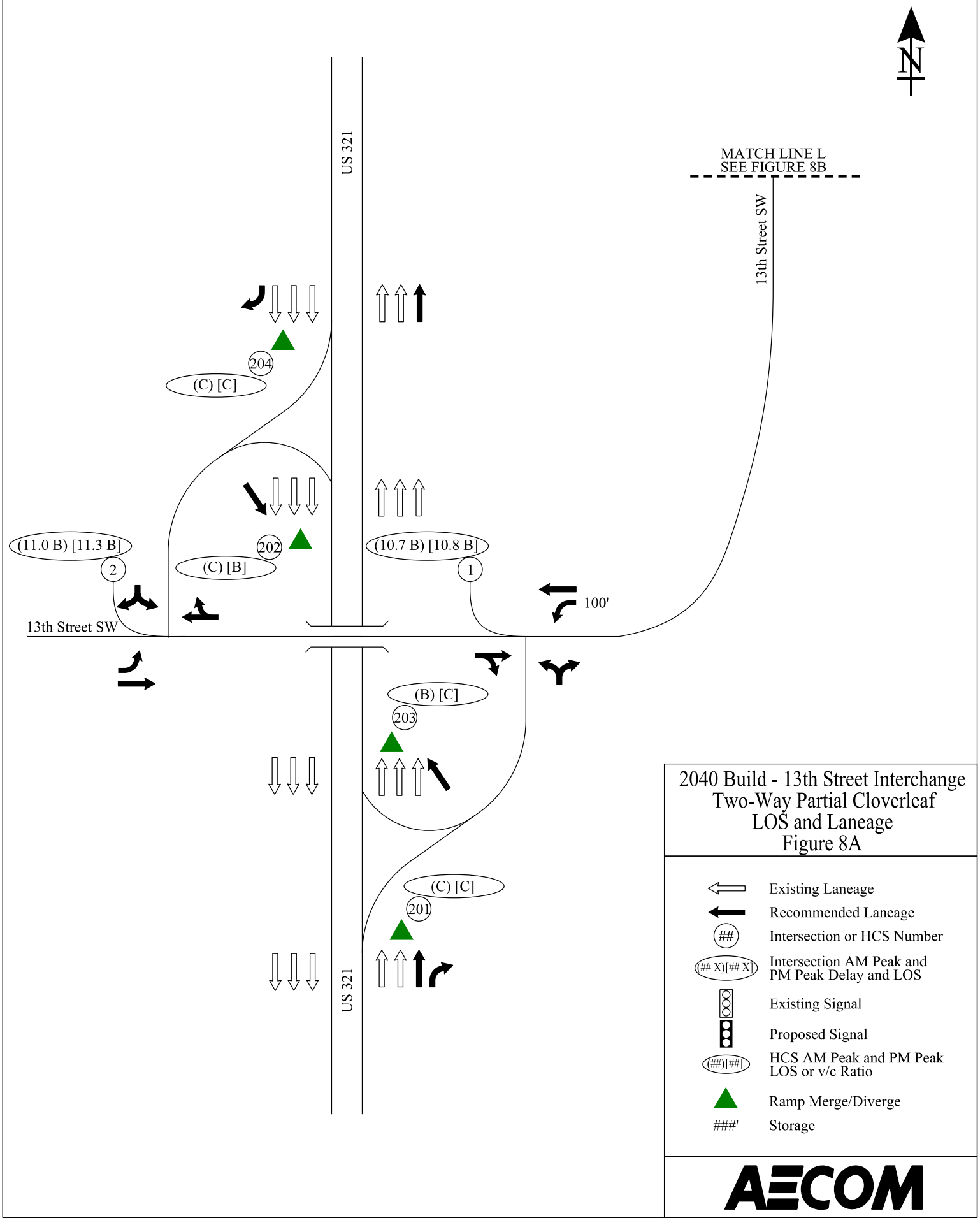
AECOM

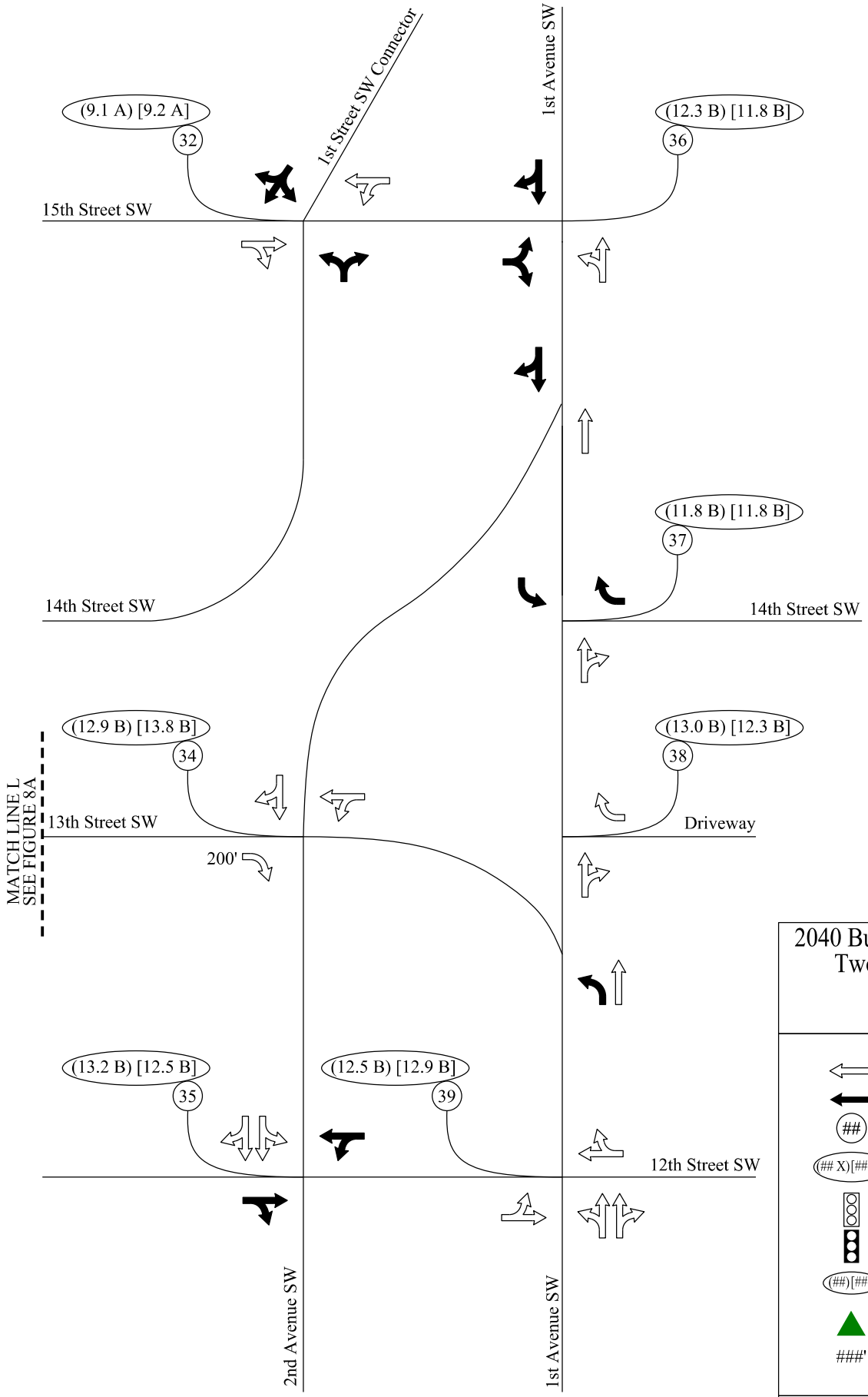



## 2040 Build - 13th Street Interchange
## Two-Way Partial Cloverleaf
## Peak Hour Volumes
## Figure 7B

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

AECOM

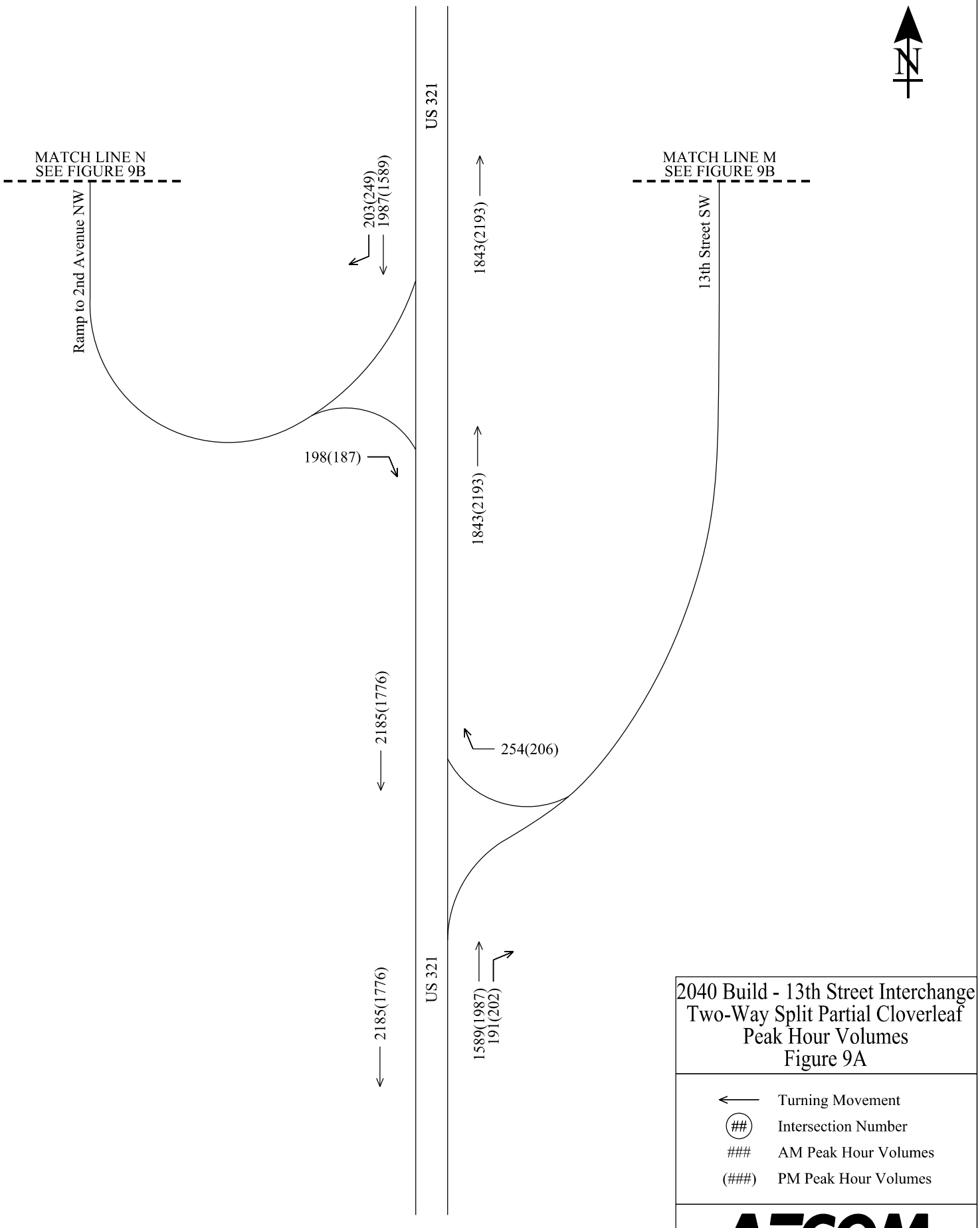

N
US 321
MATCH LINE L
SEE FIGURE 8B
13th Street SW
204
(C) [C]
202
(C) [B]
(11.0 B) [11.3 B]
2
(10.7 B) [10.8 B]
1
100'
13th Street SW
(B) [C]
203
(C) [C]
201
US 321
2040 Build - 13th Street Interchange
Two-Way Partial Cloverleaf
LOS and Laneage
Figure 8A
Existing Laneage
Recommended Laneage
## Intersection or HCS Number
(## X)[## X] Intersection AM Peak and PM Peak Delay and LOS
Existing Signal
Proposed Signal
(##)[##] HCS AM Peak and PM Peak LOS or v/c Ratio
Ramp Merge/Diverge
###' Storage
AECOM




## 2040 Build - 13th Street Interchange
## Two-Way Partial Cloverleaf
## LOS and Laneage
## Figure 8B

- Existing Laneage
- Recommended Laneage
- (##) Intersection or HCS Number
- (## X)[## X] Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Proposed Signal
- (##)[##] HCS AM Peak and PM Peak LOS or v/c Ratio
- Ramp Merge/Diverge
- ###' Storage

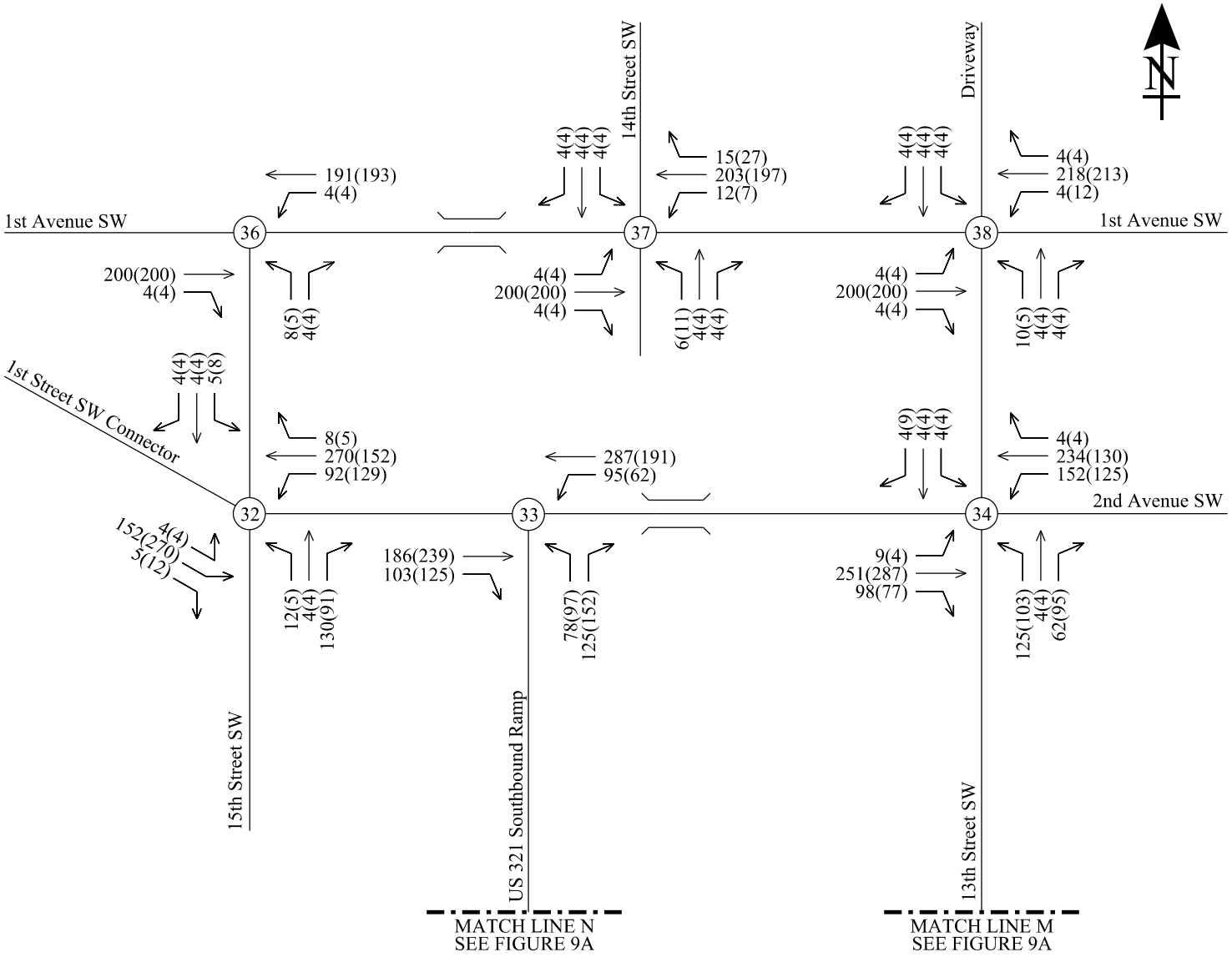
AECOM




2040 Build - 13th Street Interchange
Two-Way Split Partial Cloverleaf
Peak Hour Volumes
Figure 9A

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

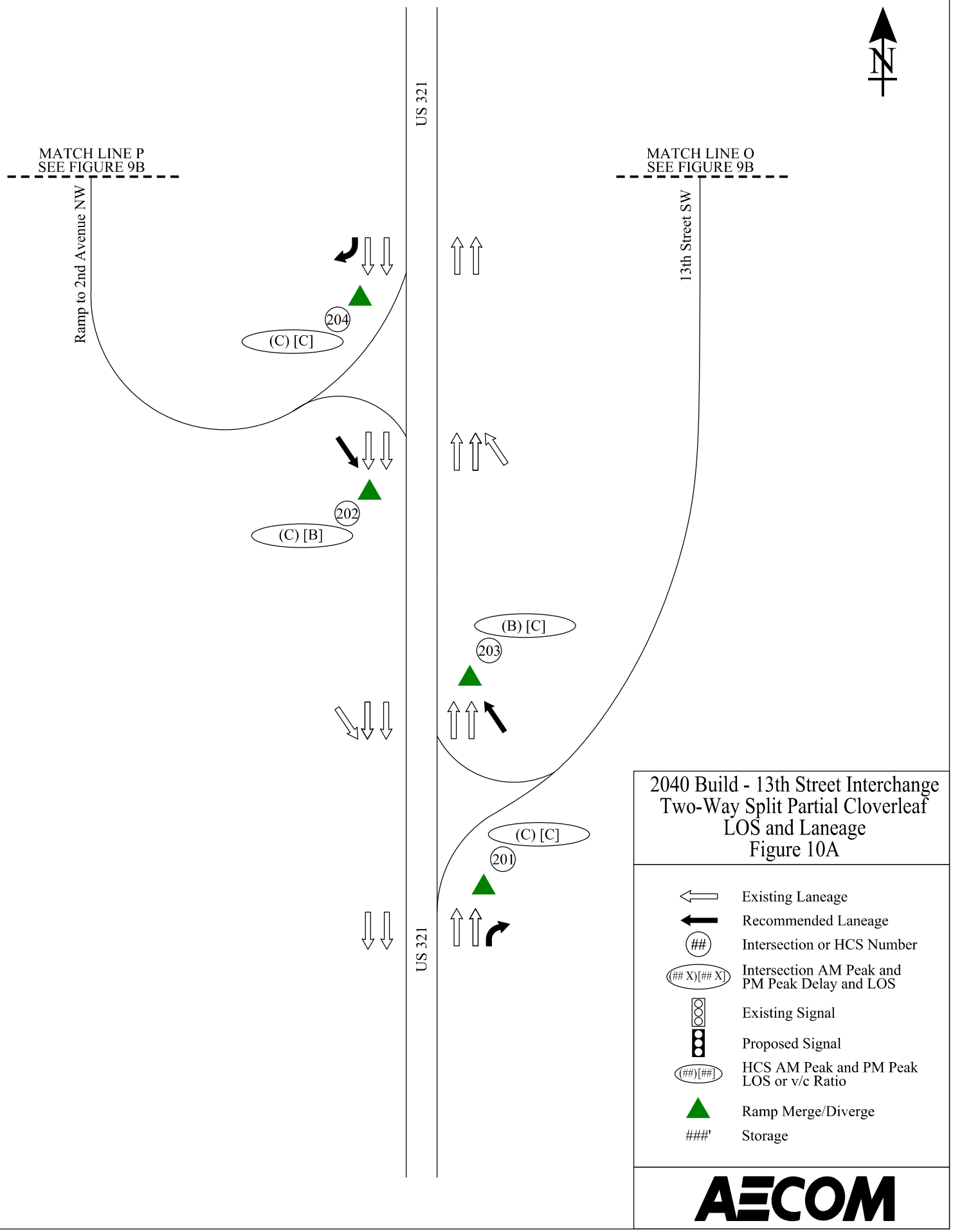
AECOM

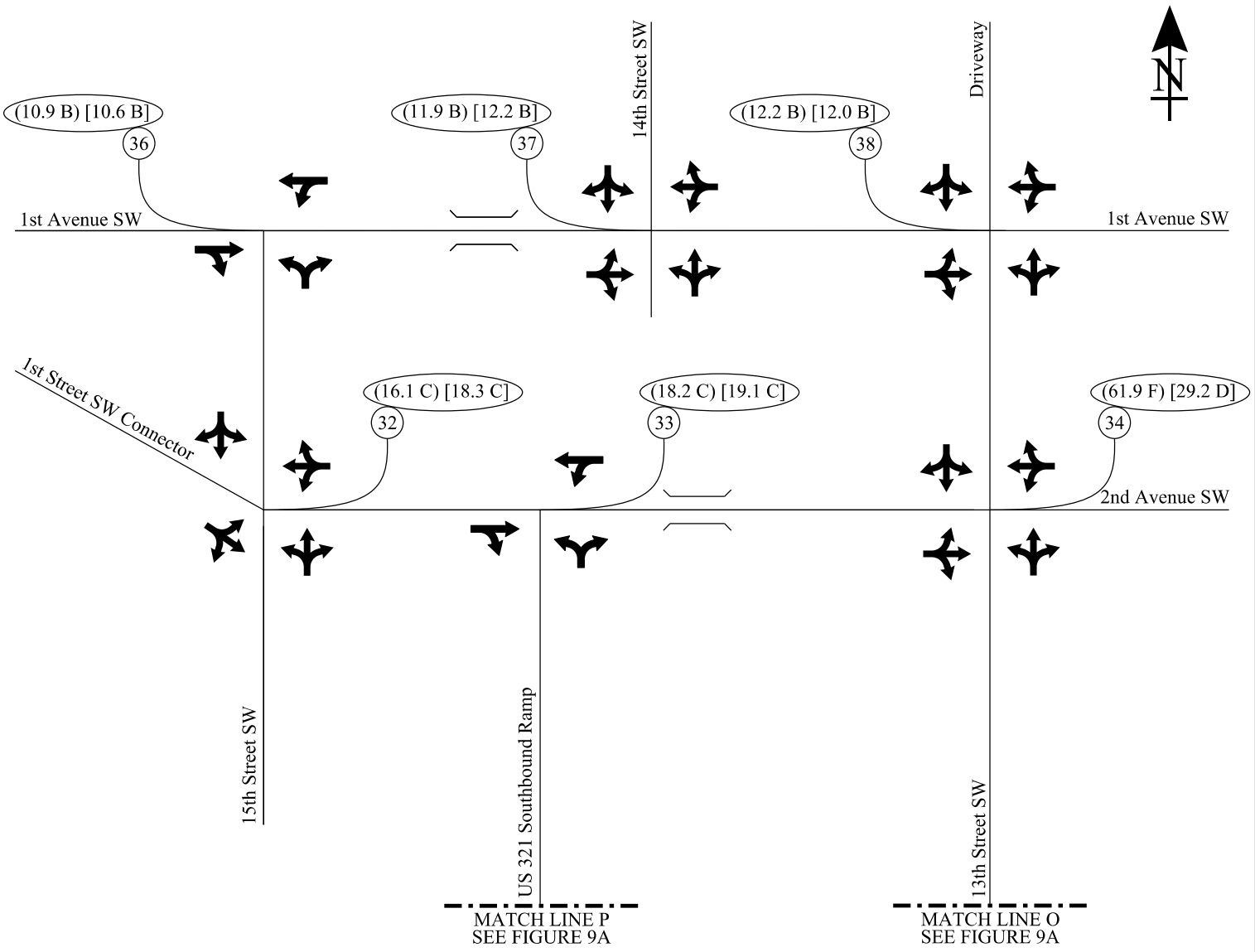



2040 Build - 13th Street Interchange
Two-Way Split Partial Cloverleaf
Peak Hour Volumes
Figure 9B

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

AECOM

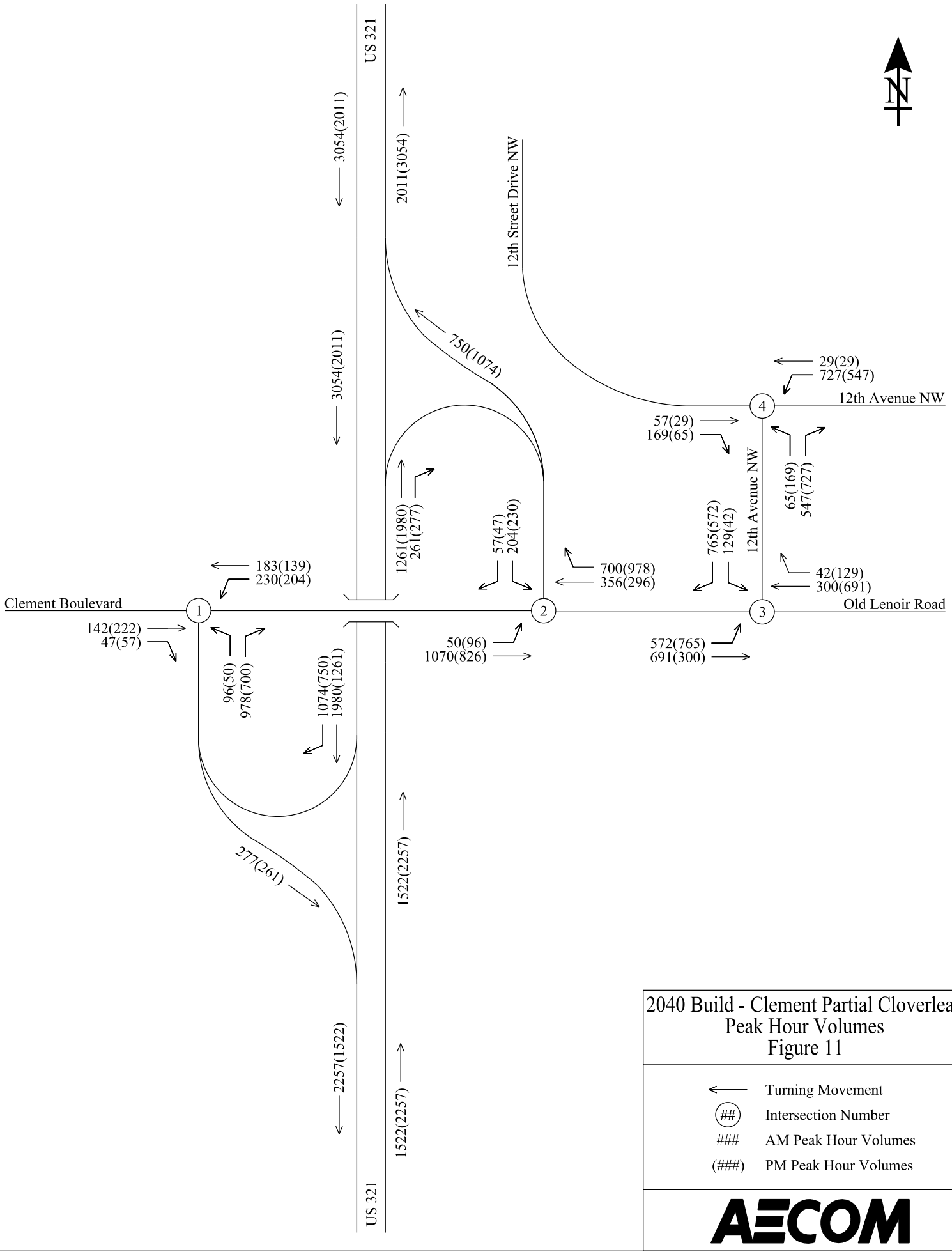

MATCH LINE P
SEE FIGURE 9B
MATCH LINE O
SEE FIGURE 9B
US 321
Ramp to 2nd Avenue NW
13th Street SW
204
(C) [C]
202
(C) [B]
(B) [C]
203
(C) [C]
201
US 321
2040 Build - 13th Street Interchange
Two-Way Split Partial Cloverleaf
LOS and Laneage
Figure 10A
Existing Laneage
Recommended Laneage
## Intersection or HCS Number
(## X)[## X] Intersection AM Peak and PM Peak Delay and LOS
Existing Signal
Proposed Signal
(##)[##] HCS AM Peak and PM Peak LOS or v/c Ratio
Ramp Merge/Diverge
###' Storage
AECOM

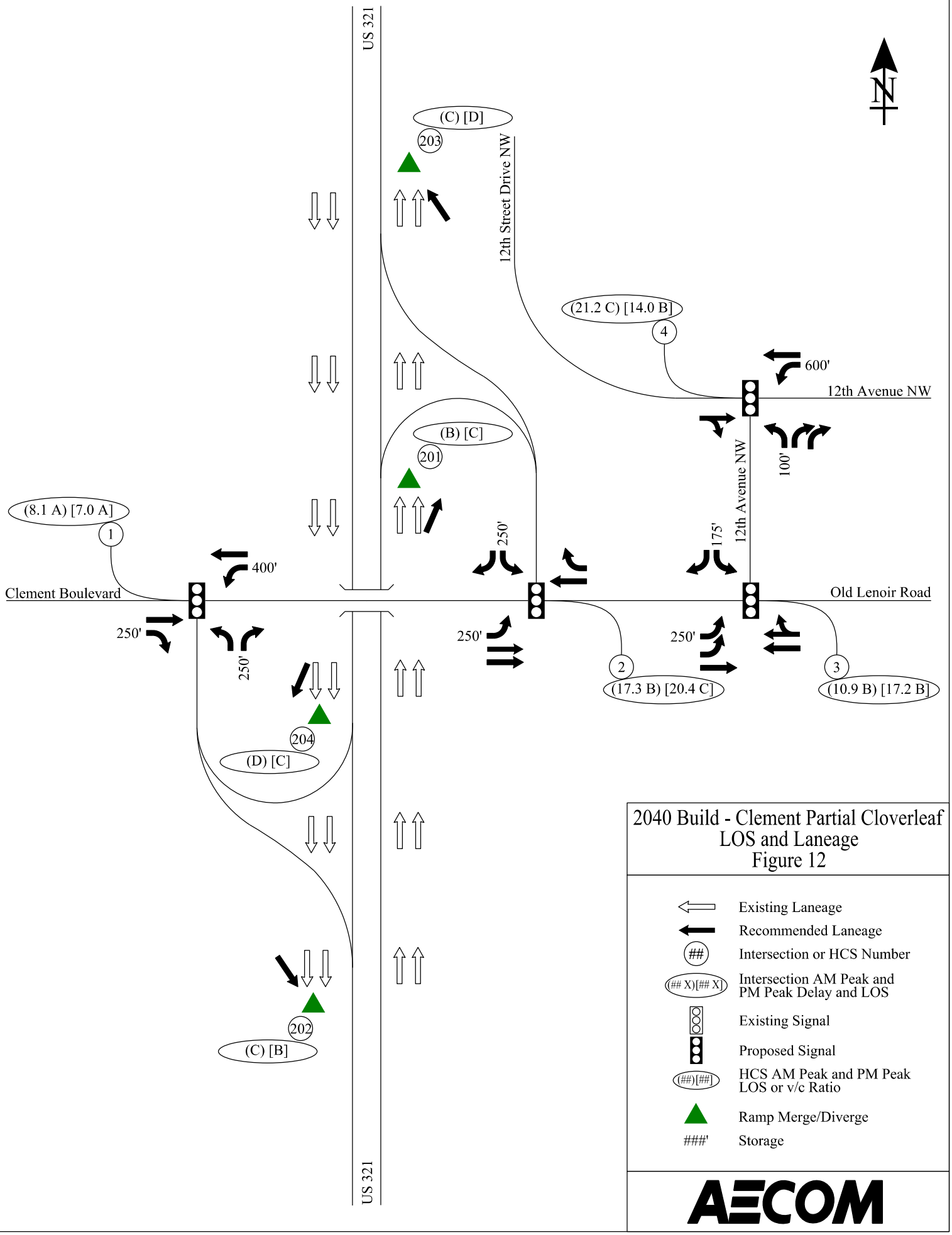


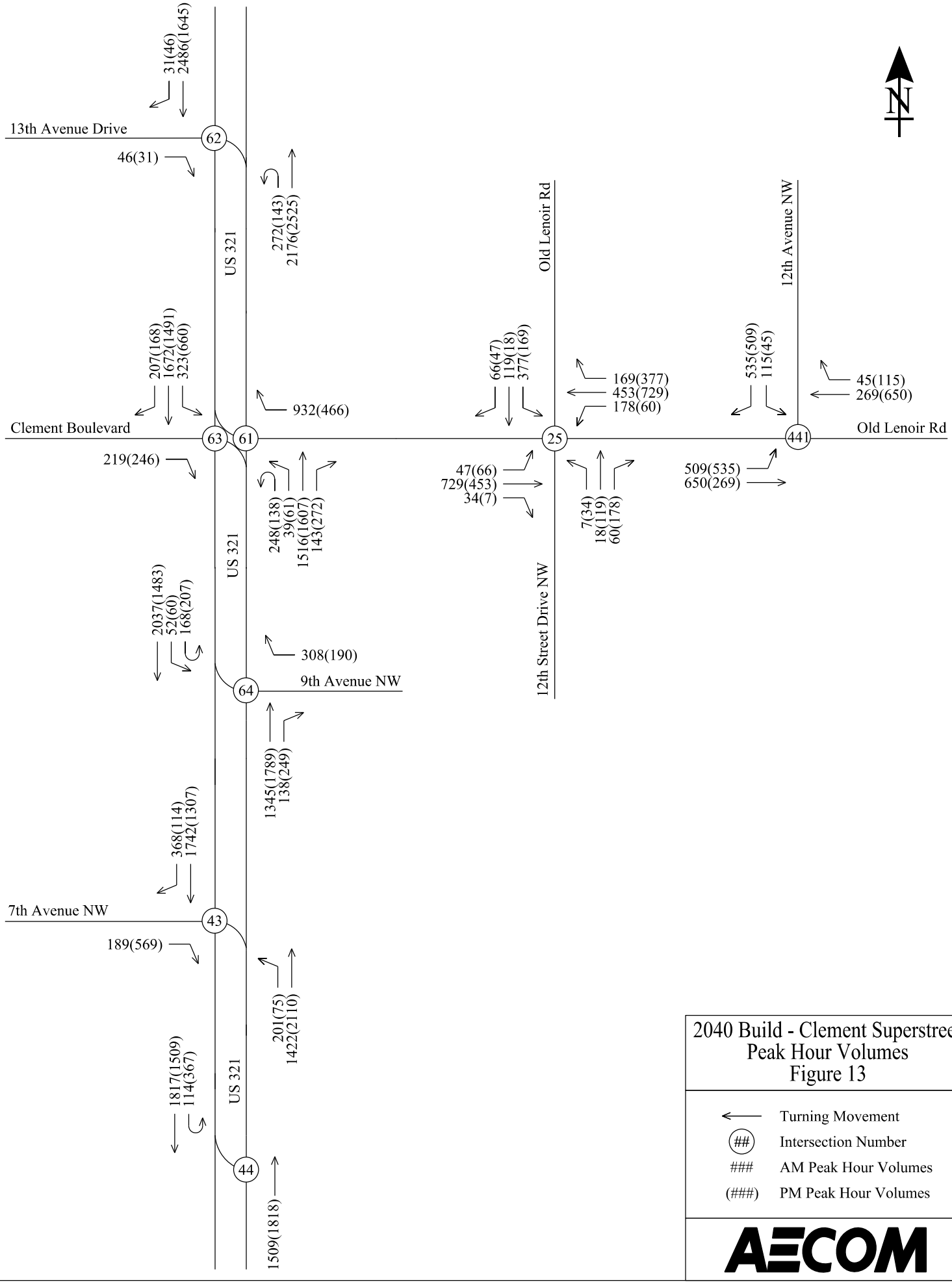

# 2040 Build - 13th Street Interchange
# Two-Way Split Partial Cloverleaf
# LOS and Laneage
# Figure 10B

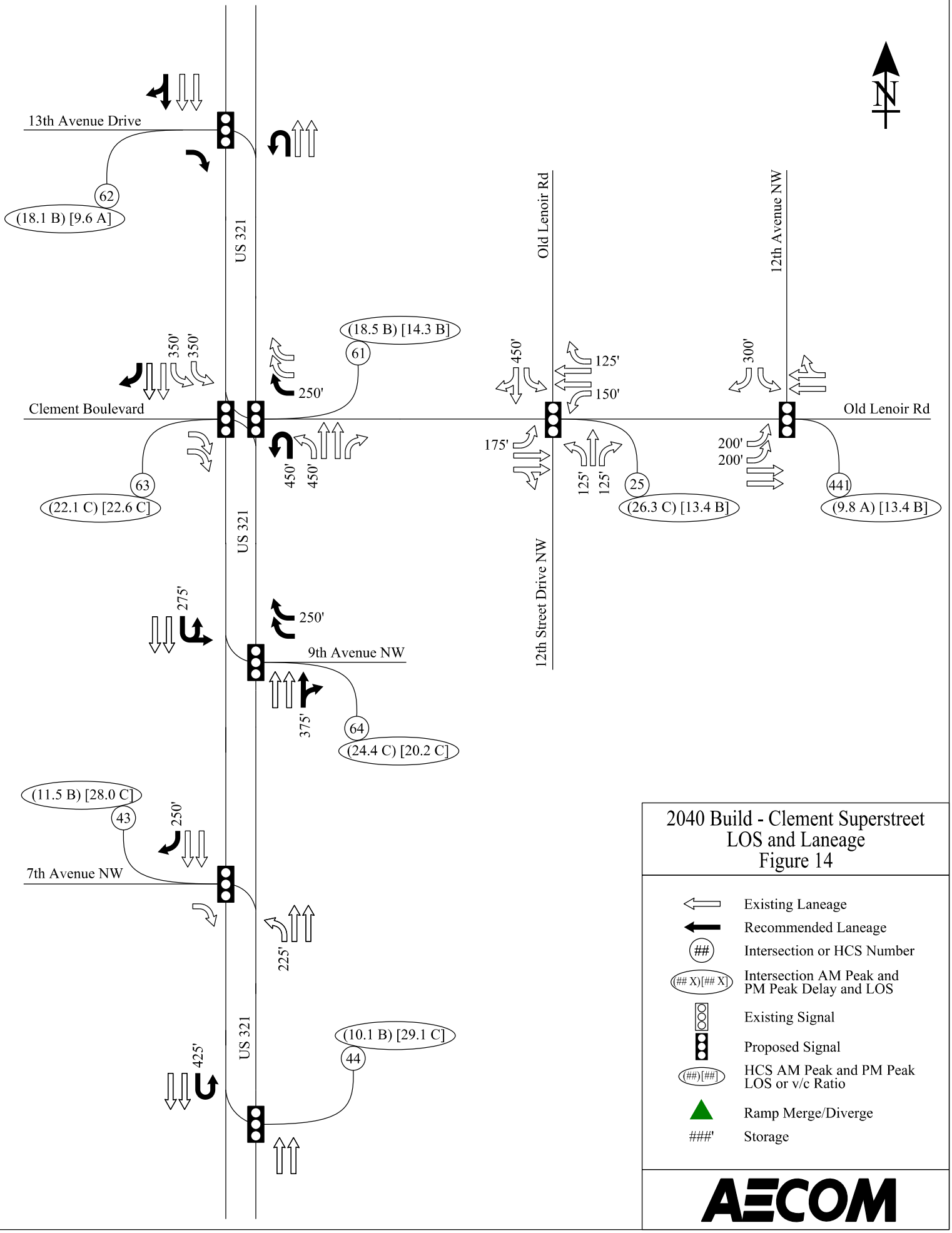
- Existing Laneage
- Recommended Laneage
- (##) Intersection or HCS Number
- (## X)[## X] Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Proposed Signal
- (##)[##] HCS AM Peak and PM Peak LOS or v/c Ratio
- Ramp Merge/Diverge
- ###' Storage

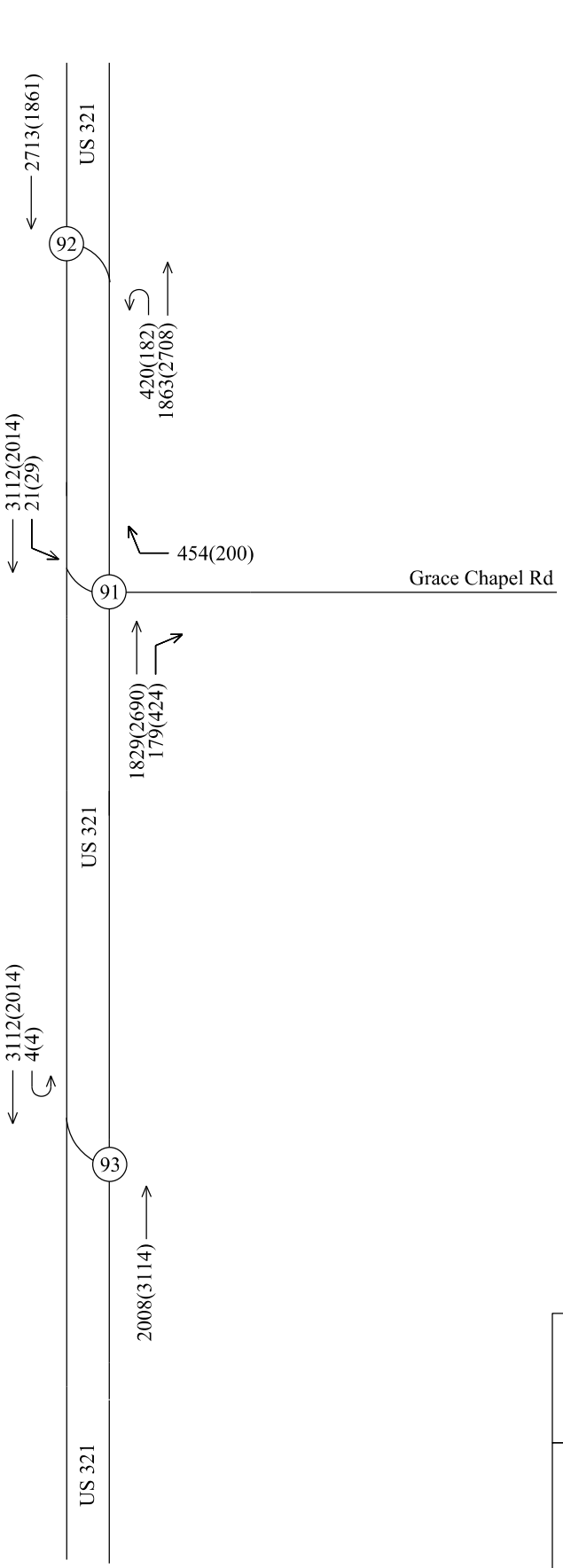
AECOM


US 321
3054(2011)
3054(2011)
2011(3054)
12th Street Drive NW
750(1074)
29(29)
727(547)
12th Avenue NW
4
57(29)
169(65)
65(169)
547(727)
12th Avenue NW
1261(1980)
261(277)
57(47)
204(230)
765(572)
129(42)
700(978)
356(296)
42(129)
300(691)
183(139)
230(204)
Clement Boulevard
1
2
3
Old Lenoir Road
142(222)
47(57)
96(50)
978(700)
1074(750)
1980(1261)
50(96)
1070(826)
572(765)
691(300)
277(261)
1522(2257)
2257(1522)
1522(2257)
US 321
2040 Build - Clement Partial Cloverleaf
Peak Hour Volumes
Figure 11
Turning Movement
## Intersection Number
### AM Peak Hour Volumes
(###) PM Peak Hour Volumes
AECOM


US 321
12th Street Drive NW
(C) [D]
203
(21.2 C) [14.0 B]
4
600'
12th Avenue NW
(B) [C]
201
100'
12th Avenue NW
175'
250'
(8.1 A) [7.0 A]
1
400'
Clement Boulevard
Old Lenoir Road
250'
250'
250'
250'
2
(17.3 B) [20.4 C]
3
(10.9 B) [17.2 B]
204
(D) [C]
202
(C) [B]
US 321
2040 Build - Clement Partial Cloverleaf
LOS and Laneage
Figure 12
Existing Laneage
Recommended Laneage
## Intersection or HCS Number
(## X)[## X] Intersection AM Peak and PM Peak Delay and LOS
Existing Signal
Proposed Signal
(##)[##] HCS AM Peak and PM Peak LOS or v/c Ratio
Ramp Merge/Diverge
###' Storage
AECOM


13th Avenue Drive
Clement Boulevard
7th Avenue NW
9th Avenue NW
Old Lenoir Rd
US 321
Old Lenoir Rd
12th Avenue NW
12th Street Drive NW
62
63
61
25
441
64
43
44
31(46)
2486(1645)
46(31)
272(143)
2176(2525)
207(168)
1672(1491)
323(660)
932(466)
66(47)
119(18)
377(169)
169(377)
453(729)
178(60)
535(509)
115(45)
45(115)
269(650)
219(246)
248(138)
39(61)
1516(1607)
143(272)
47(66)
729(453)
34(7)
7(34)
18(119)
60(178)
509(535)
650(269)
2037(1483)
52(60)
168(207)
308(190)
1345(1789)
138(249)
368(114)
1742(1307)
189(569)
201(75)
1422(2110)
1817(1509)
114(367)
1509(1818)
N
2040 Build - Clement Superstreet
Peak Hour Volumes
Figure 13
Turning Movement
## Intersection Number
### AM Peak Hour Volumes
(###) PM Peak Hour Volumes
AECOM

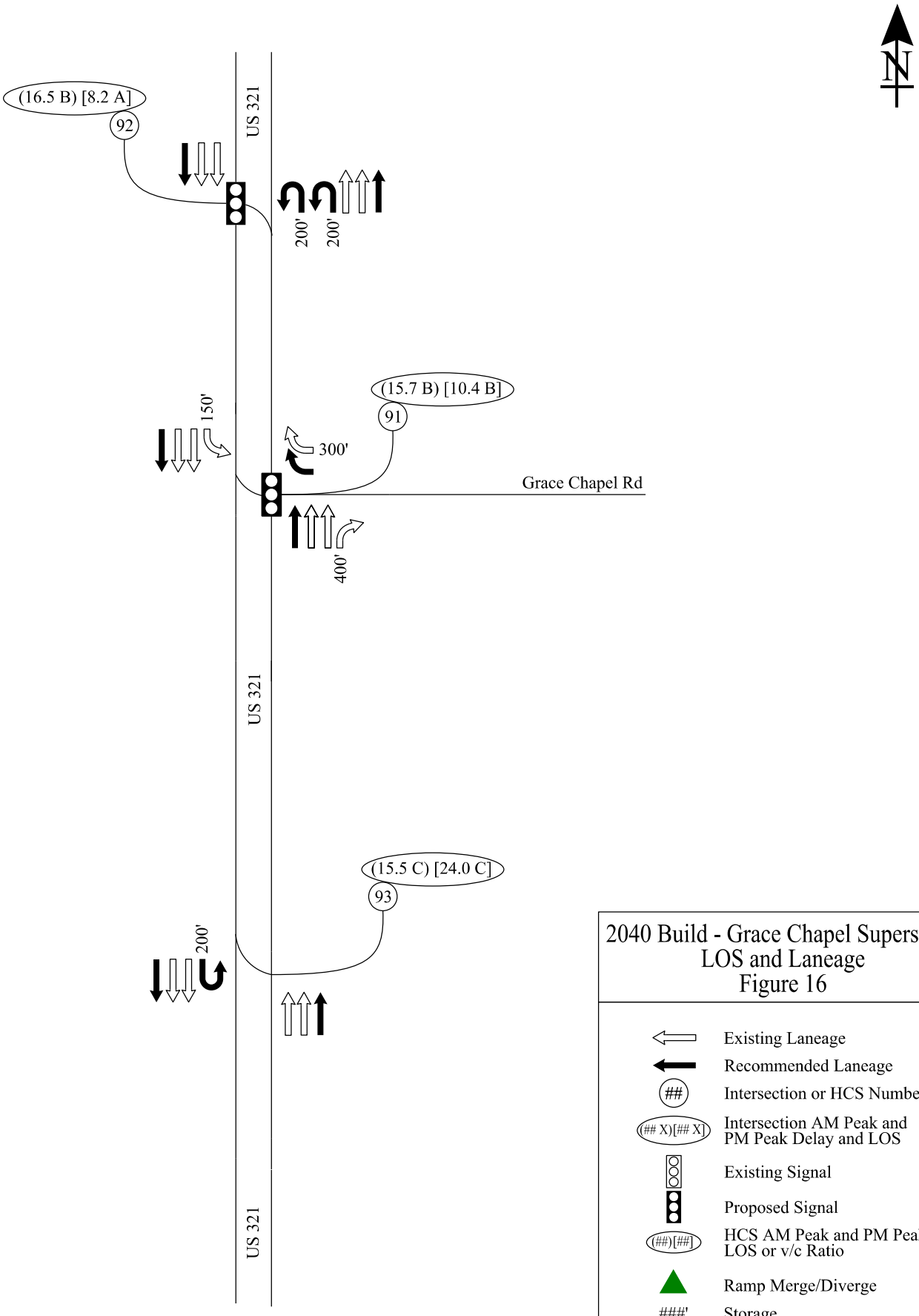

13th Avenue Drive
62
(18.1 B) [9.6 A]
US 321
Old Lenoir Rd
12th Avenue NW
Clement Boulevard
Old Lenoir Rd
(18.5 B) [14.3 B]
61
350'
350'
250'
450'
125'
150'
300'
175'
200'
200'
450'
450'
125'
125'
63
(22.1 C) [22.6 C]
25
(26.3 C) [13.4 B]
441
(9.8 A) [13.4 B]
US 321
12th Street Drive NW
275'
250'
9th Avenue NW
375'
64
(24.4 C) [20.2 C]
(11.5 B) [28.0 C]
43
250'
7th Avenue NW
225'
US 321
(10.1 B) [29.1 C]
44
425'
N
2040 Build - Clement Superstreet
LOS and Laneage
Figure 14
Existing Laneage
Recommended Laneage
## Intersection or HCS Number
(## X)[## X] Intersection AM Peak and PM Peak Delay and LOS
Existing Signal
Proposed Signal
(##)[##] HCS AM Peak and PM Peak LOS or v/c Ratio
Ramp Merge/Diverge
###' Storage
AECOM




2040 Build - Grace Chapel
Superstreet
Peak Hour Volumes
Figure 15

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

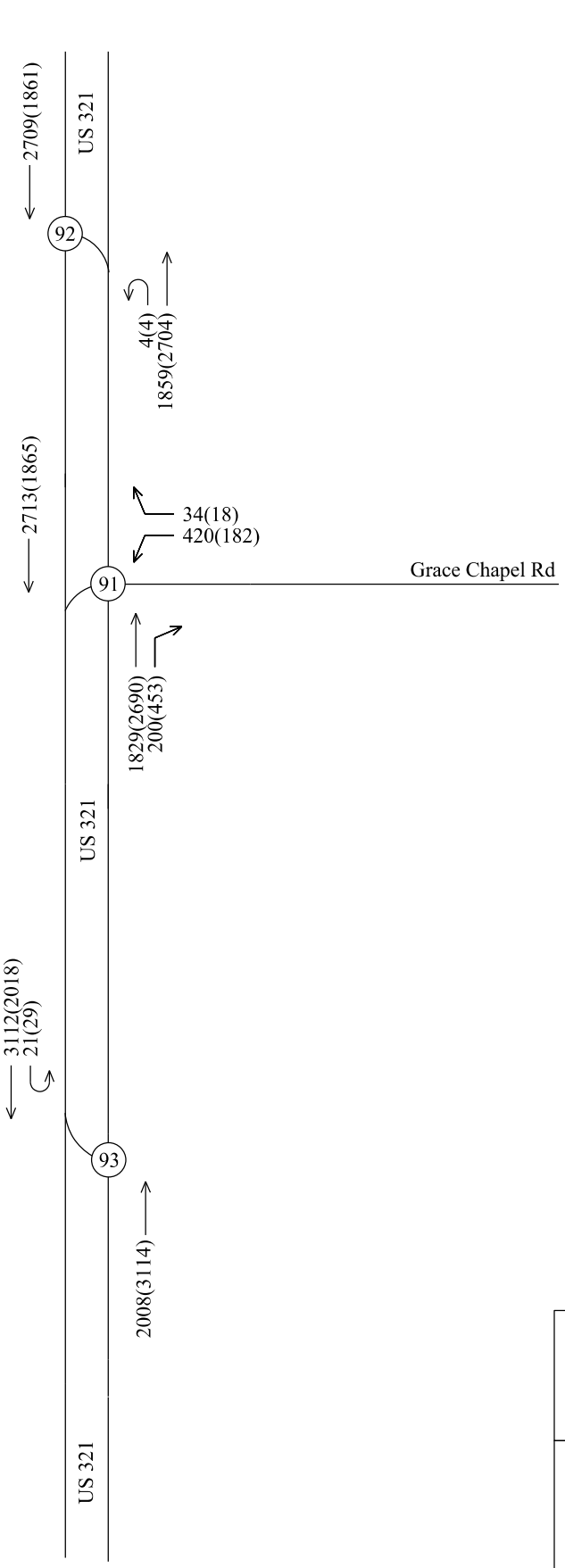
AECOM




2040 Build - Grace Chapel Superstreet
LOS and Laneage
Figure 16

- Existing Laneage
- Recommended Laneage
- (##) Intersection or HCS Number
- (## X)[## X] Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Proposed Signal
- (##)[##] HCS AM Peak and PM Peak LOS or v/c Ratio
- Ramp Merge/Diverge
- ###' Storage

AECOM

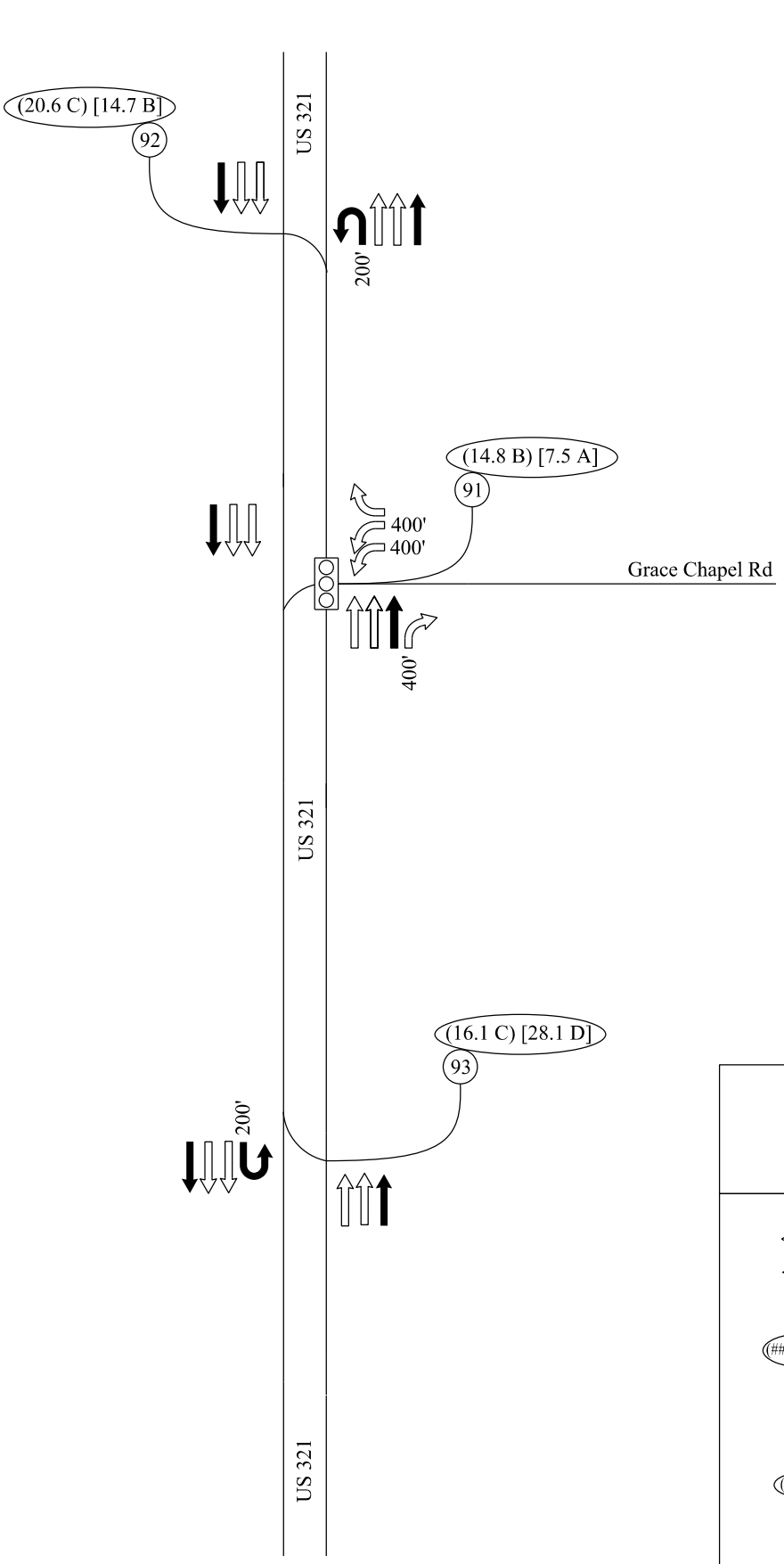




2040 Build - Grace Chapel
Reverse Superstreet
Peak Hour Volumes
Figure 17

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

AECOM




# 2040 Build - Grace Chapel
# Reverse Superstreet
# LOS and Laneage
# Figure 18

Existing Laneage

Recommended Laneage

(##) Intersection or HCS Number

((## X)[## X]) Intersection AM Peak and PM Peak Delay and LOS

Existing Signal

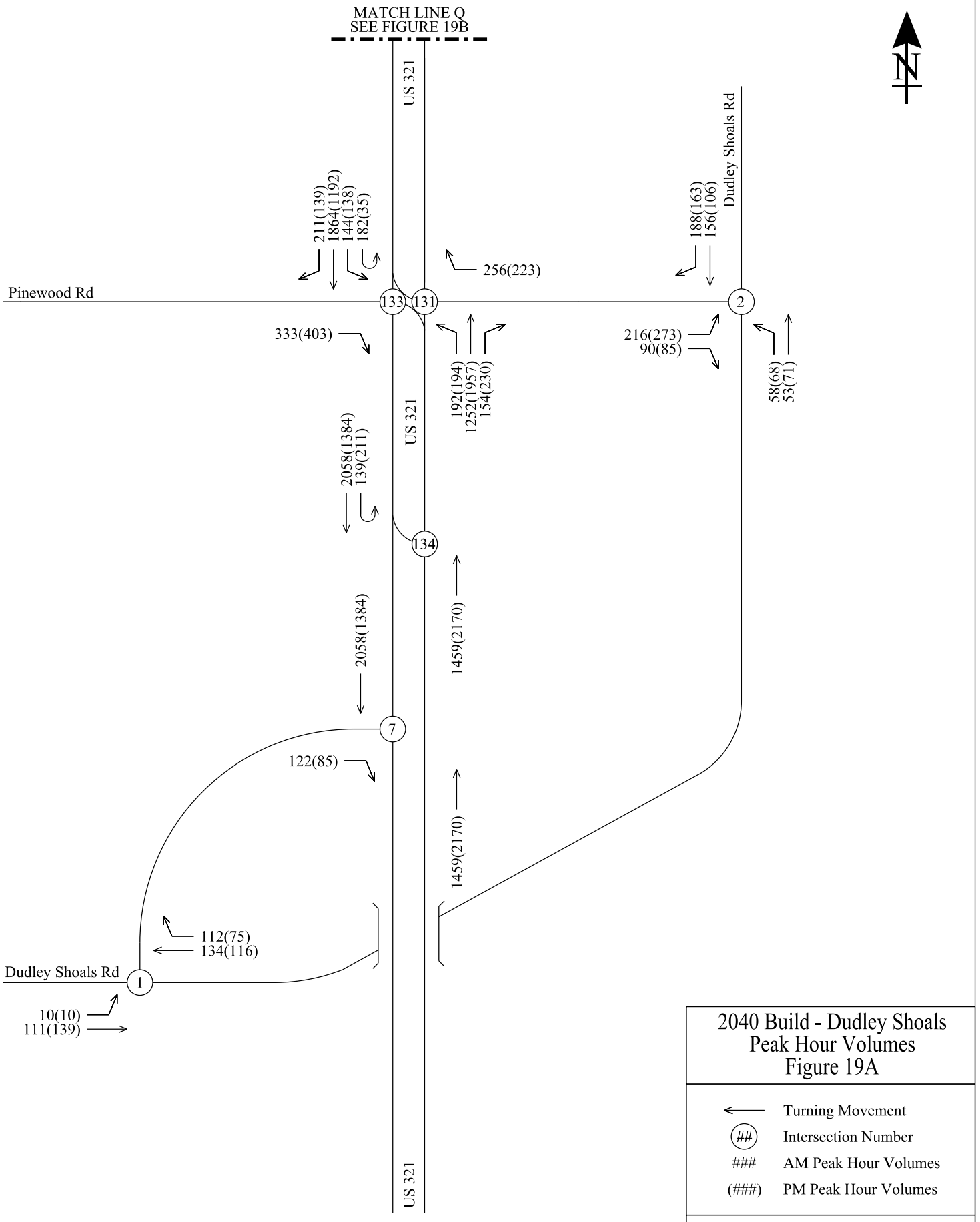
Proposed Signal

((##)[##]) HCS AM Peak and PM Peak LOS or v/c Ratio

Ramp Merge/Diverge

###' Storage

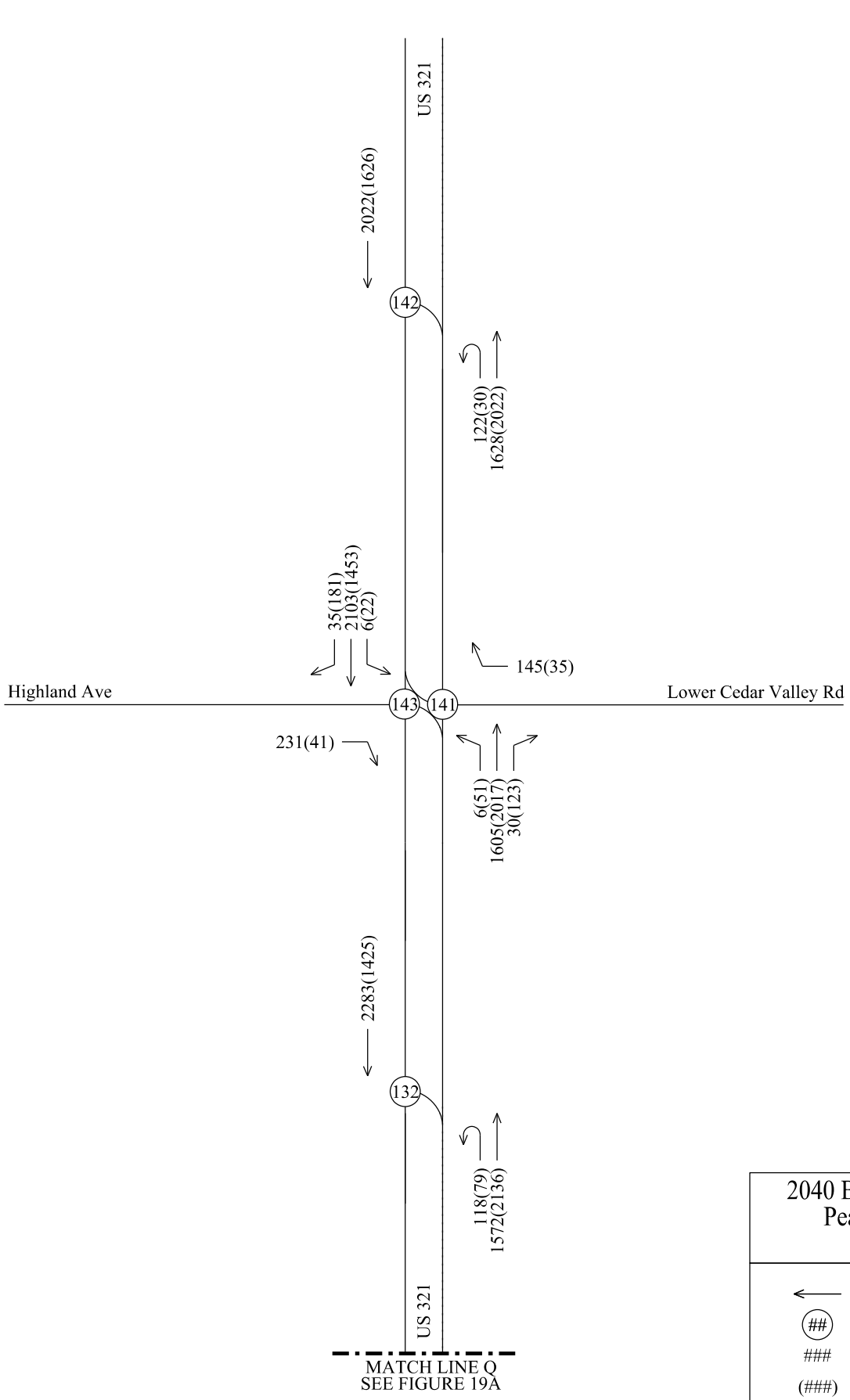
AECOM




## 2040 Build - Dudley Shoals Peak Hour Volumes Figure 19A

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

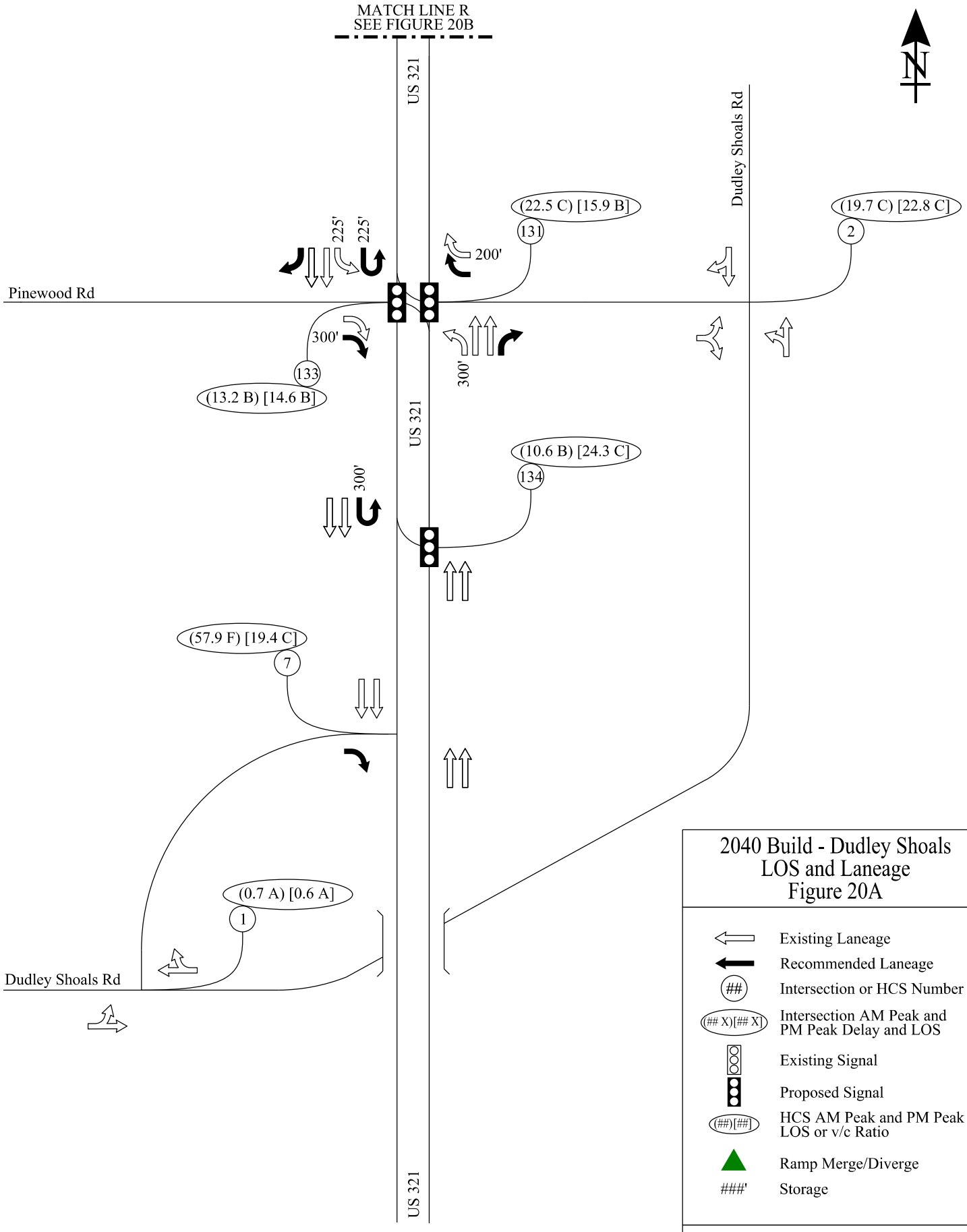
AECOM

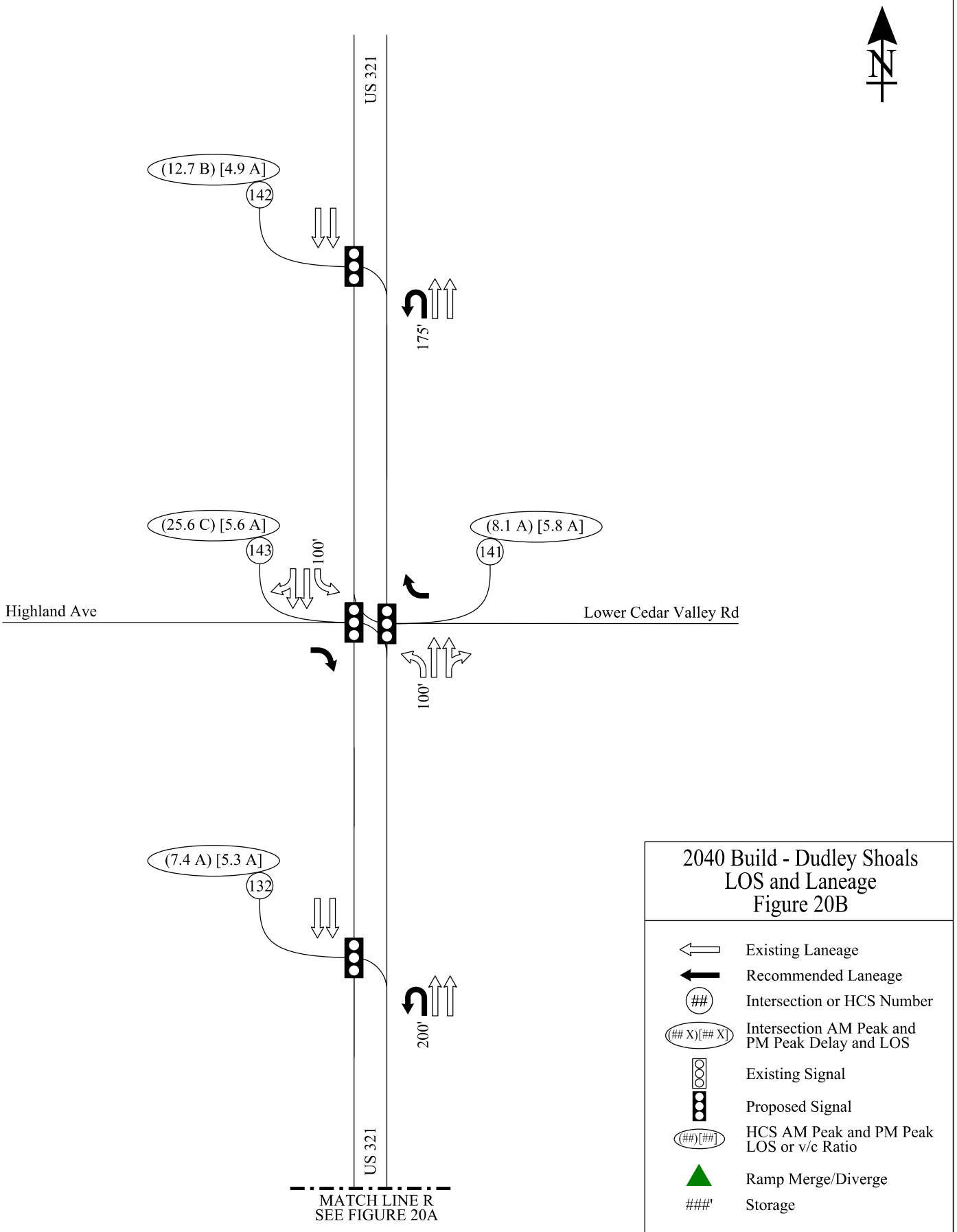



## 2040 Build - Dudley Shoals
## Peak Hour Volumes
## Figure 19B

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

AECOM

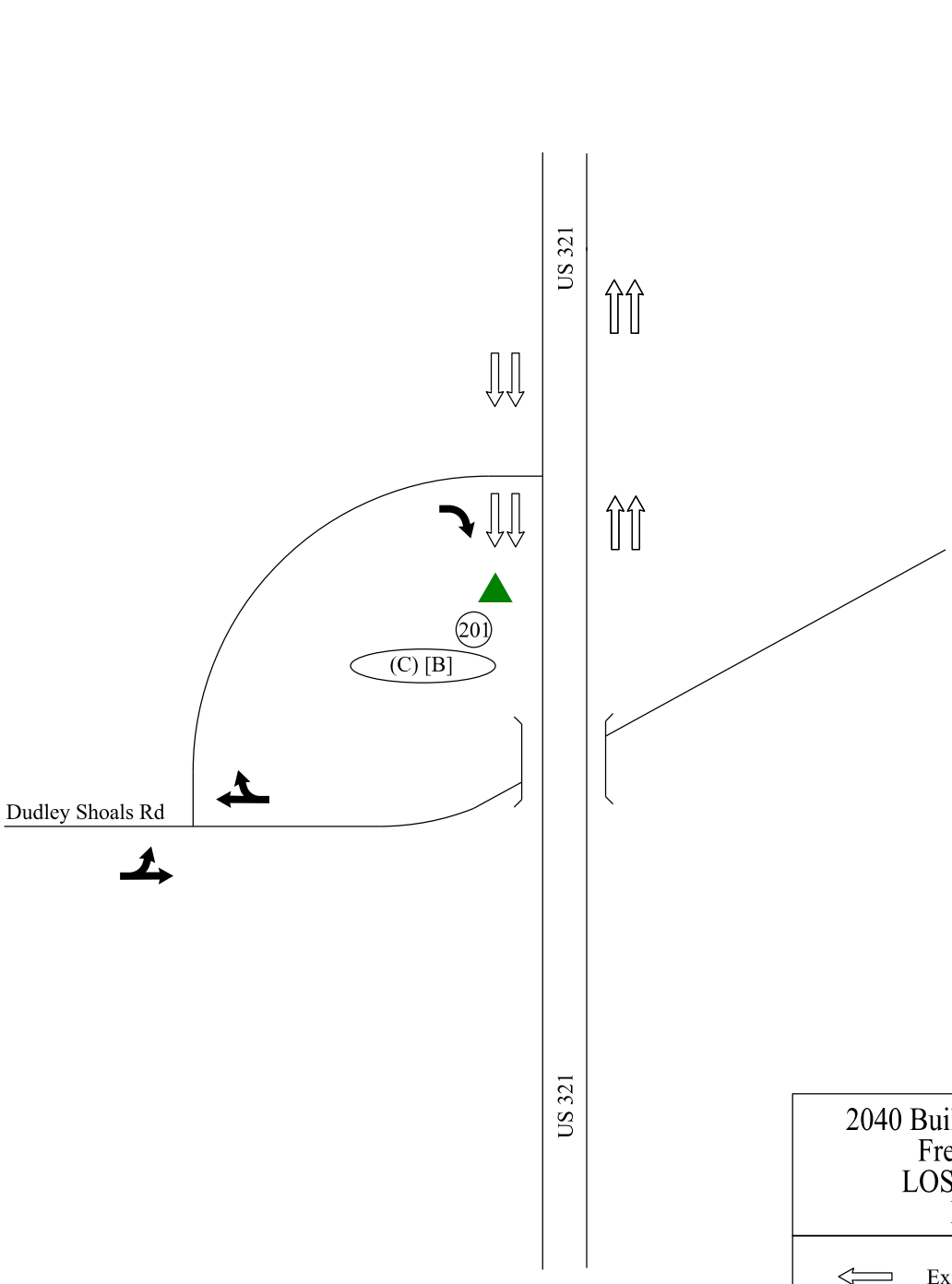

MATCH LINE R
SEE FIGURE 20B
US 321
Dudley Shoals Rd
Pinewood Rd
225'
225'
200'
(22.5 C) [15.9 B]
131
(19.7 C) [22.8 C]
2
300'
300'
133
(13.2 B) [14.6 B]
(10.6 B) [24.3 C]
134
300'
(57.9 F) [19.4 C]
7
(0.7 A) [0.6 A]
1
Dudley Shoals Rd
2040 Build - Dudley Shoals
LOS and Laneage
Figure 20A
Existing Laneage
Recommended Laneage
## Intersection or HCS Number
(## X)[## X] Intersection AM Peak and PM Peak Delay and LOS
Existing Signal
Proposed Signal
(##)[##] HCS AM Peak and PM Peak LOS or v/c Ratio
Ramp Merge/Diverge
###' Storage
AECOM




## 2040 Build - Dudley Shoals
## LOS and Laneage
## Figure 20B

- Existing Laneage
- Recommended Laneage
- ## — Intersection or HCS Number
- (## X)[## X] — Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Proposed Signal
- (##)[##] — HCS AM Peak and PM Peak LOS or v/c Ratio
- Ramp Merge/Diverge
- ###' — Storage

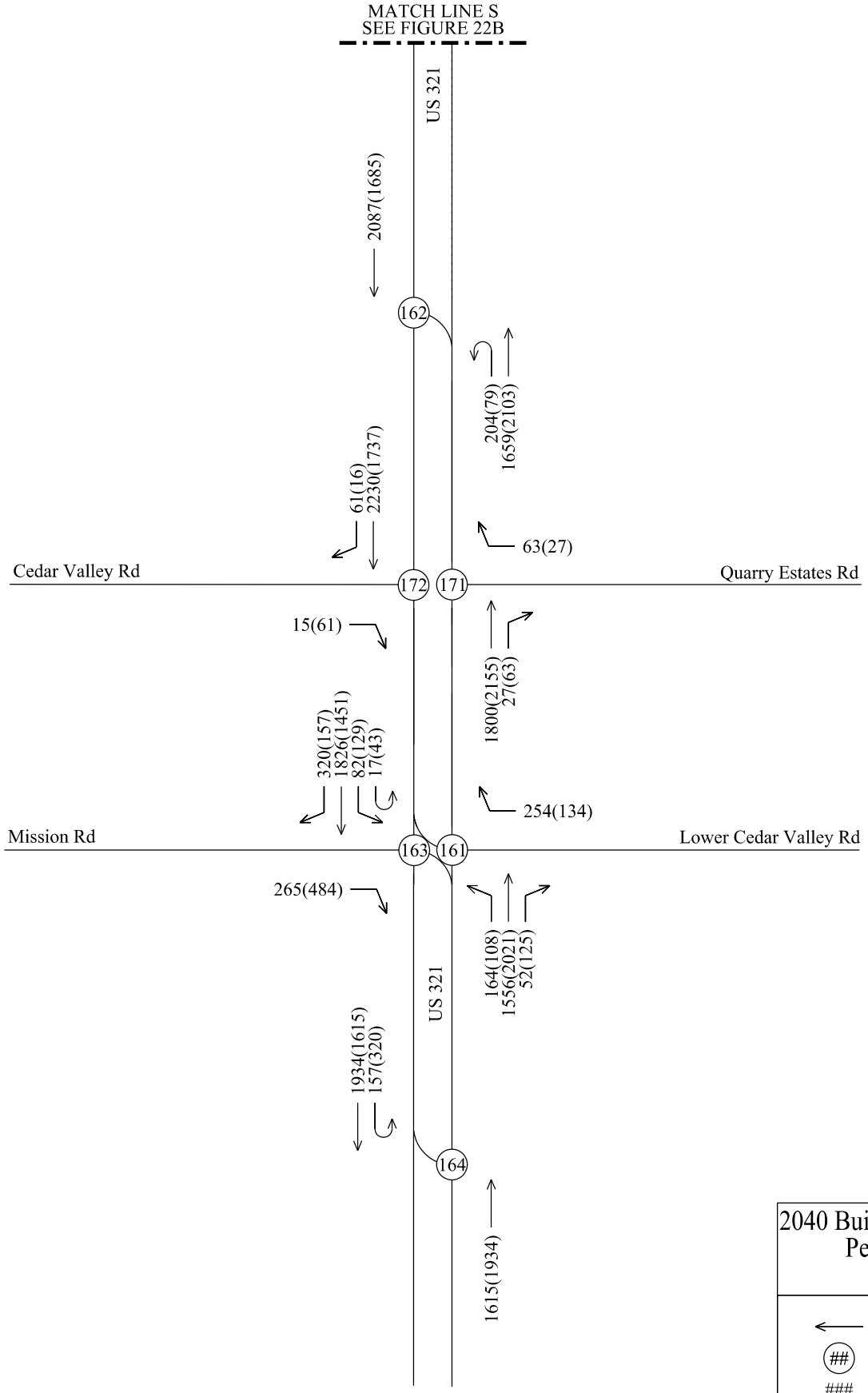
AECOM




# 2040 Build - Dudley Shoals Freeway Ramp LOS and Laneage Figure 21

- Existing Laneage
- Recommended Laneage
- (##) Intersection or HCS Number
- (## X)[## X] Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Proposed Signal
- (##)[##] HCS AM Peak and PM Peak LOS or v/c Ratio
- Ramp Merge/Diverge
- ###' Storage

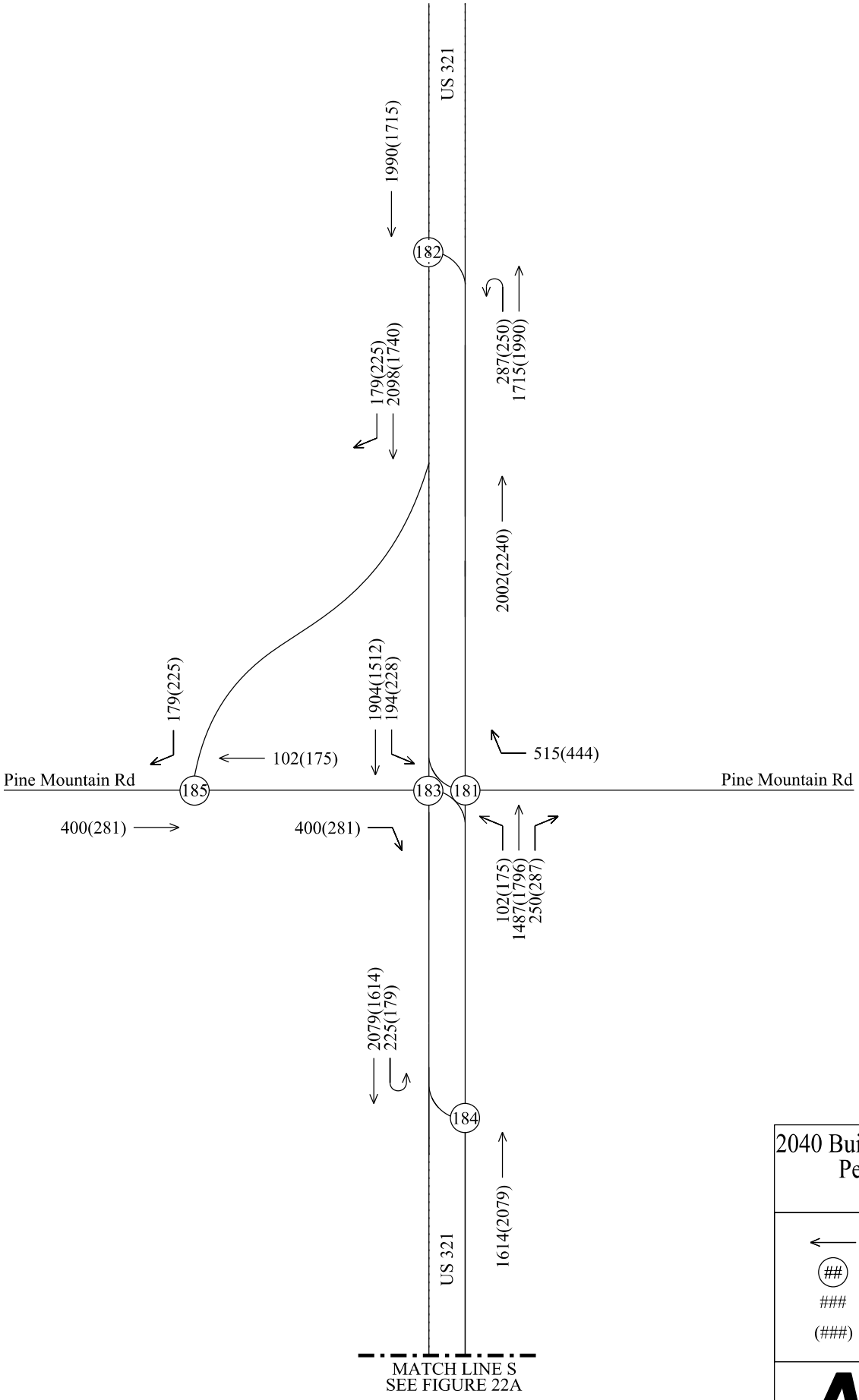
AECOM




2040 Build - Lower Cedar Valley
Peak Hour Volumes
Figure 22A

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

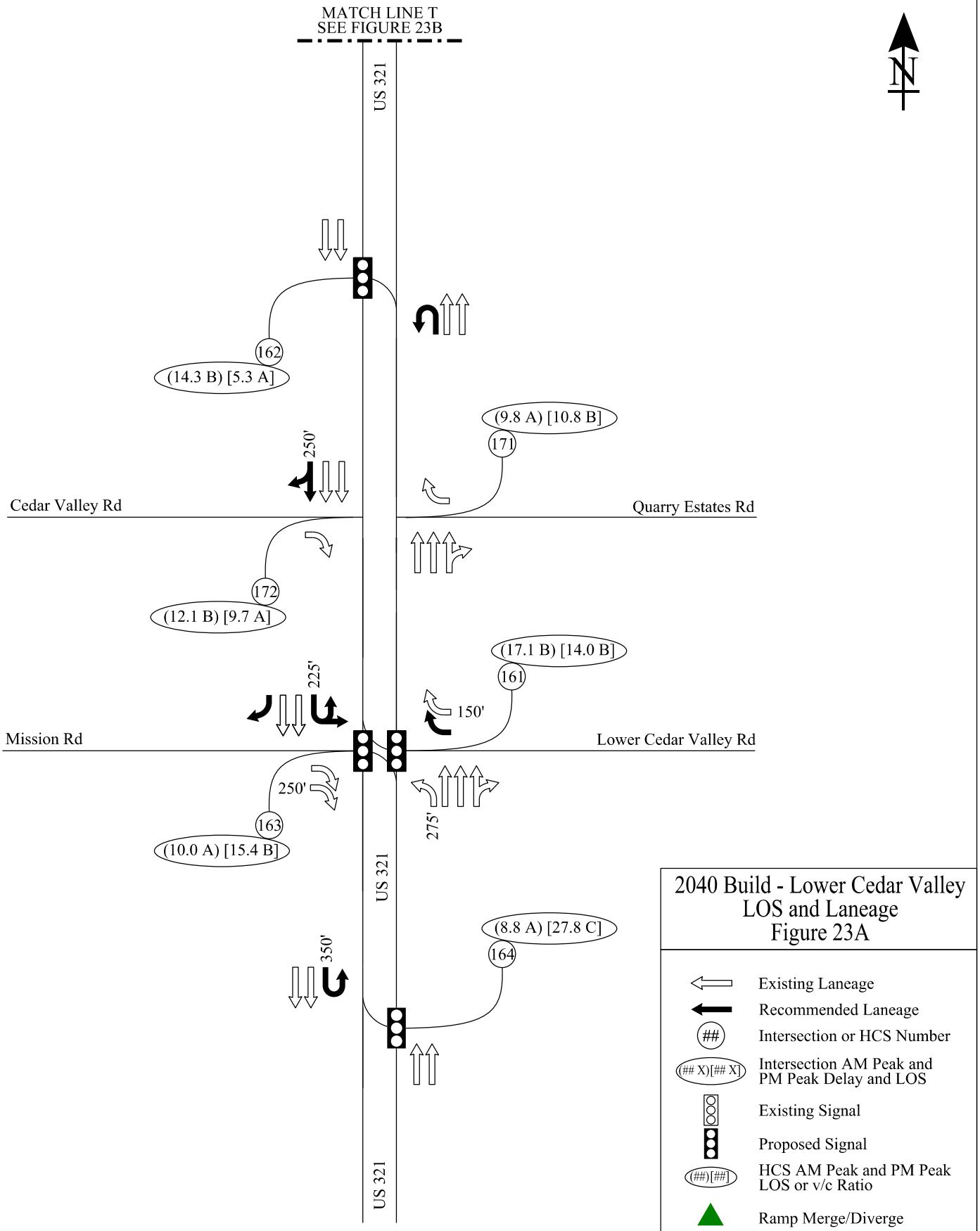
AECOM

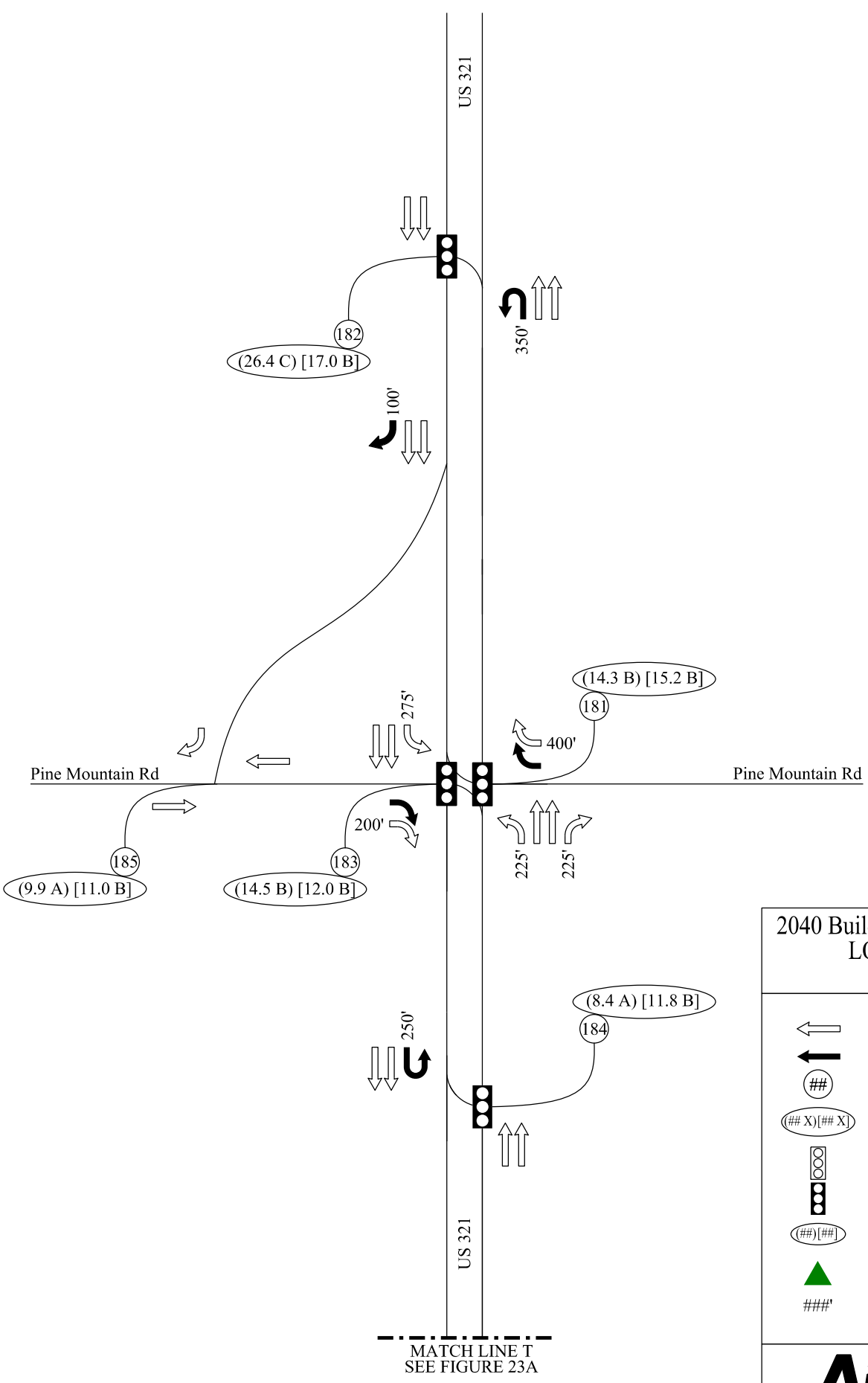



2040 Build - Lower Cedar Valley
Peak Hour Volumes
Figure 22B

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

AECOM

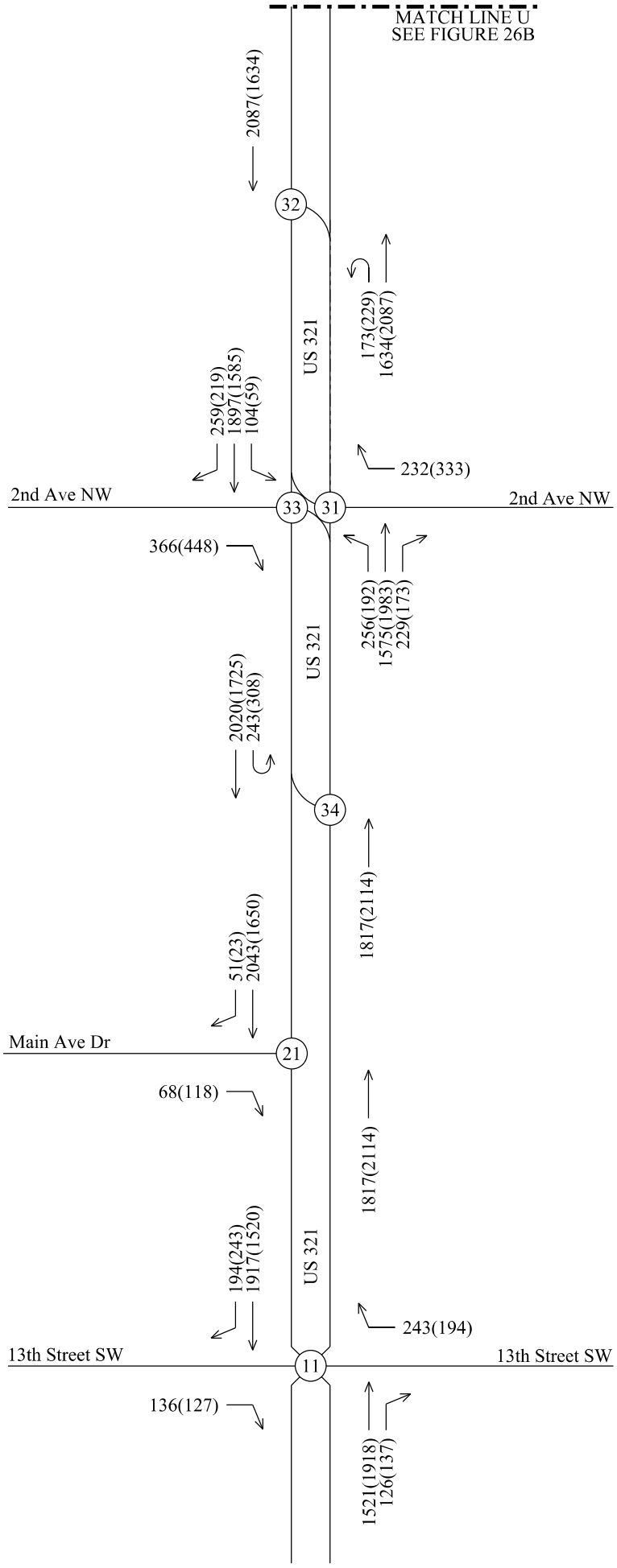

MATCH LINE T
SEE FIGURE 23B
US 321
N
162
(14.3 B) [5.3 A]
(9.8 A) [10.8 B]
171
250'
Cedar Valley Rd
Quarry Estates Rd
172
(12.1 B) [9.7 A]
(17.1 B) [14.0 B]
161
225'
150'
Mission Rd
Lower Cedar Valley Rd
250'
163
(10.0 A) [15.4 B]
275'
US 321
(8.8 A) [27.8 C]
164
350'
US 321
US 321
2040 Build - Lower Cedar Valley
LOS and Laneage
Figure 23A
Existing Laneage
Recommended Laneage
## Intersection or HCS Number
(## X)[## X] Intersection AM Peak and PM Peak Delay and LOS
Existing Signal
Proposed Signal
(##)[##] HCS AM Peak and PM Peak LOS or v/c Ratio
Ramp Merge/Diverge
###' Storage
AECOM




## 2040 Build - Lower Cedar Valley
## LOS and Laneage
## Figure 23B

- Existing Laneage
- Recommended Laneage
- (##) Intersection or HCS Number
- (## X)[## X] Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Proposed Signal
- (##)[##] HCS AM Peak and PM Peak LOS or v/c Ratio
- Ramp Merge/Diverge
- ###' Storage

AECOM

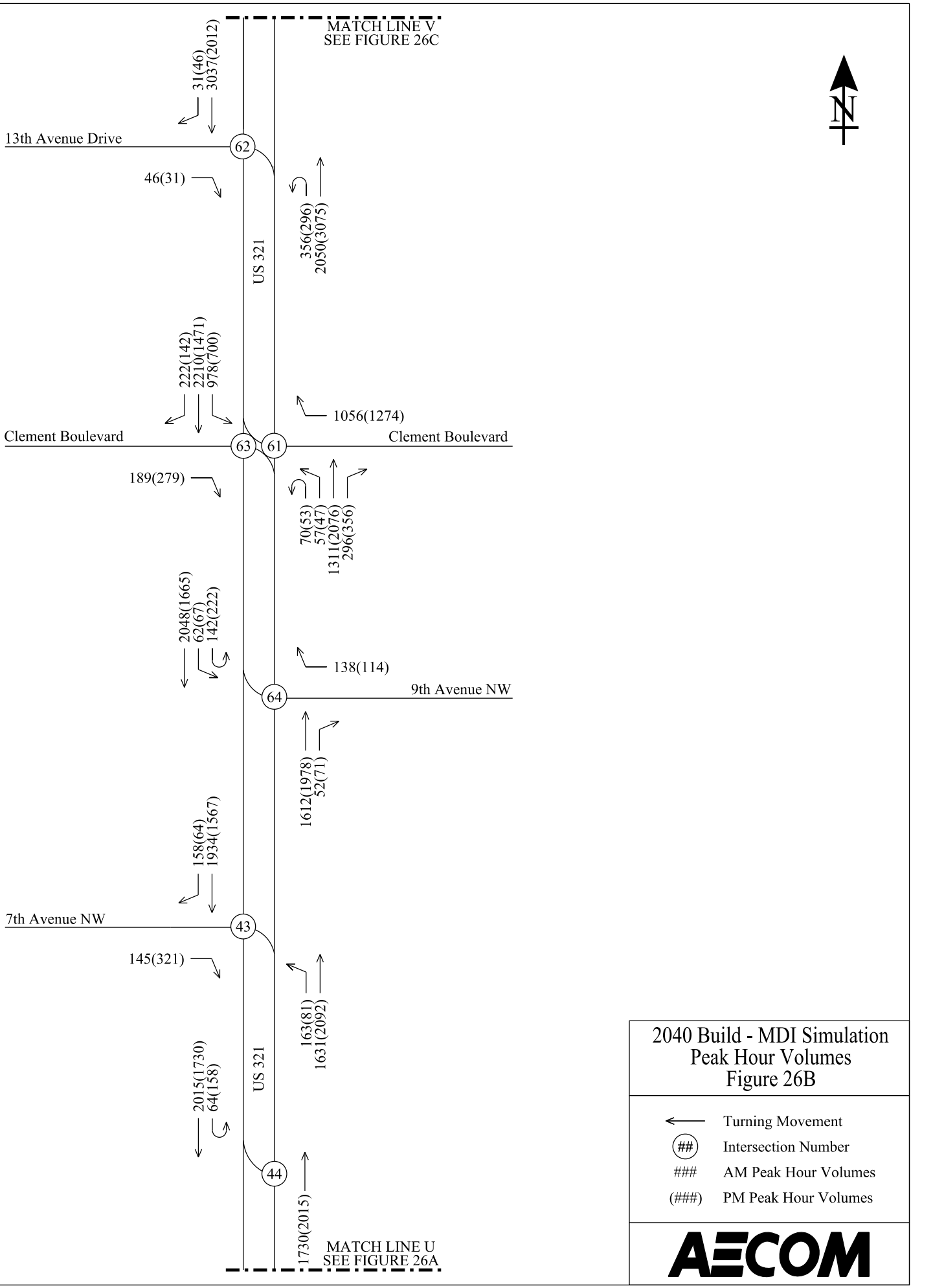


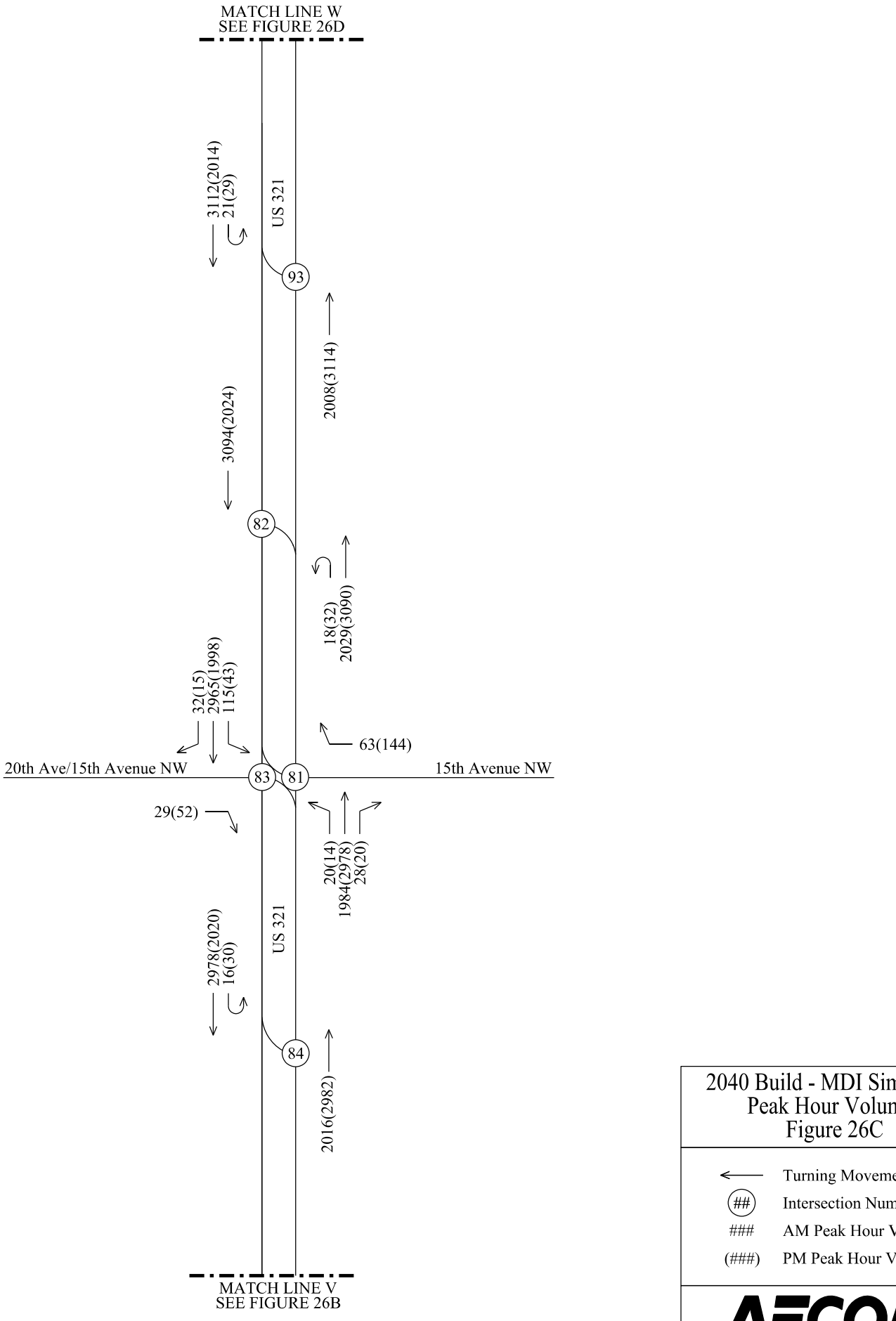


2040 Build - MDI Simulation
Peak Hour Volumes
Figure 26A

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

AECOM

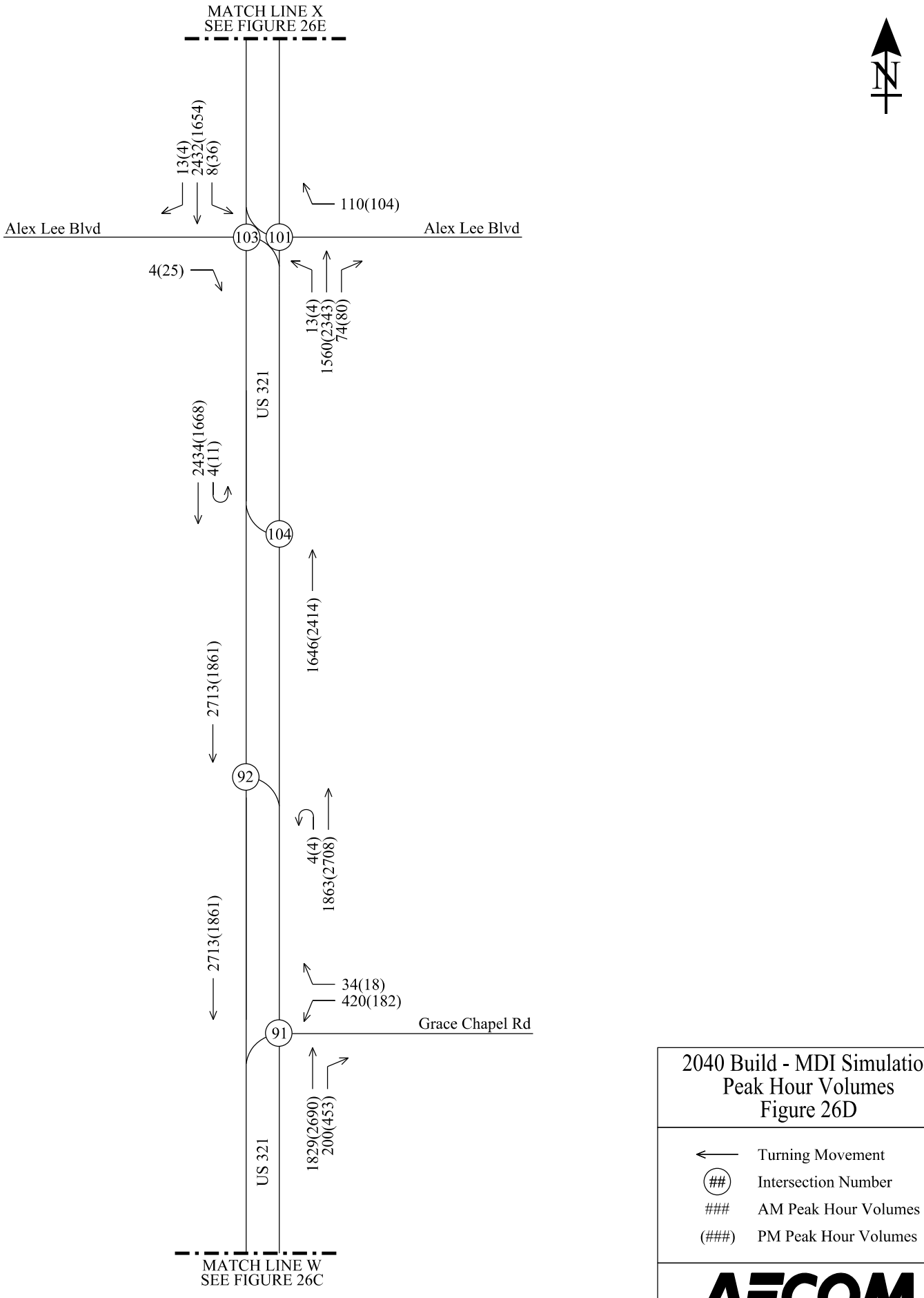

MATCH LINE V
SEE FIGURE 26C
31(46)
3037(2012)
13th Avenue Drive
62
46(31)
356(296)
2050(3075)
US 321
222(142)
2210(1471)
978(700)
1056(1274)
Clement Boulevard
63
61
Clement Boulevard
189(279)
70(53)
57(47)
1311(2076)
296(356)
2048(1665)
62(67)
142(222)
138(114)
64
9th Avenue NW
1612(1978)
52(71)
158(64)
1934(1567)
7th Avenue NW
43
145(321)
163(81)
1631(2092)
2015(1730)
64(158)
US 321
44
1730(2015)
MATCH LINE U
SEE FIGURE 26A
N
2040 Build - MDI Simulation
Peak Hour Volumes
Figure 26B
Turning Movement
## Intersection Number
### AM Peak Hour Volumes
(###) PM Peak Hour Volumes
AECOM




## 2040 Build - MDI Simulation
## Peak Hour Volumes
## Figure 26C

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

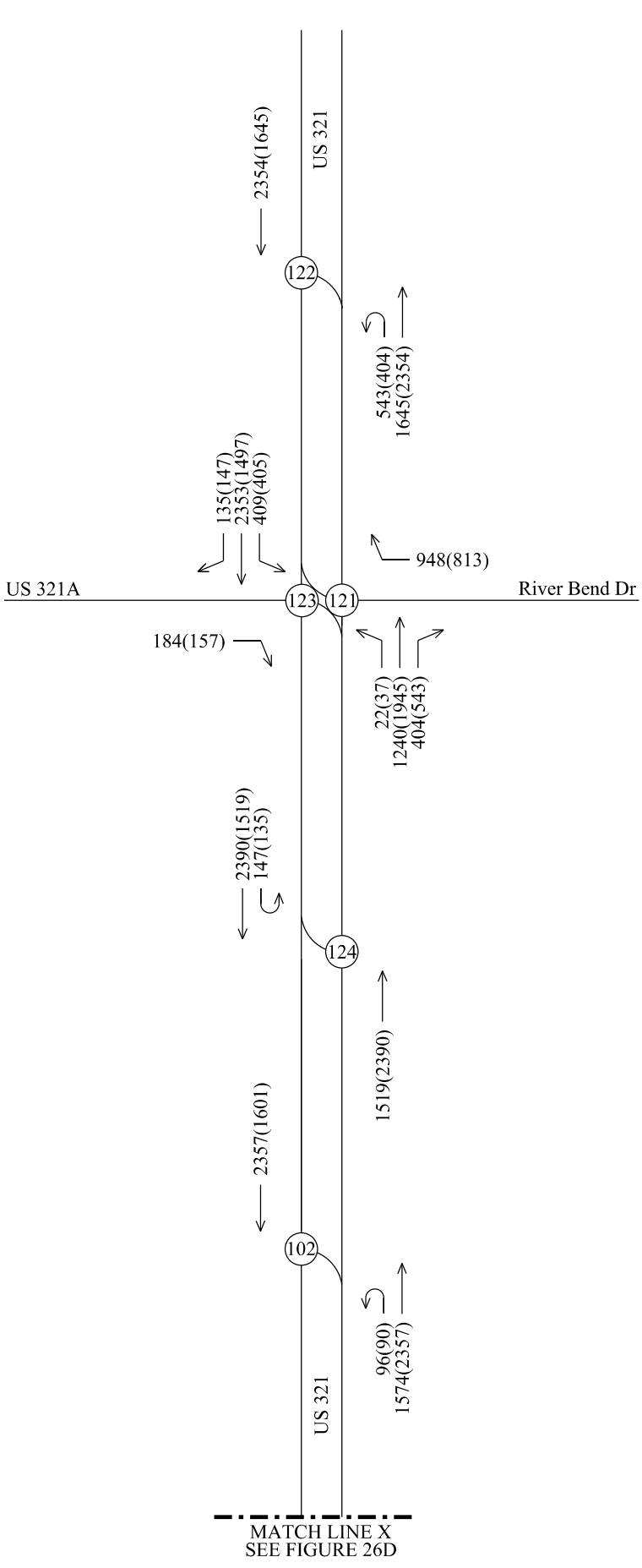
AECOM




2040 Build - MDI Simulation
Peak Hour Volumes
Figure 26D

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

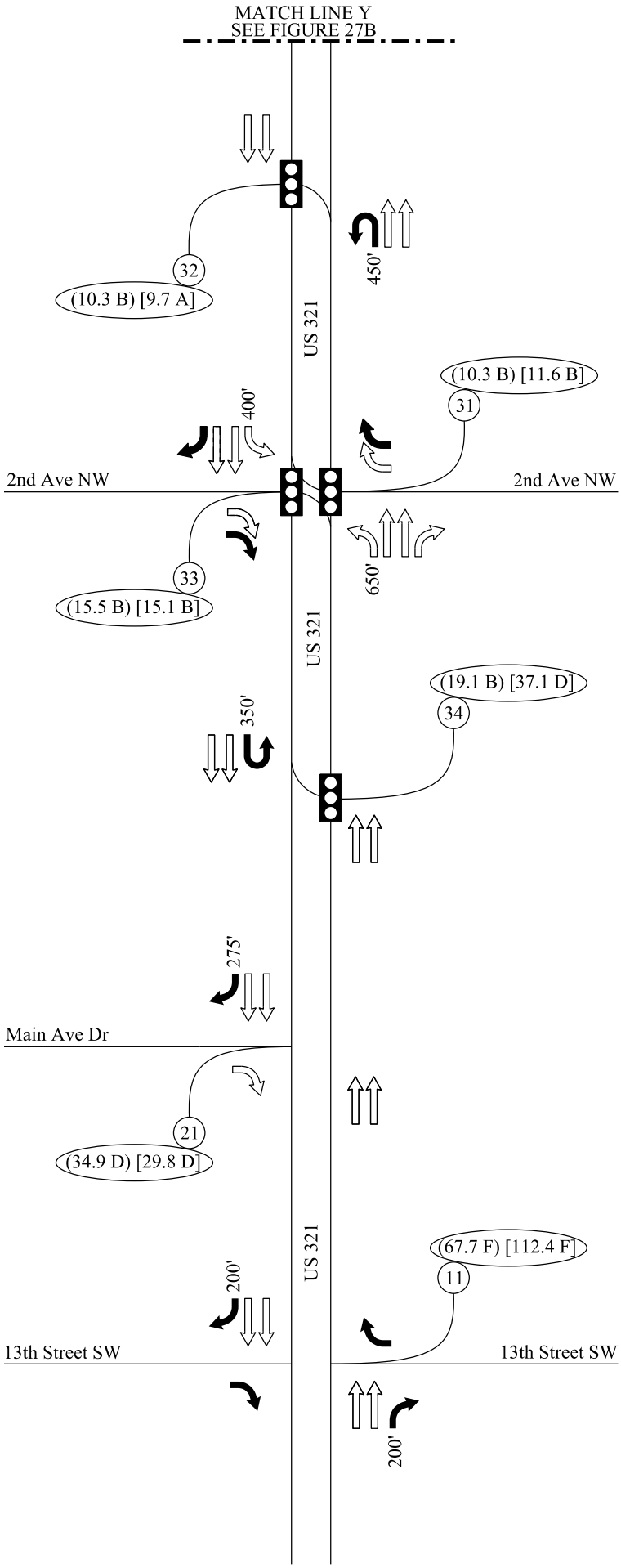
AECOM




2040 Build - MDI Simulation
Peak Hour Volumes
Figure 26E

| | |
|---|---|
| ← | Turning Movement |
| (##) | Intersection Number |
| ### | AM Peak Hour Volumes |
| (###) | PM Peak Hour Volumes |

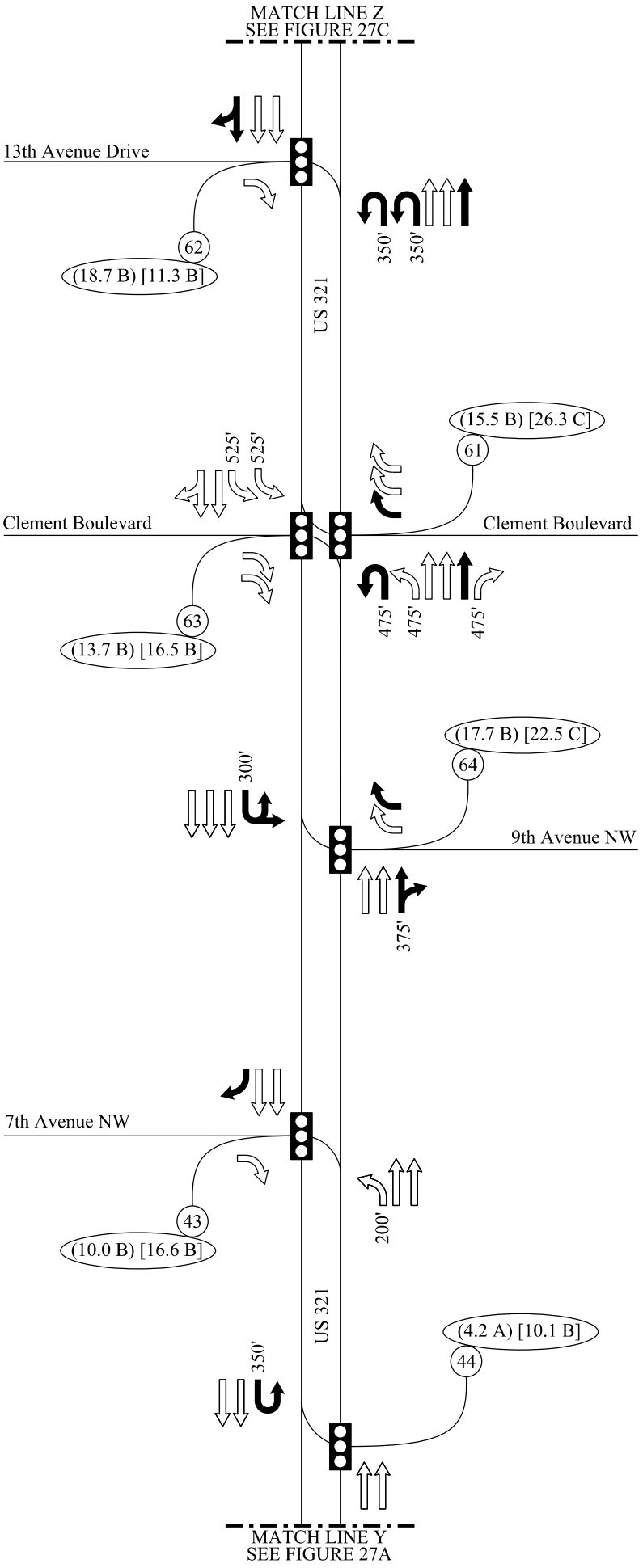
AECOM




## 2040 Build - MDI Simluation LOS and Laneage Figure 27A

- Existing Laneage
- Recommended Laneage
- ## — Intersection or HCS Number
- (## X)[## X] — Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Proposed Signal
- (##)[##] — HCS AM Peak and PM Peak LOS or v/c Ratio
- Ramp Merge/Diverge
- ###' — Storage

AECOM

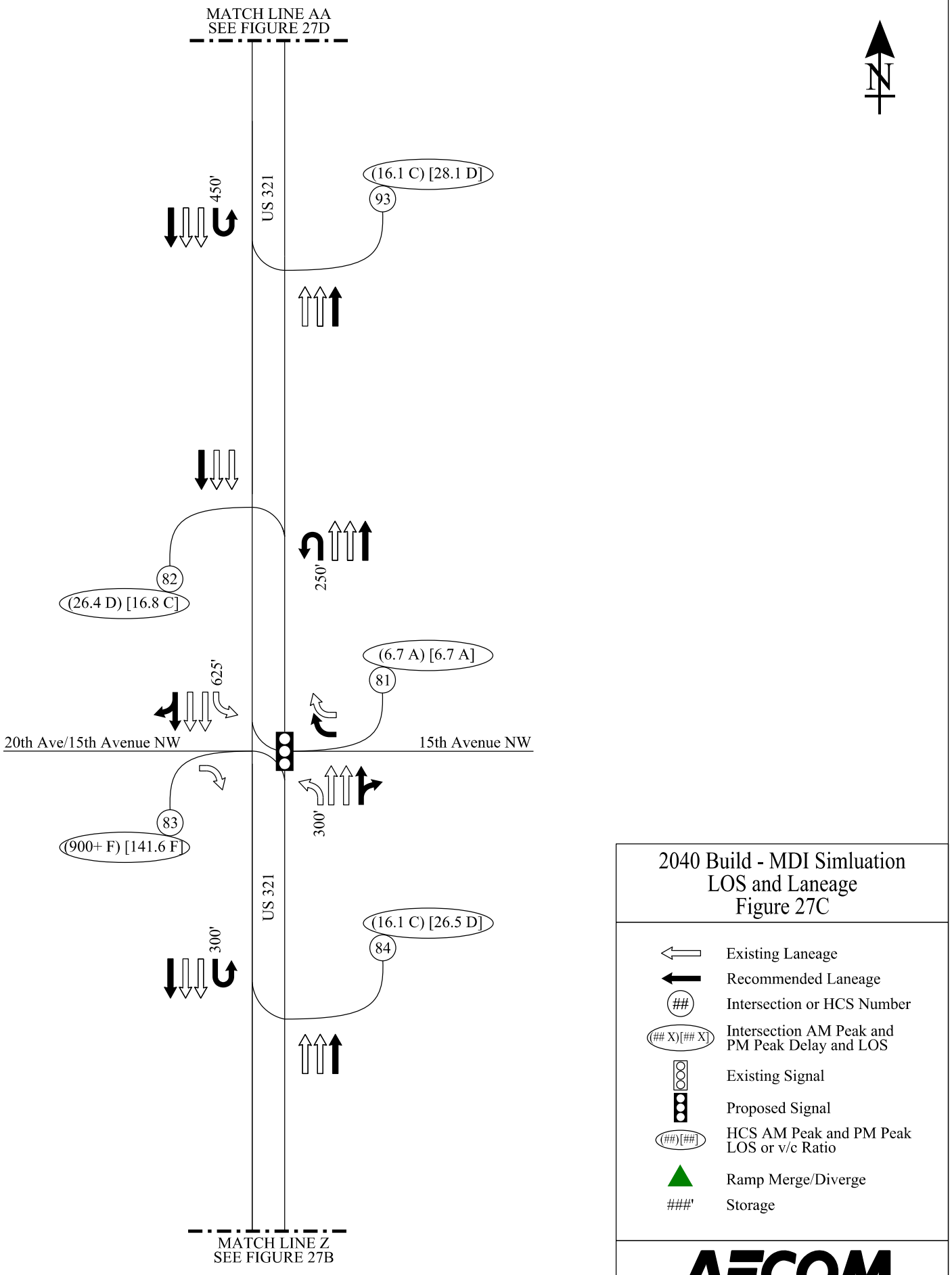



N

2040 Build - MDI Simluation
LOS and Laneage
Figure 27B

- Existing Laneage
- Recommended Laneage
- (##) Intersection or HCS Number
- (## X)[## X] Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Proposed Signal
- (##)[##] HCS AM Peak and PM Peak LOS or v/c Ratio
- Ramp Merge/Diverge
- ###' Storage

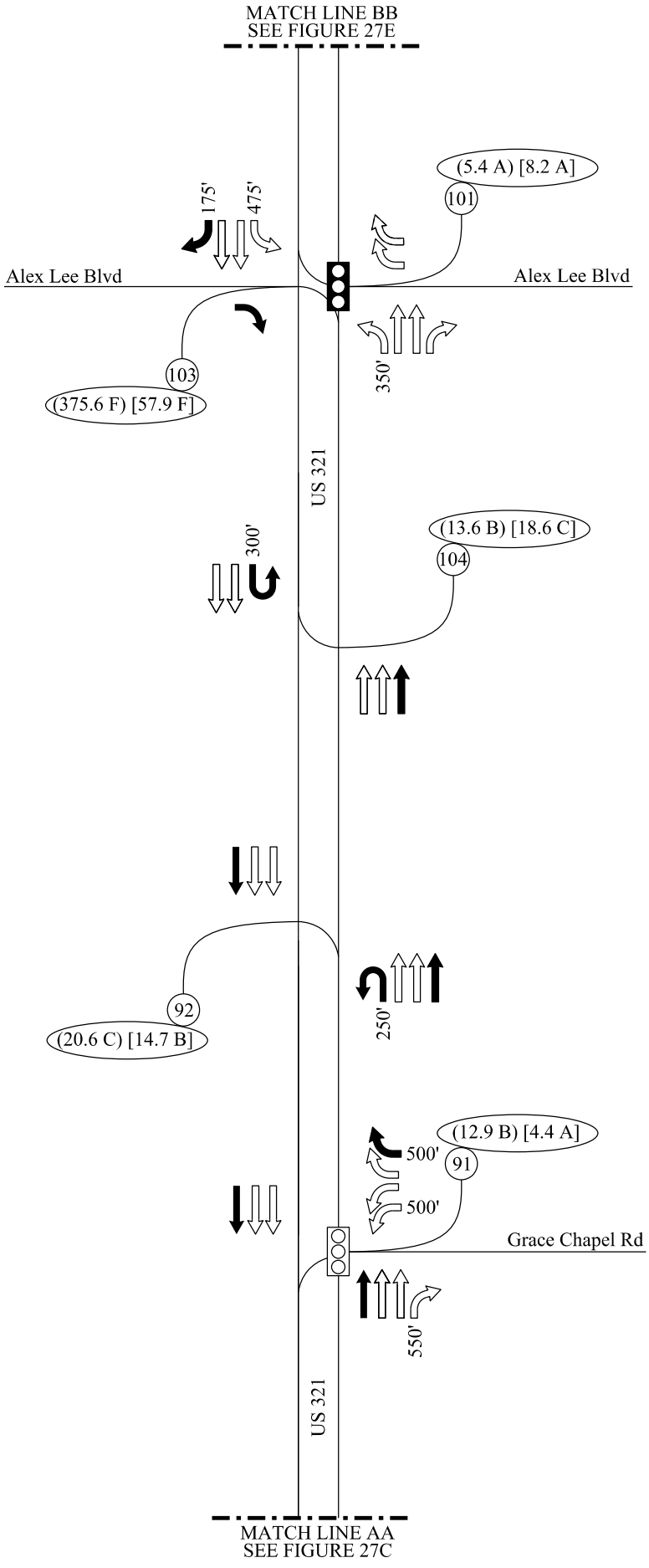
AECOM




## 2040 Build - MDI Simluation LOS and Laneage Figure 27C

- Existing Laneage
- Recommended Laneage
- ## — Intersection or HCS Number
- (## X)[## X] — Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Proposed Signal
- (##)[##] — HCS AM Peak and PM Peak LOS or v/c Ratio
- Ramp Merge/Diverge
- ###' — Storage

AECOM

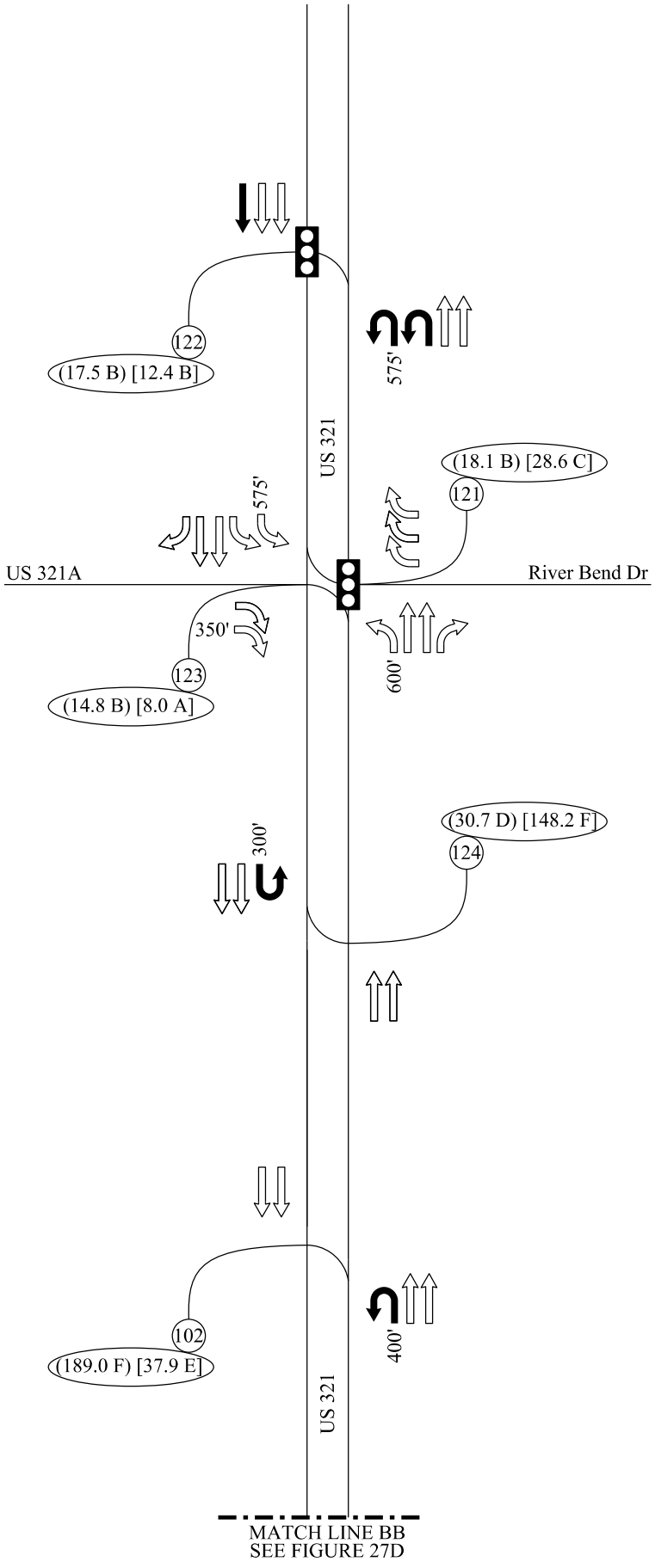



N

## 2040 Build - MDI Simluation LOS and Laneage Figure 27D

- Existing Laneage
- Recommended Laneage
- ## — Intersection or HCS Number
- (## X)[## X] — Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Proposed Signal
- (##)[##] — HCS AM Peak and PM Peak LOS or v/c Ratio
- Ramp Merge/Diverge
- ###' — Storage

AECOM




## 2040 Build - MDI Simluation
## LOS and Laneage
## Figure 27E

- Existing Laneage
- Recommended Laneage
- (##) Intersection or HCS Number
- (## X)[## X] Intersection AM Peak and PM Peak Delay and LOS
- Existing Signal
- Proposed Signal
- (##)[##] HCS AM Peak and PM Peak LOS or v/c Ratio
- Ramp Merge/Diverge
- ###' Storage

AECOM

APPENDIX A

# U-4700 Traffic Forecast

Kimley»Horn

February 28, 2017

421 Fayetteville St.
Suite 600
Raleigh, North Carolina
27601

Memorandum To: Gene Tarascio
Project Development Engineer
Project Development and Environmental Analysis

From: Taylor Honeycutt, PE
Kimley-Horn and Associates, Inc.

Subject: Traffic Forecast for U-4700 (US 321 widening) in Caldwell, Catawba and Burke Counties (Phase I)

Please find attached the Phase I and Phase II 2016 traffic estimates and 2040 traffic forecasts for U-4700 in Caldwell, Catawba and Burke Counties which concerns the widening of US 321 from 4-lane divided to 6-lane divided from Southwest Boulevard in Caldwell County to US 70 in Catawba County. The following scenarios are provided:

- Base Year 2016 No-Build
- Base Year 2016 Build 1 (Interchange Configuration 1 at 13th Street)
- Base Year 2016 Build 2 (Interchange Configuration 2 at 13th Street)
- Future Year 2040 No-Build
- Future Year 2040 Build 1 (Interchange Configuration 1 at 13th Street)
- Future Year 2040 Build 2 (Interchange Configuration 2 at 13th Street)

Brian Wert, Dean Ledbetter, and Paul Schroeder of NCDOT along with John Marshall of the Western Piedmont COG were contacted during the development of this forecast. Teresa Gresham of Kimley-Horn was also consulted regarding forecast assumptions and alternatives.

This forecast is being completed in two phases. Phase I consisted of only the intersections and surrounding area of the following:

US 321 @ Grace Chapel Road
US 321 @ Falls Avenue
US 321 @ Clement Boulevard
US 321 @ 13th Street SW

Phase I was completed and accepted on December 21, 2016. The remaining intersections are provided in the following Phase II forecast. Phase I intersections are included for reference.

Certain assumptions were made in the development of the forecast:

***Fiscal Constraint.*** Within the Metropolitan Planning Organization (MPO) area, future forecasts are based on projects included in the Financial Plan for the 2040 Greater Hickory Long Range Transportation Plan (LRTP). This information is included in the official version of the Greater Hickory Regional Model.

**Future Conditions and Development Activity.** The forecast was developed using output from the Greater Hickory Regional Model. Assumptions about future development activity and changes in the distribution of population and employment in the forecast study area are implicit in the model.

**Forecast Methodology.** Base year 2016 estimates and Horizon Year 2040 forecasts provided in the attached forecast were developed using a method under which observed traffic data as well as 2010 and 2040 model output were considered.

To determine any intermediate years, straight-line interpolation may be used. AADT volumes may be extrapolated for up to two years immediately following 2040. If it is determined that any of these assumptions have become inconsistent with the project and surrounding area activity, please request updated projections at this location.

This forecast was reviewed and approved by the Transportation Planning Branch on 02/24/2017.

Cc: Keith Dixon, Transportation Planning Branch
Terry Arellano, PE, Transportation Planning Branch
James Dunlop, PE, Congestion Management Section
Clark Morrison, PhD, PE, Pavement Management Unit
Glenn Mumford, PE, Roadway Design Unit
Anil Panicker, Division Planning Engineer
Dean Ledbetter, Division Planning Engineer
John Marshall, MPO Manager, Greater Hickory MPO

TEL: 919-677-2000
FAX: 919-677-2050


# 2016

AVERAGE ANNUAL DAILY TRAFFIC

NO BUILD

SHEET 1 OF 4

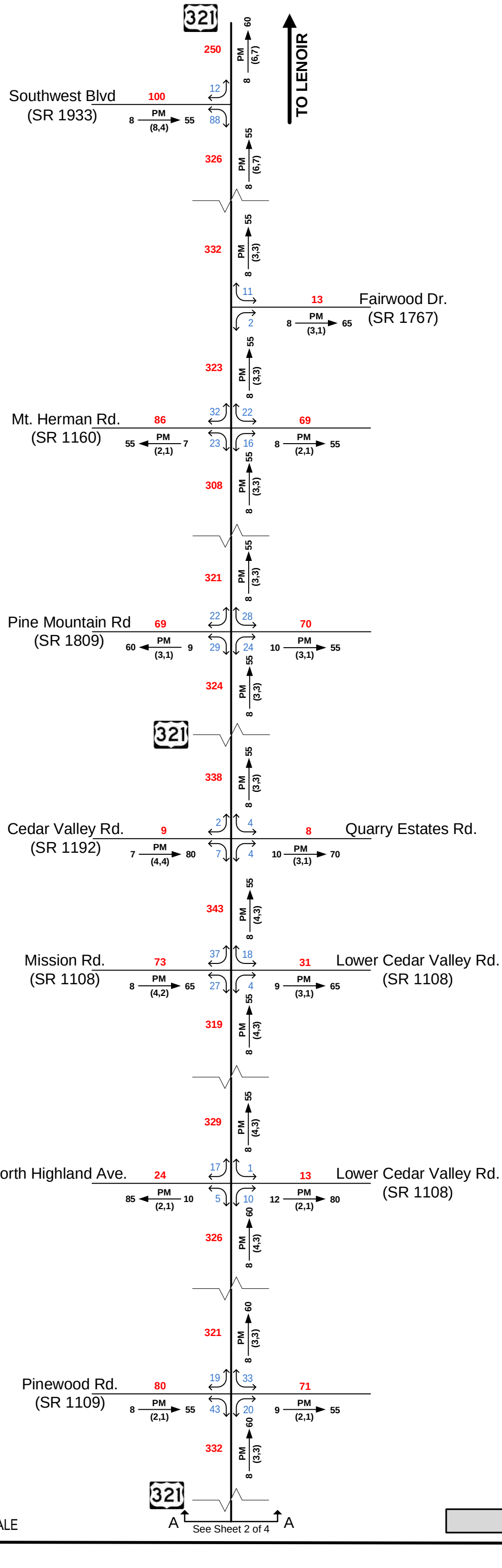
## L E G E N D

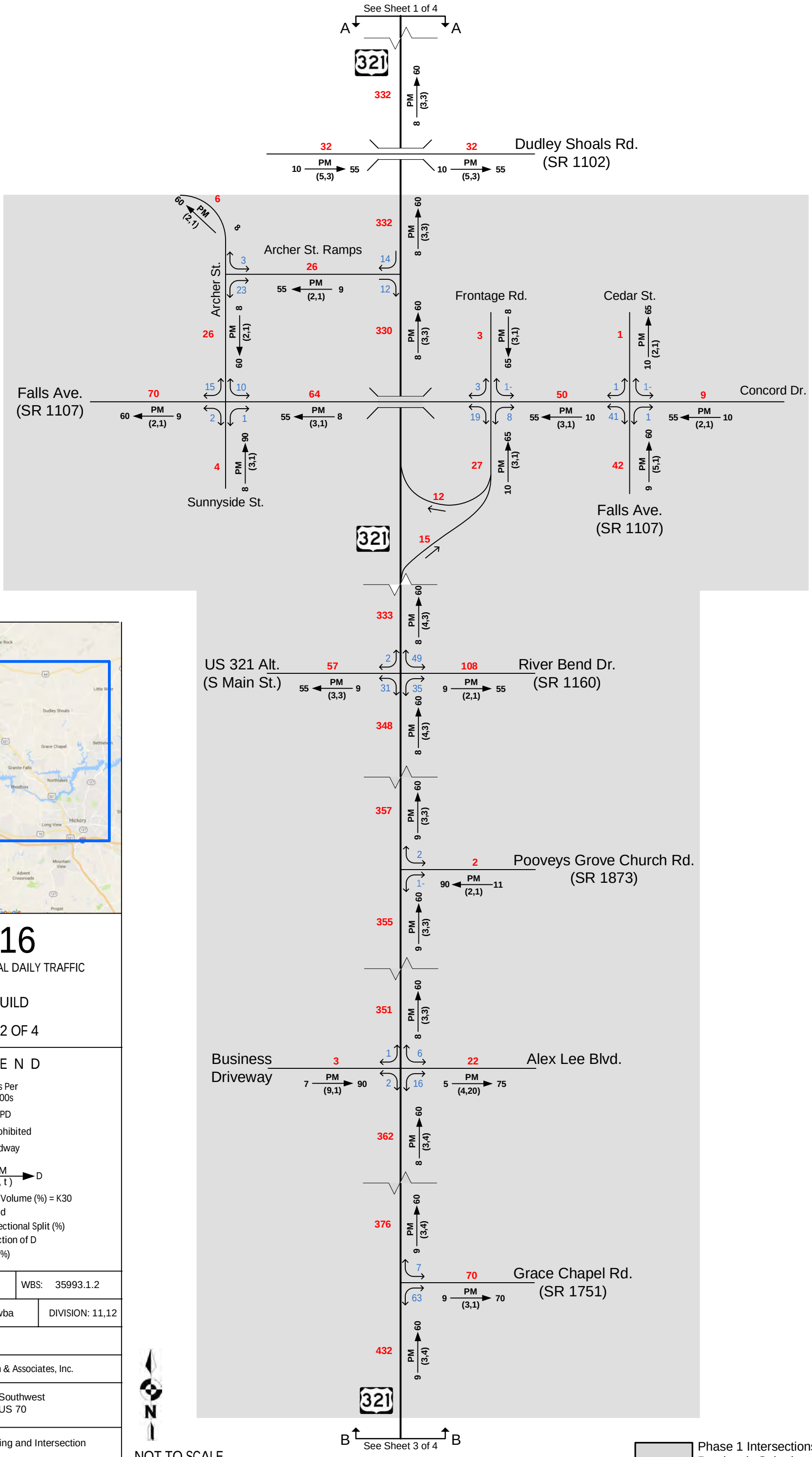
| | |
|---|---|
| ### | No. of Vehicles Per Day (VPD) in 100s |
| 1- | Less than 50 VPD |
| X | Movement Prohibited |
| ---------- | Proposed Roadway |

DHV — PM ( d, t ) → D

| | |
|---|---|
| DHV | Design Hourly Volume (%) = K30 |
| PM | PM Peak Period |
| D | Peak Hour Directional Split (%) |
| → | Indicates Direction of D |
| ( d, t ) | Duals, TT-STs (%) |

| | |
|---|---|
| TIP: U-4700 | WBS: 35993.1.2 |
| COUNTY: Caldwell, Catawba | DIVISION: 11,12 |
| DATE: February 22, 2017 | |
| PREPARED BY: Kimley-Horn & Associates, Inc. | |
| LOCATION: US 321 from Southwest Boulevard to US 70 | |
| PROJECT: US 321 Widening and Intersection Improvements | |









# 2016

AVERAGE ANNUAL DAILY TRAFFIC

NO BUILD

SHEET 2 OF 4

## L E G E N D

| | |
|---|---|
| ### | No. of Vehicles Per Day (VPD) in 100s |
| 1- | Less than 50 VPD |
| X | Movement Prohibited |
| ---------- | Proposed Roadway |

DHV — PM (d, t) → D

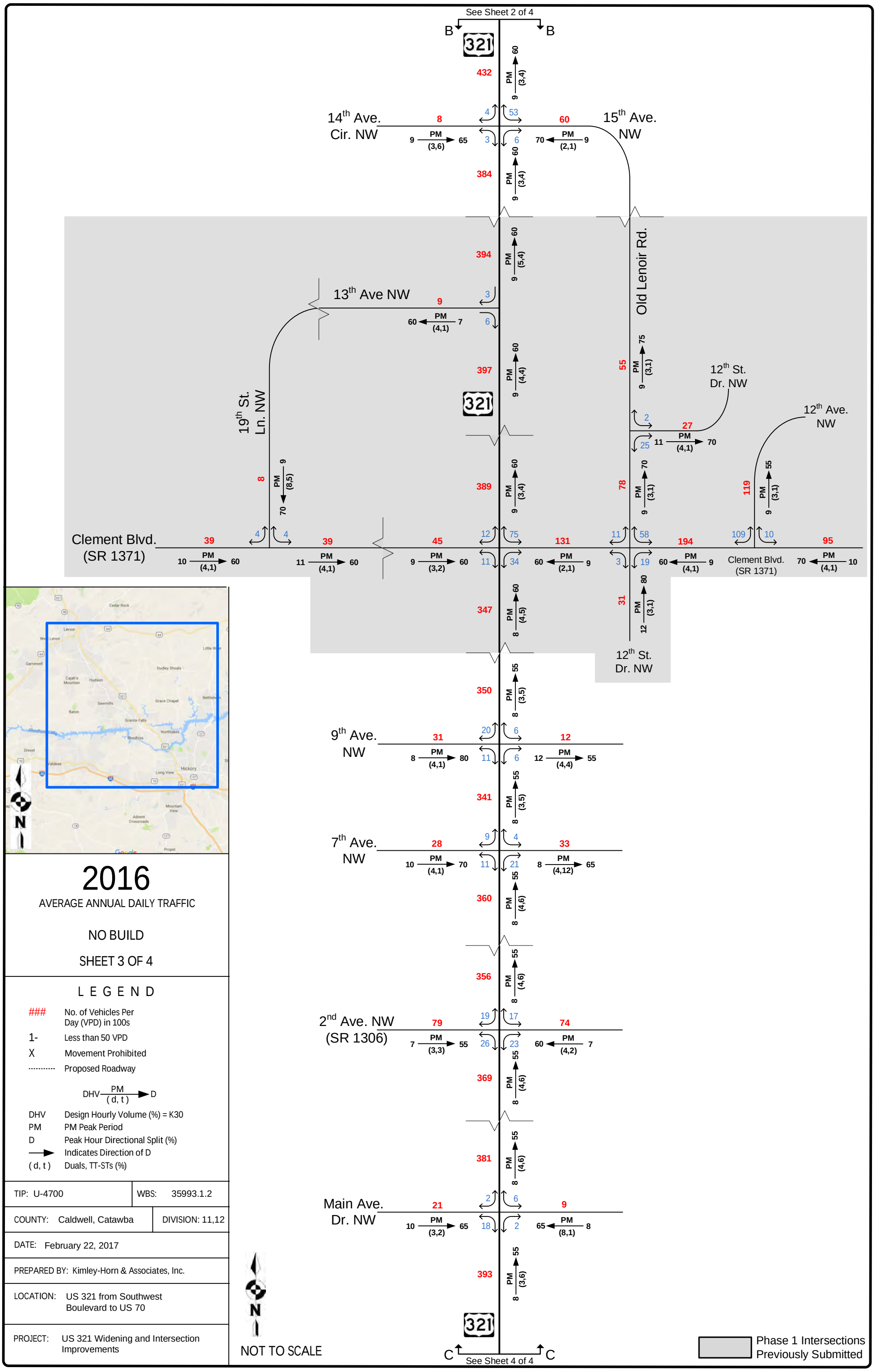
| | |
|---|---|
| DHV | Design Hourly Volume (%) = K30 |
| PM | PM Peak Period |
| D | Peak Hour Directional Split (%) |
| → | Indicates Direction of D |
| ( d, t ) | Duals, TT-STs (%) |

| | |
|---|---|
| TIP: U-4700 | WBS: 35993.1.2 |
| COUNTY: Caldwell, Catawba | DIVISION: 11,12 |
| DATE: February 22, 2017 | |
| PREPARED BY: Kimley-Horn & Associates, Inc. | |
| LOCATION: US 321 from Southwest Boulevard to US 70 | |
| PROJECT: US 321 Widening and Intersection Improvements | |

N

NOT TO SCALE

Phase 1 Intersections Previously Submitted







# 2016

AVERAGE ANNUAL DAILY TRAFFIC

NO BUILD

SHEET 3 OF 4

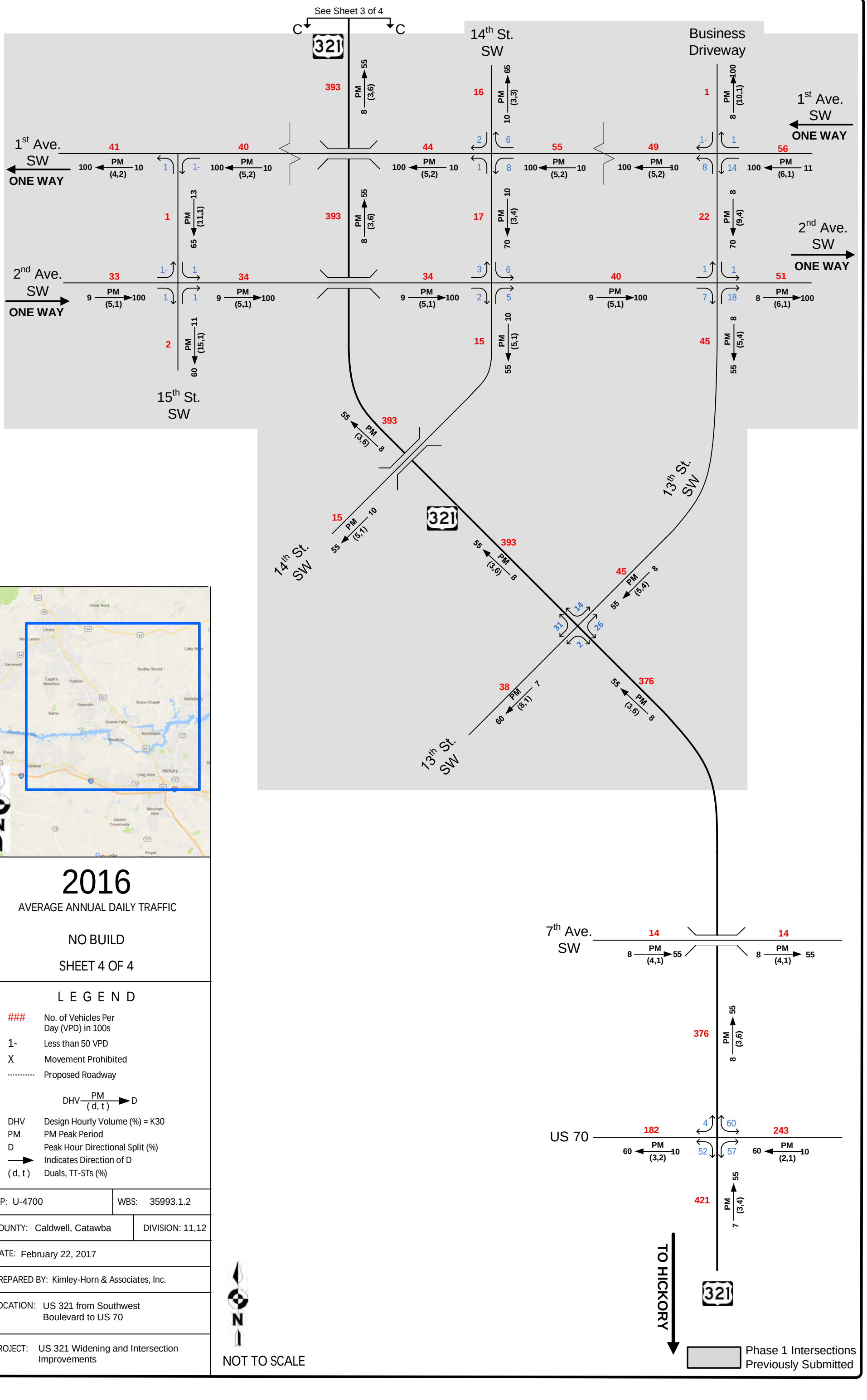
## L E G E N D

| | |
|---|---|
| ### | No. of Vehicles Per Day (VPD) in 100s |
| 1- | Less than 50 VPD |
| X | Movement Prohibited |
| ---------- | Proposed Roadway |

DHV — PM (d, t) → D

| | |
|---|---|
| DHV | Design Hourly Volume (%) = K30 |
| PM | PM Peak Period |
| D | Peak Hour Directional Split (%) |
| → | Indicates Direction of D |
| ( d, t ) | Duals, TT-STs (%) |

| | |
|---|---|
| TIP: U-4700 | WBS: 35993.1.2 |
| COUNTY: Caldwell, Catawba | DIVISION: 11,12 |
| DATE: February 22, 2017 | |
| PREPARED BY: Kimley-Horn & Associates, Inc. | |
| LOCATION: US 321 from Southwest Boulevard to US 70 | |
| PROJECT: US 321 Widening and Intersection Improvements | |







# 2016

AVERAGE ANNUAL DAILY TRAFFIC

NO BUILD

SHEET 4 OF 4

## L E G E N D

| | |
|---|---|
| ### | No. of Vehicles Per Day (VPD) in 100s |
| 1- | Less than 50 VPD |
| X | Movement Prohibited |
| ---------- | Proposed Roadway |

DHV — PM (d, t) → D

| | |
|---|---|
| DHV | Design Hourly Volume (%) = K30 |
| PM | PM Peak Period |
| D | Peak Hour Directional Split (%) |
| → | Indicates Direction of D |
| ( d, t ) | Duals, TT-STs (%) |

| | |
|---|---|
| TIP: U-4700 | WBS: 35993.1.2 |
| COUNTY: Caldwell, Catawba | DIVISION: 11,12 |
| DATE: February 22, 2017 | |
| PREPARED BY: Kimley-Horn & Associates, Inc. | |
| LOCATION: US 321 from Southwest Boulevard to US 70 | |
| PROJECT: US 321 Widening and Intersection Improvements | |


# 2016

AVERAGE ANNUAL DAILY TRAFFIC

BUILD 1

SHEET 1 OF 4

## L E G E N D

| | |
|---|---|
| ### | No. of Vehicles Per Day (VPD) in 100s |
| 1- | Less than 50 VPD |
| X | Movement Prohibited |
| ---------- | Proposed Roadway |

DHV — PM ( d, t ) → D

| | |
|---|---|
| DHV | Design Hourly Volume (%) = K30 |
| PM | PM Peak Period |
| D | Peak Hour Directional Split (%) |
| → | Indicates Direction of D |
| ( d, t ) | Duals, TT-STs (%) |

| | |
|---|---|
| TIP: U-4700 | WBS: 35993.1.2 |
| COUNTY: Caldwell, Catawba | DIVISION: 11,12 |
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| PREPARED BY: Kimley-Horn & Associates, Inc. | |
| LOCATION: US 321 from Southwest Boulevard to US 70 | |
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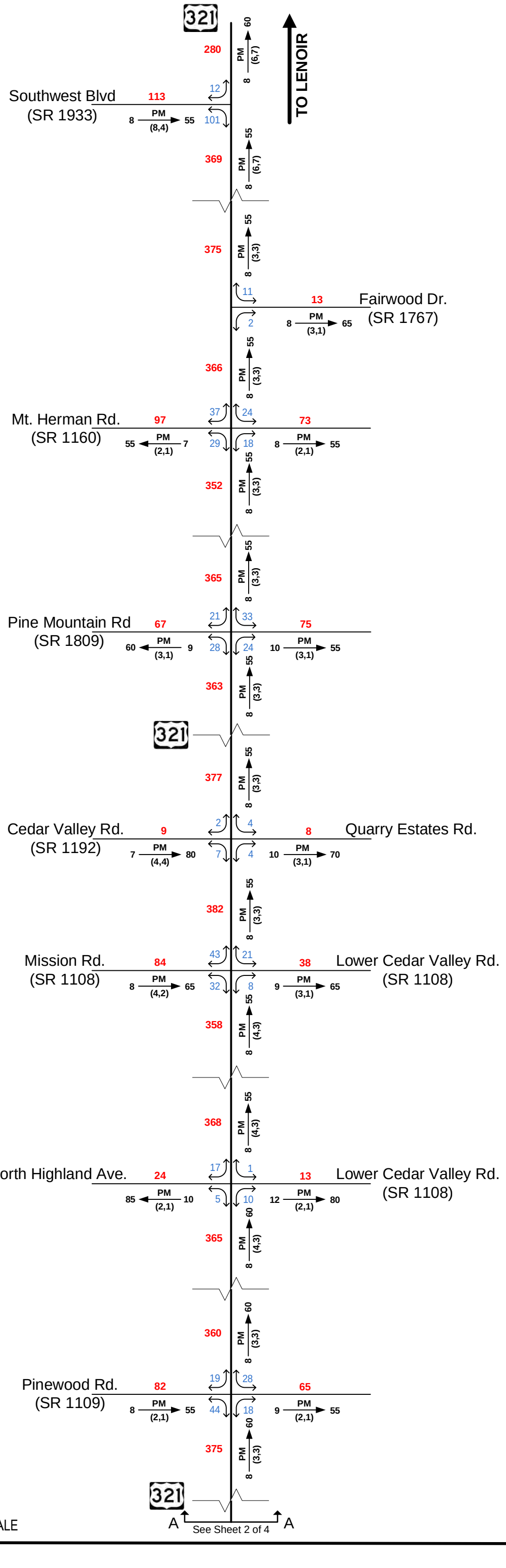
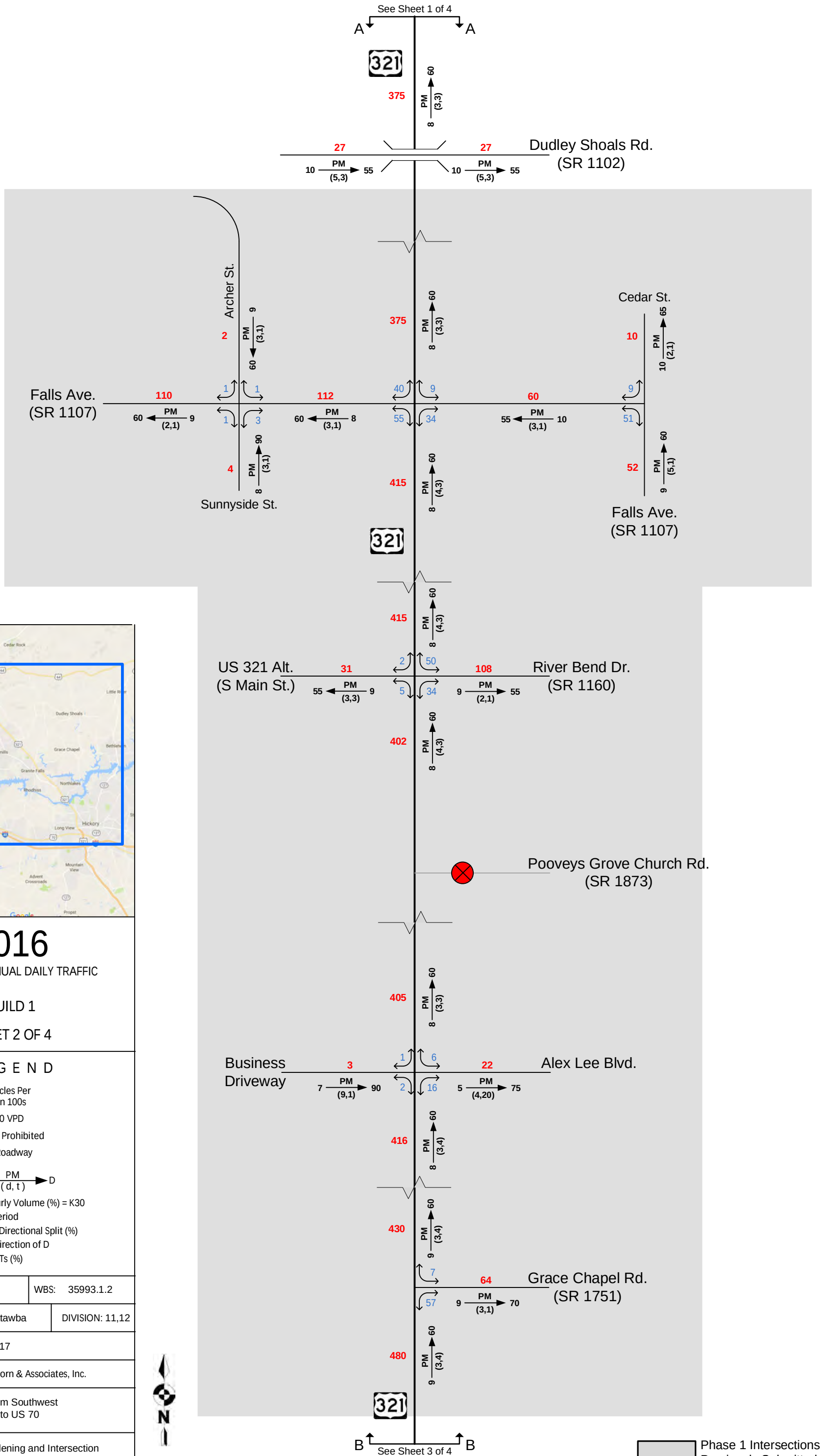
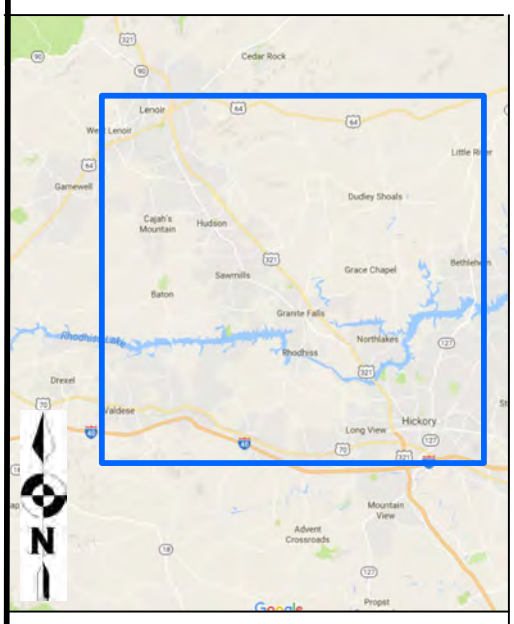




NOT TO SCALE




# 2016

AVERAGE ANNUAL DAILY TRAFFIC

BUILD 1

SHEET 2 OF 4

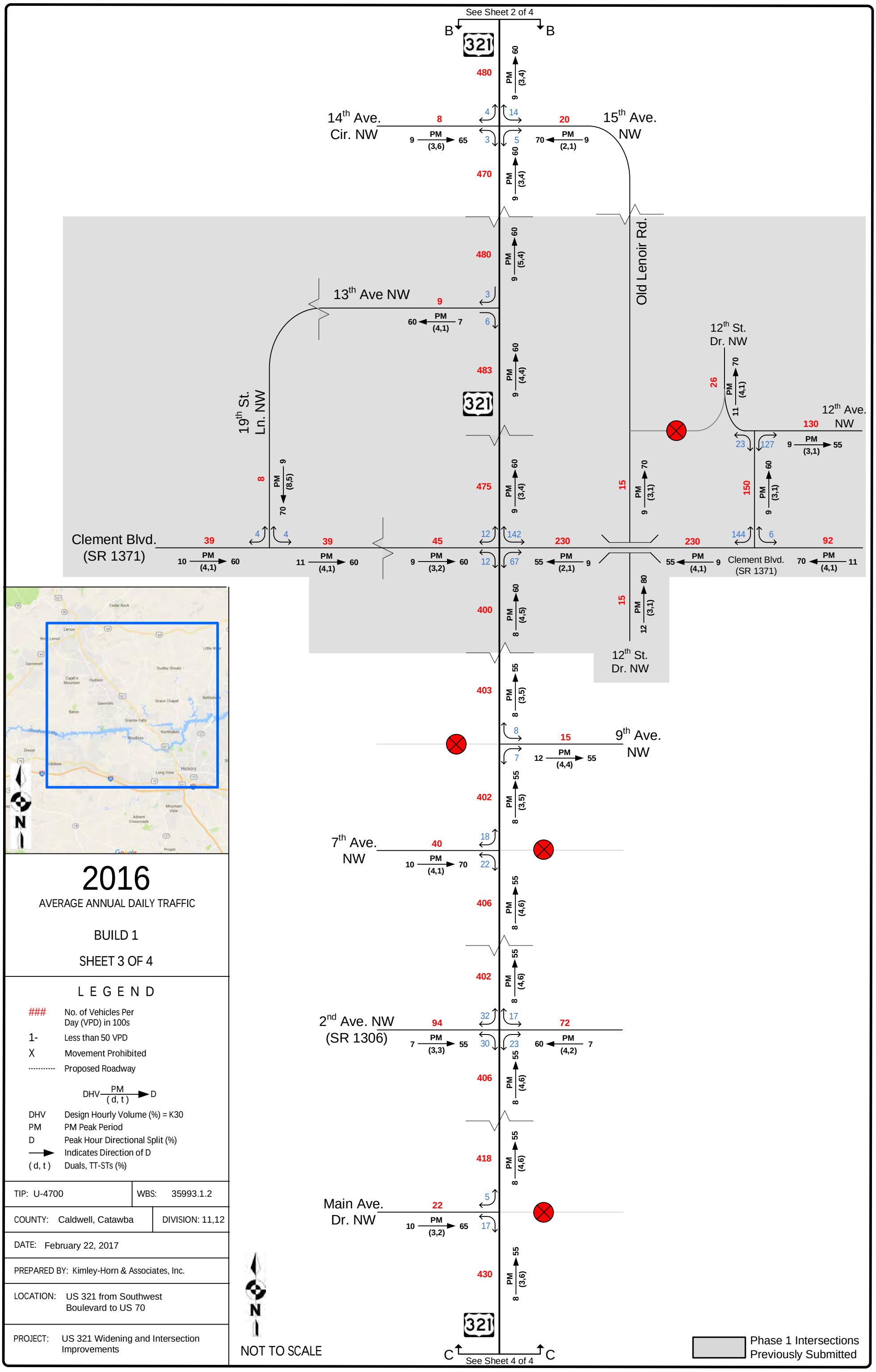
## L E G E N D

| | |
|---|---|
| ### | No. of Vehicles Per Day (VPD) in 100s |
| 1- | Less than 50 VPD |
| X | Movement Prohibited |
| ---------- | Proposed Roadway |

DHV — PM (d, t) → D

| | |
|---|---|
| DHV | Design Hourly Volume (%) = K30 |
| PM | PM Peak Period |
| D | Peak Hour Directional Split (%) |
| → | Indicates Direction of D |
| ( d, t ) | Duals, TT-STs (%) |

| | |
|---|---|
| TIP: U-4700 | WBS: 35993.1.2 |
| COUNTY: Caldwell, Catawba | DIVISION: 11,12 |
| DATE: February 22, 2017 | |
| PREPARED BY: Kimley-Horn & Associates, Inc. | |
| LOCATION: US 321 from Southwest Boulevard to US 70 | |
| PROJECT: US 321 Widening and Intersection Improvements | |







# 2016

AVERAGE ANNUAL DAILY TRAFFIC

BUILD 1

SHEET 3 OF 4

## L E G E N D

| | |
|---|---|
| ### | No. of Vehicles Per Day (VPD) in 100s |
| 1- | Less than 50 VPD |
| X | Movement Prohibited |
| ---------- | Proposed Roadway |

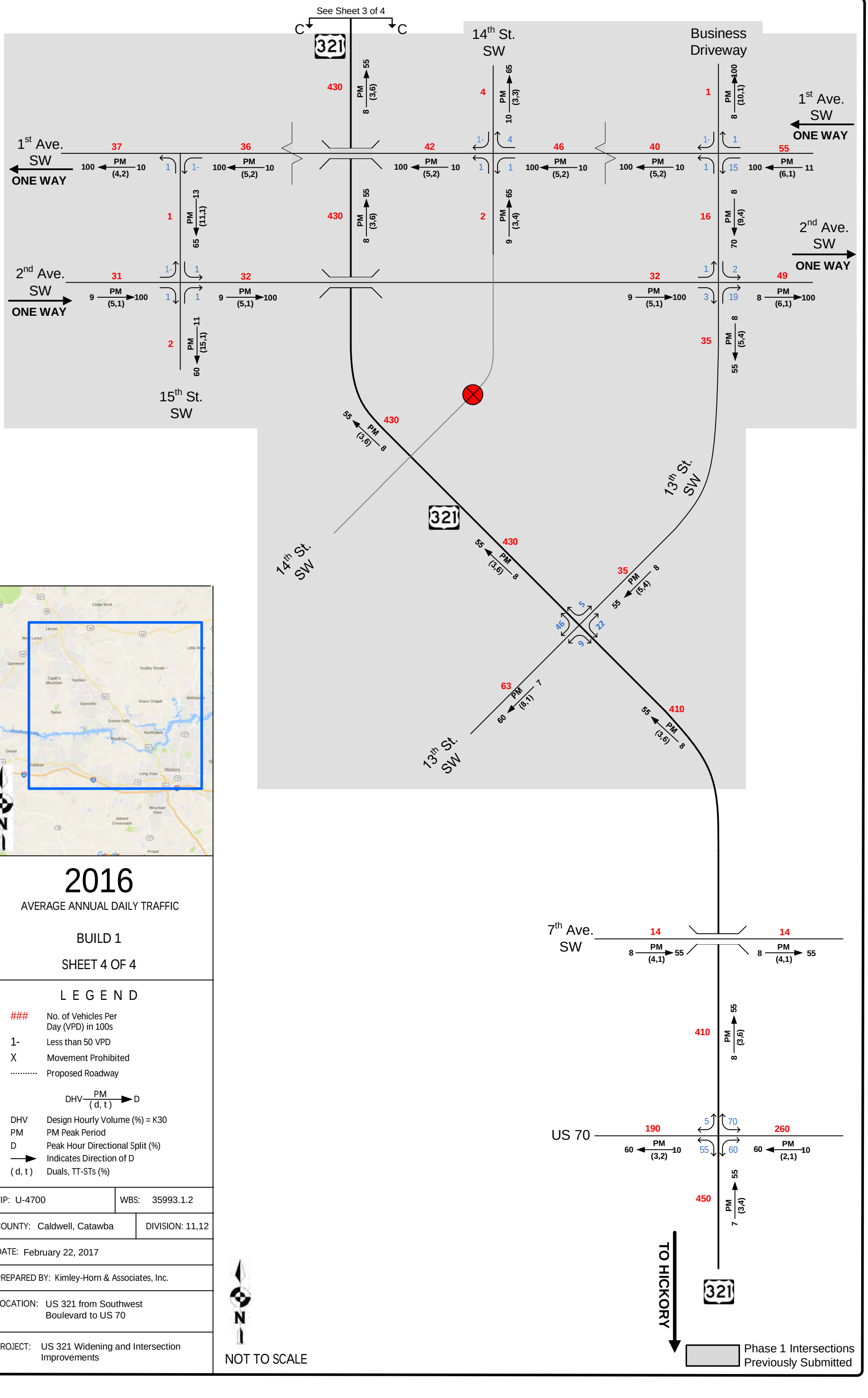
DHV — PM (d, t) → D

| | |
|---|---|
| DHV | Design Hourly Volume (%) = K30 |
| PM | PM Peak Period |
| D | Peak Hour Directional Split (%) |
| → | Indicates Direction of D |
| ( d, t ) | Duals, TT-STs (%) |

| | |
|---|---|
| TIP: U-4700 | WBS: 35993.1.2 |
| COUNTY: Caldwell, Catawba | DIVISION: 11,12 |
| DATE: February 22, 2017 | |
| PREPARED BY: Kimley-Horn & Associates, Inc. | |
| LOCATION: US 321 from Southwest Boulevard to US 70 | |
| PROJECT: US 321 Widening and Intersection Improvements | |

N

NOT TO SCALE







# 2016

AVERAGE ANNUAL DAILY TRAFFIC

BUILD 1

SHEET 4 OF 4

## L E G E N D

| | |
|---|---|
| ### | No. of Vehicles Per Day (VPD) in 100s |
| 1- | Less than 50 VPD |
| X | Movement Prohibited |
| ---------- | Proposed Roadway |

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| D | Peak Hour Directional Split (%) |
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| ( d, t ) | Duals, TT-STs (%) |

| | |
|---|---|
| TIP: U-4700 | WBS: 35993.1.2 |
| COUNTY: Caldwell, Catawba | DIVISION: 11,12 |
| DATE: February 22, 2017 | |
| PREPARED BY: Kimley-Horn & Associates, Inc. | |
| LOCATION: US 321 from Southwest Boulevard to US 70 | |
| PROJECT: US 321 Widening and Intersection Improvements | |

N

NOT TO SCALE


# 2016

AVERAGE ANNUAL DAILY TRAFFIC

BUILD 2

SHEET 1 OF 4

## L E G E N D

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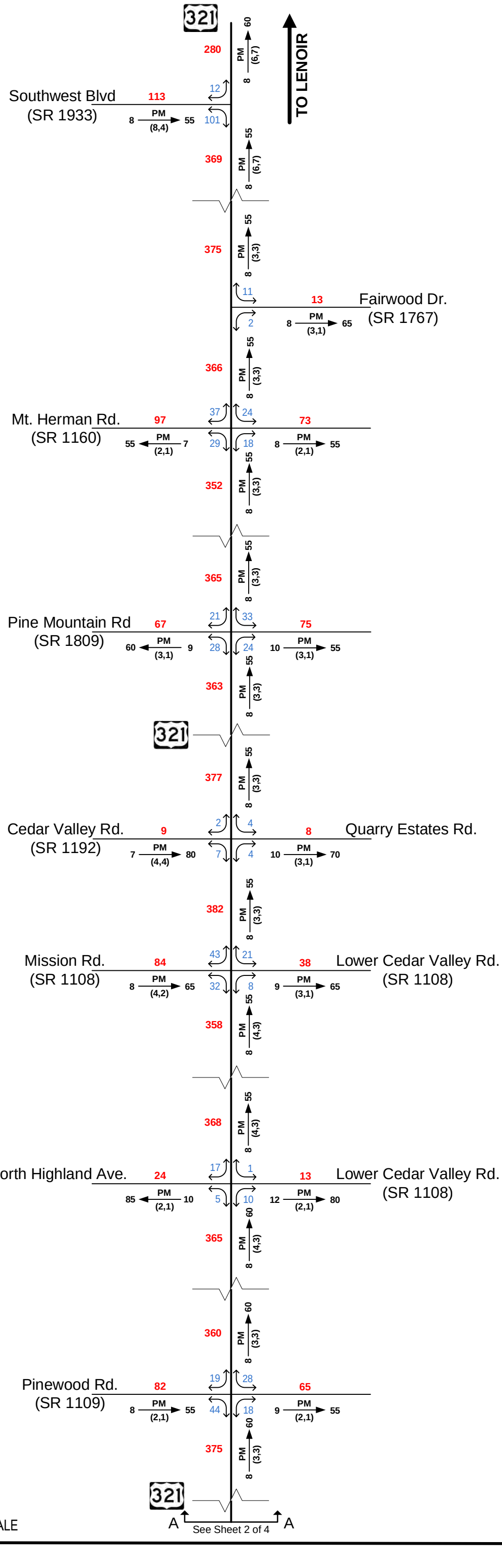


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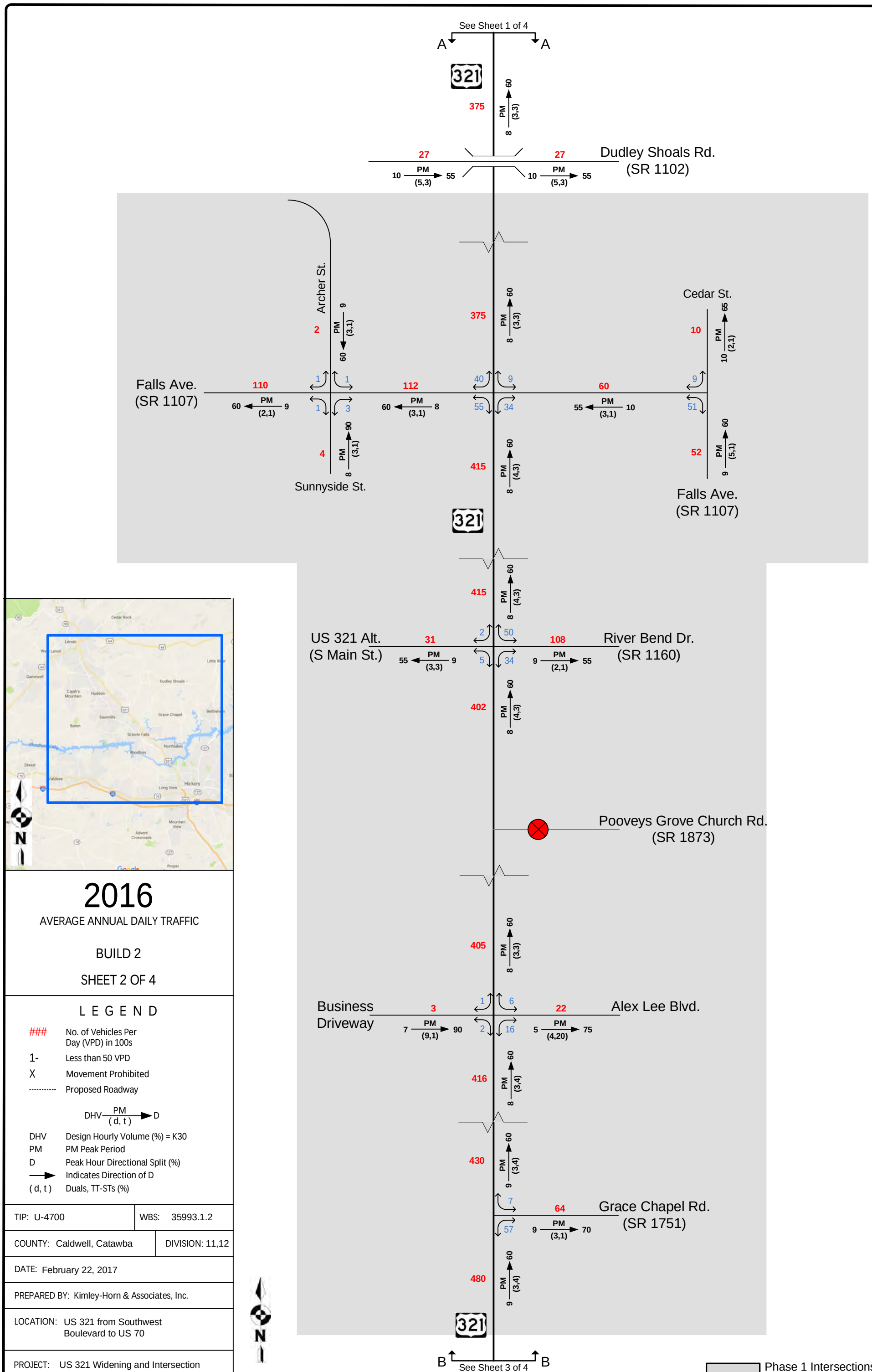





# 2016

AVERAGE ANNUAL DAILY TRAFFIC

BUILD 2

SHEET 2 OF 4

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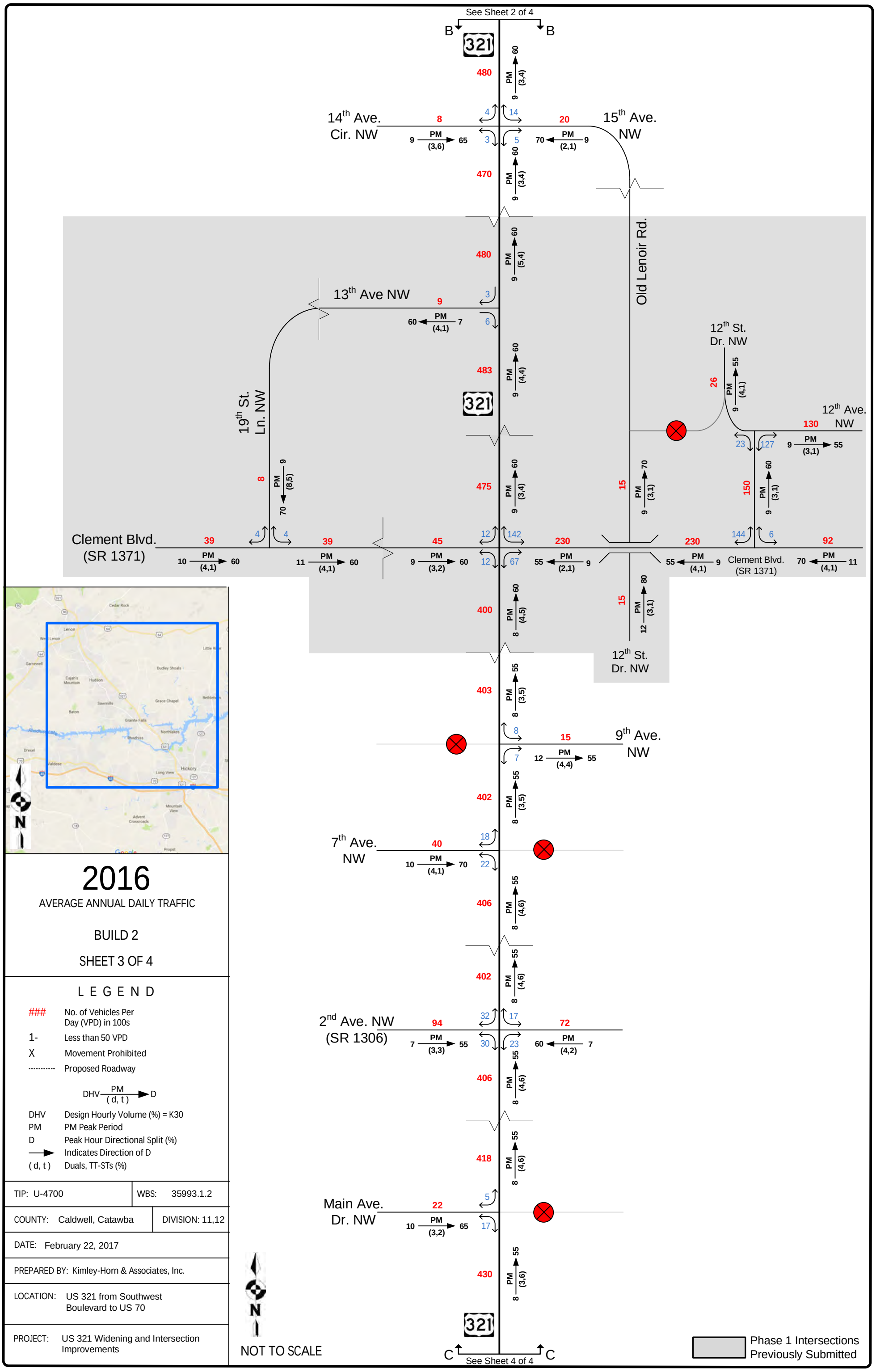
See Sheet 2 of 4







# 2016

AVERAGE ANNUAL DAILY TRAFFIC

BUILD 2

SHEET 3 OF 4

## L E G E N D

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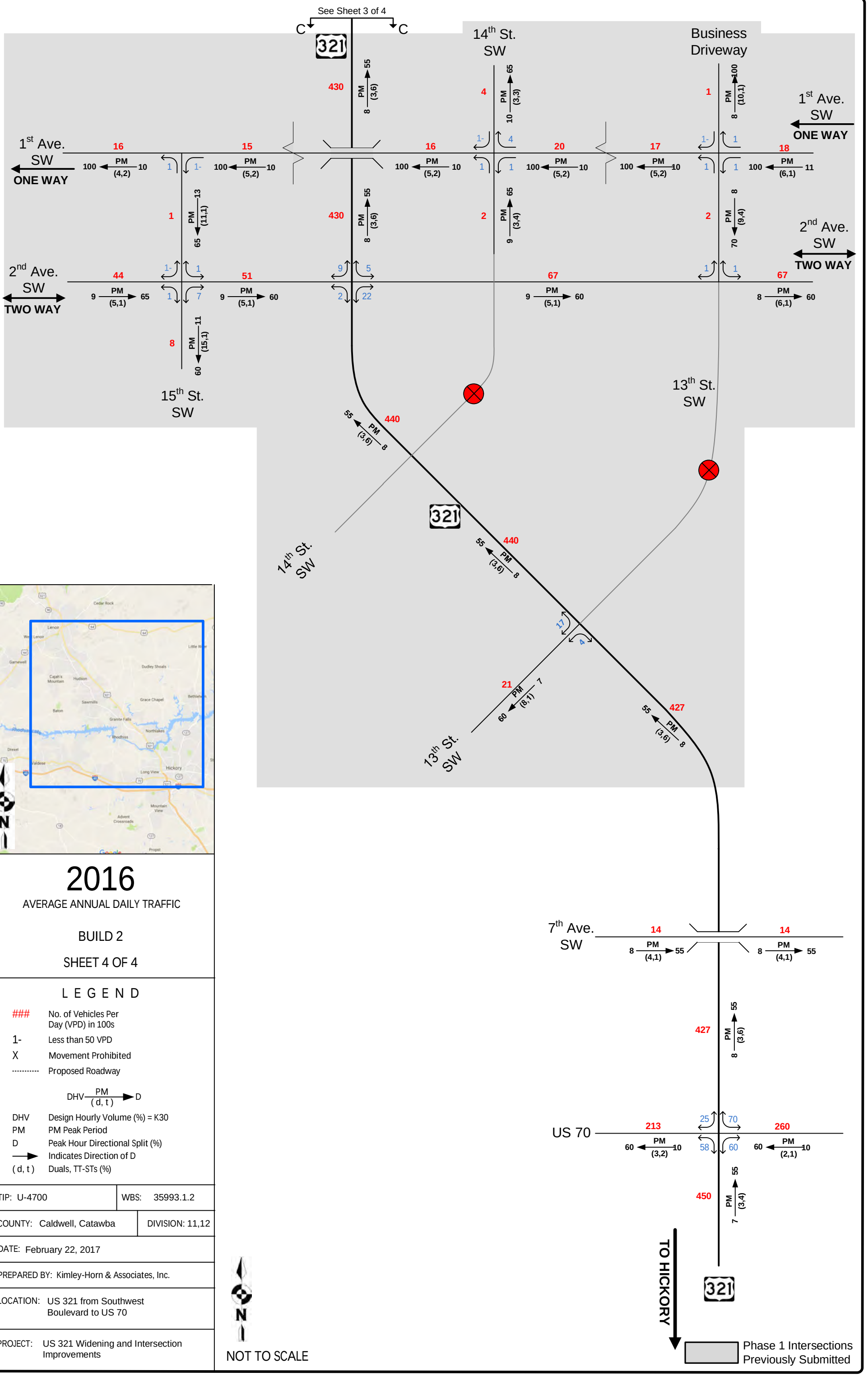


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AVERAGE ANNUAL DAILY TRAFFIC

BUILD 2

SHEET 4 OF 4

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NOT TO SCALE

Phase 1 Intersections Previously Submitted


# 2040

AVERAGE ANNUAL DAILY TRAFFIC

NO BUILD

SHEET 1 OF 4

## L E G E N D

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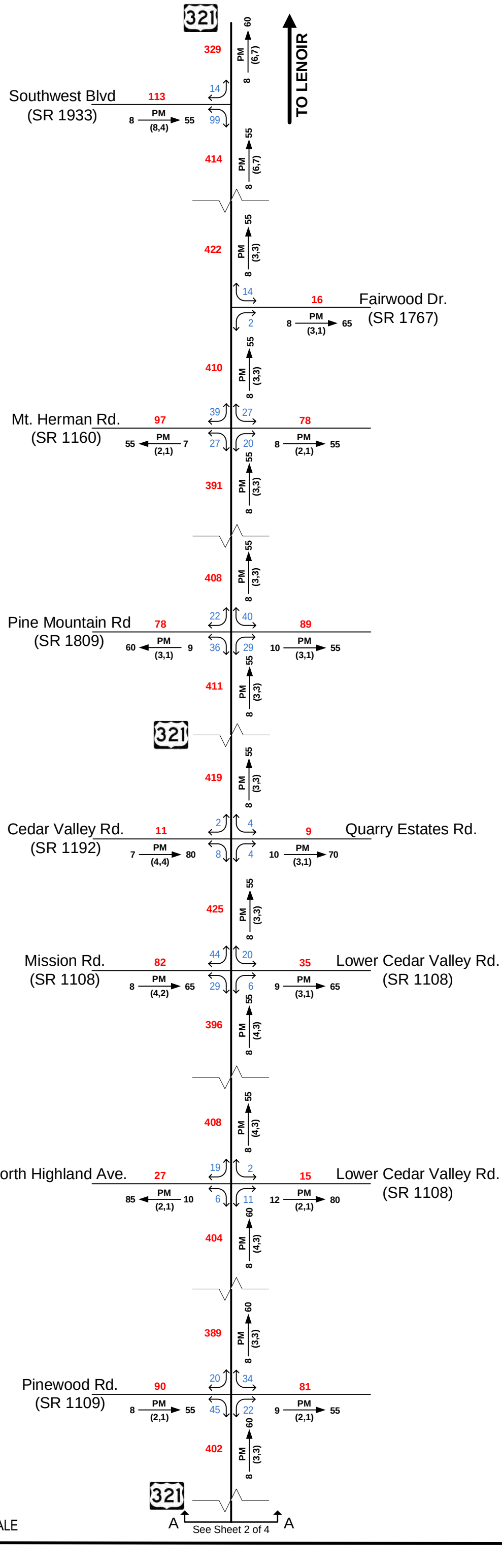


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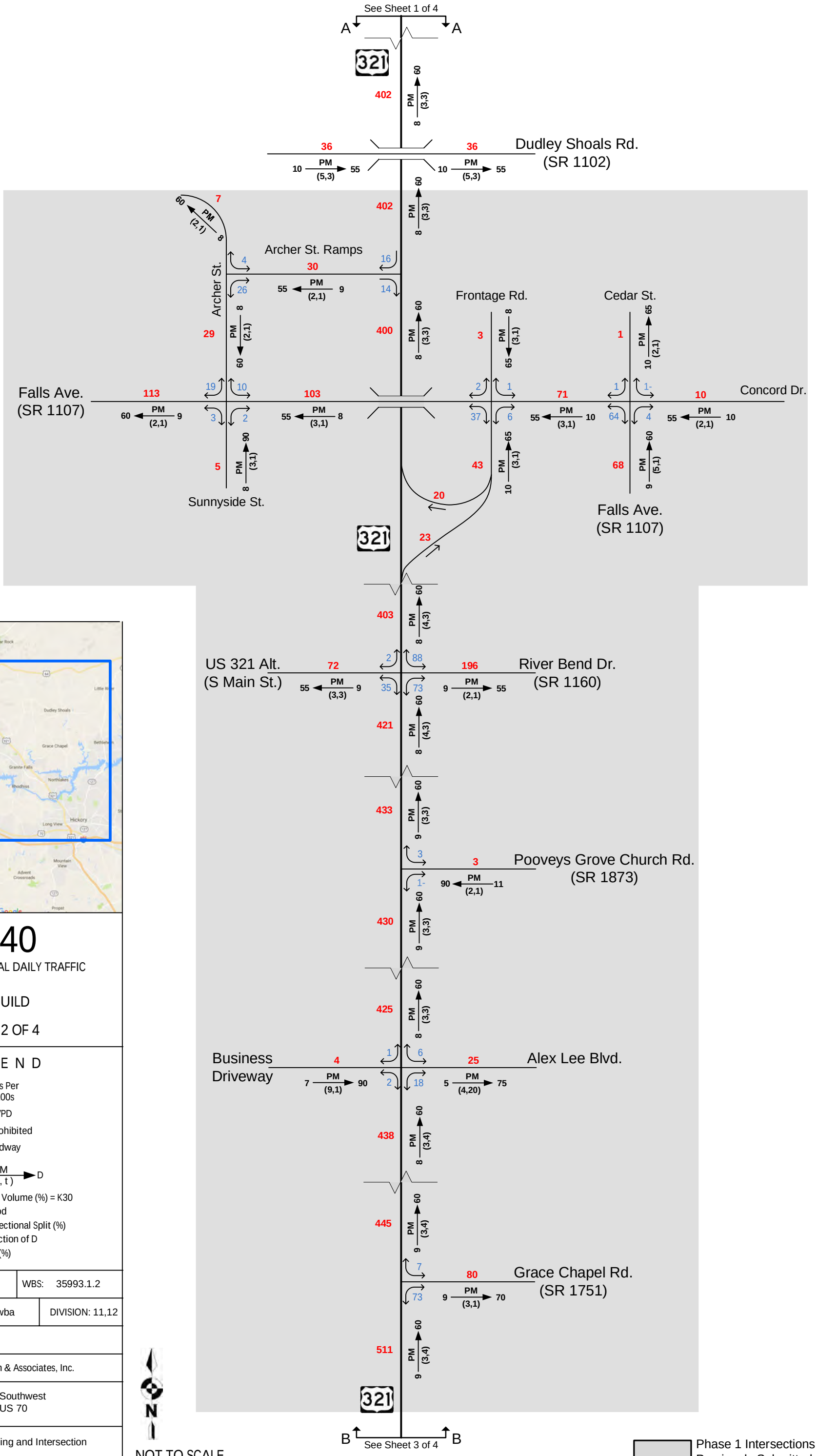


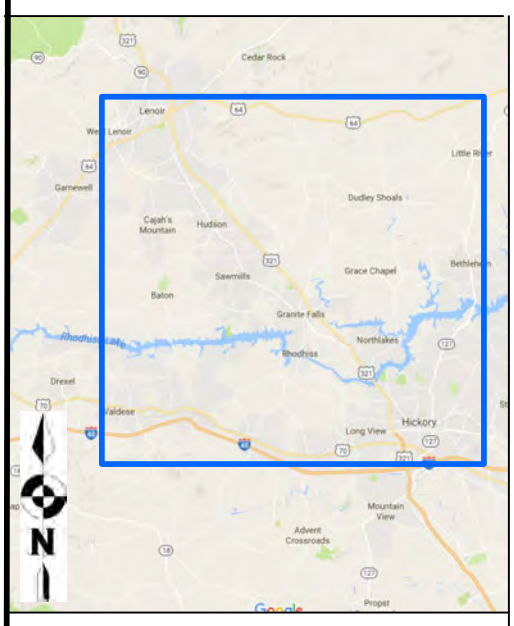


# 2040

AVERAGE ANNUAL DAILY TRAFFIC

NO BUILD

SHEET 2 OF 4

## L E G E N D

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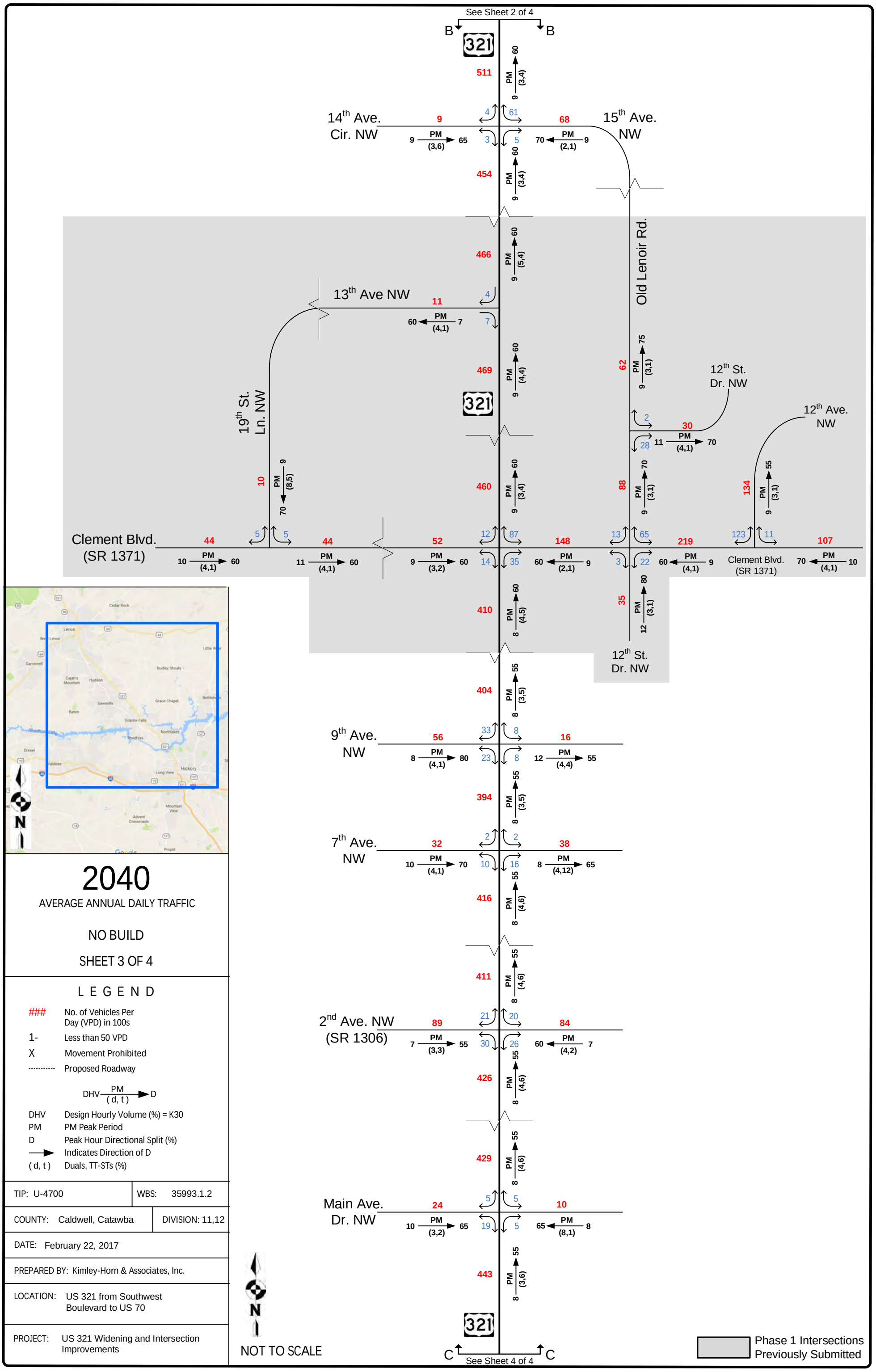
NOT TO SCALE

Phase 1 Intersections Previously Submitted







# 2040

AVERAGE ANNUAL DAILY TRAFFIC

NO BUILD

SHEET 3 OF 4

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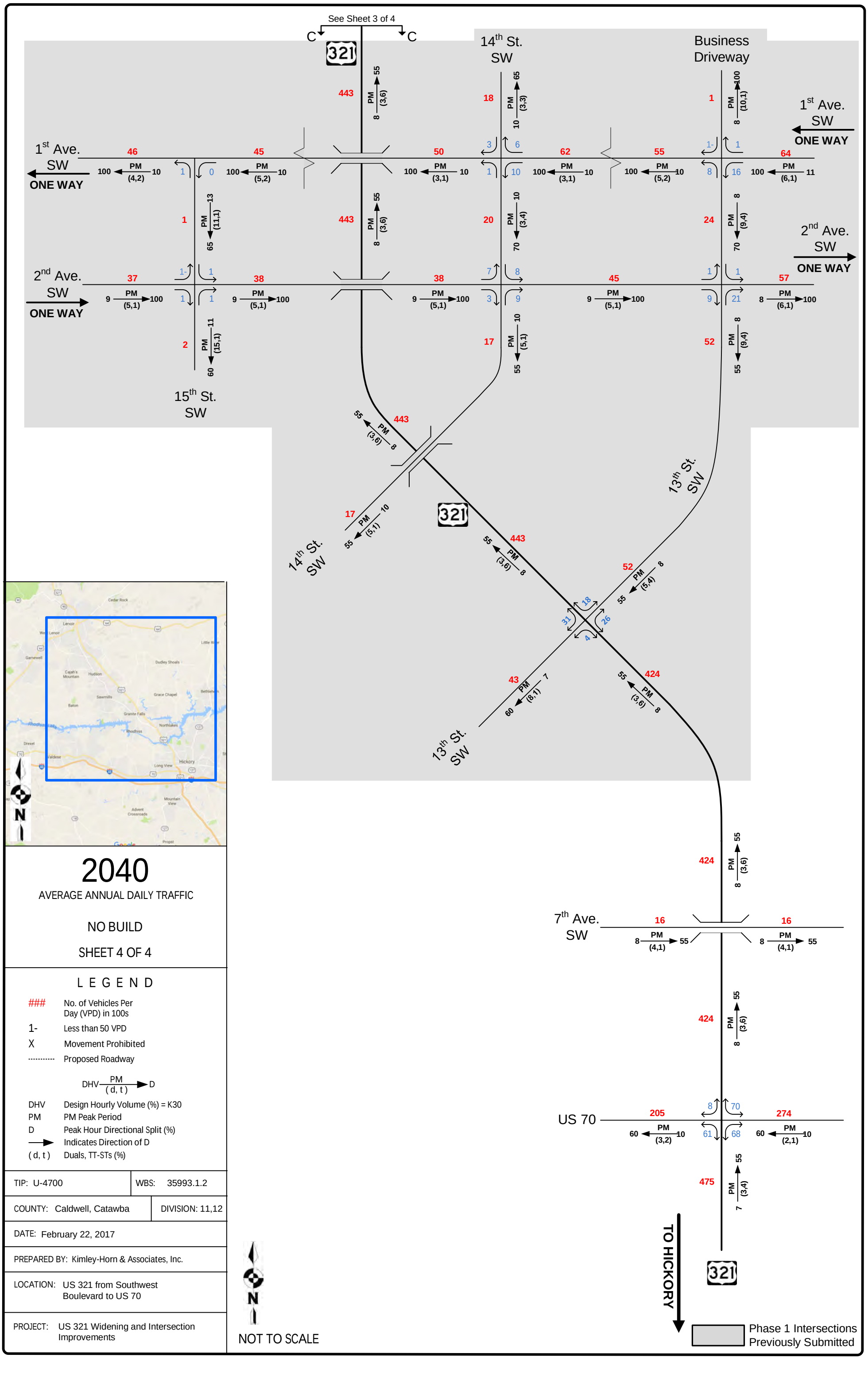





# 2040

AVERAGE ANNUAL DAILY TRAFFIC

NO BUILD

SHEET 4 OF 4

## L E G E N D

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# 2040

AVERAGE ANNUAL DAILY TRAFFIC

BUILD 1

SHEET 1 OF 4

## L E G E N D

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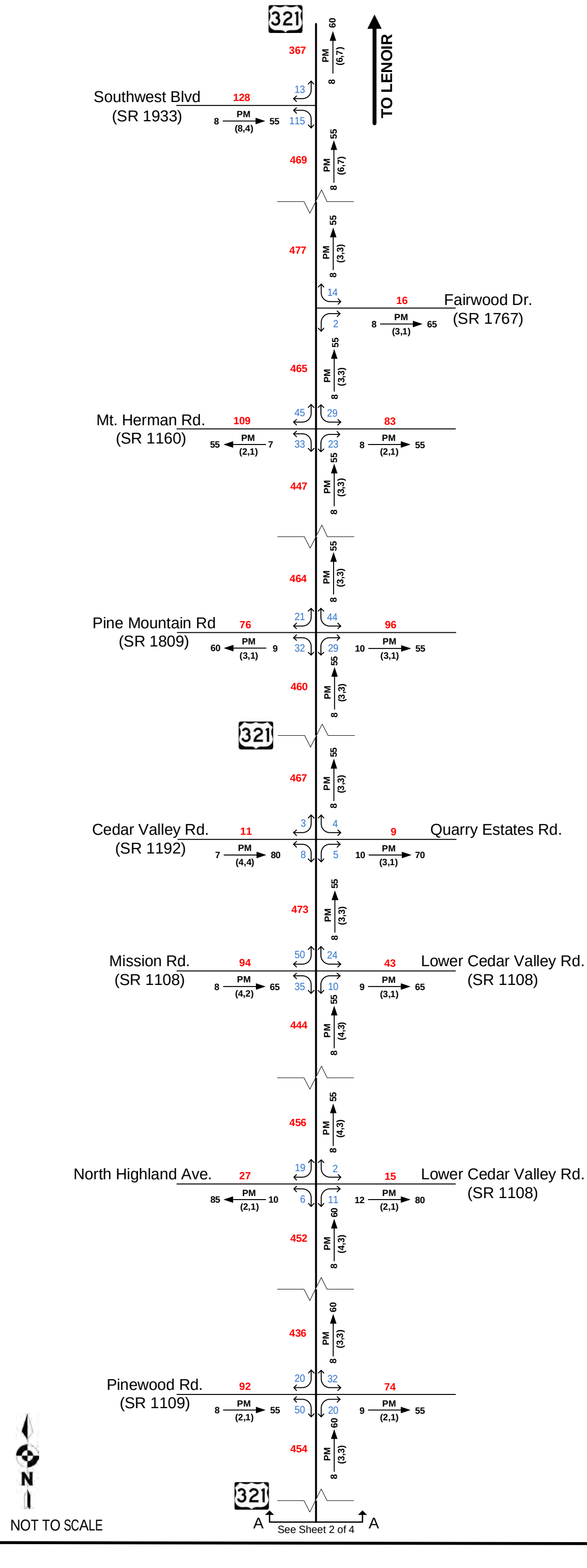


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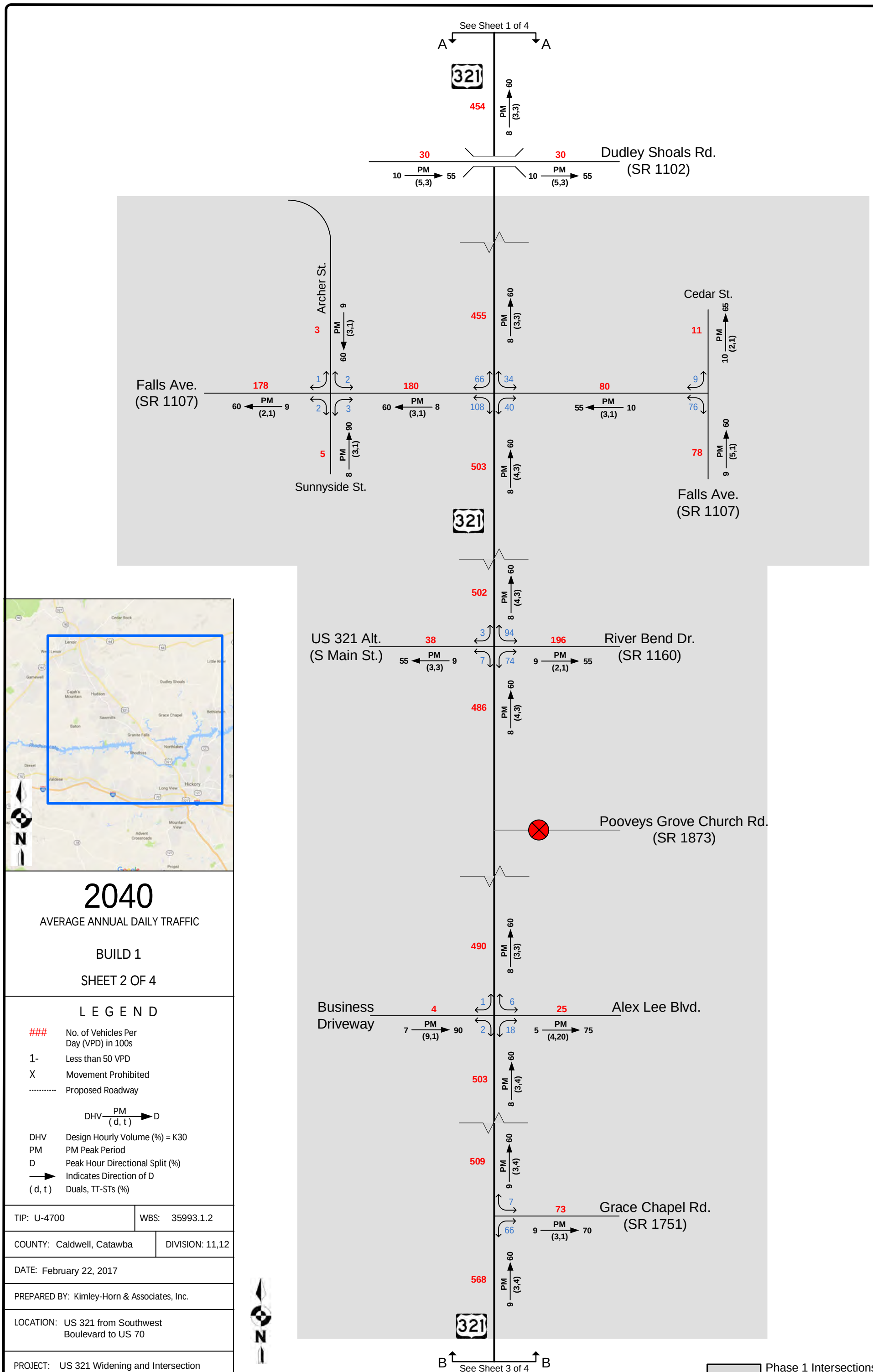





# 2040

AVERAGE ANNUAL DAILY TRAFFIC

BUILD 1

SHEET 2 OF 4

## L E G E N D

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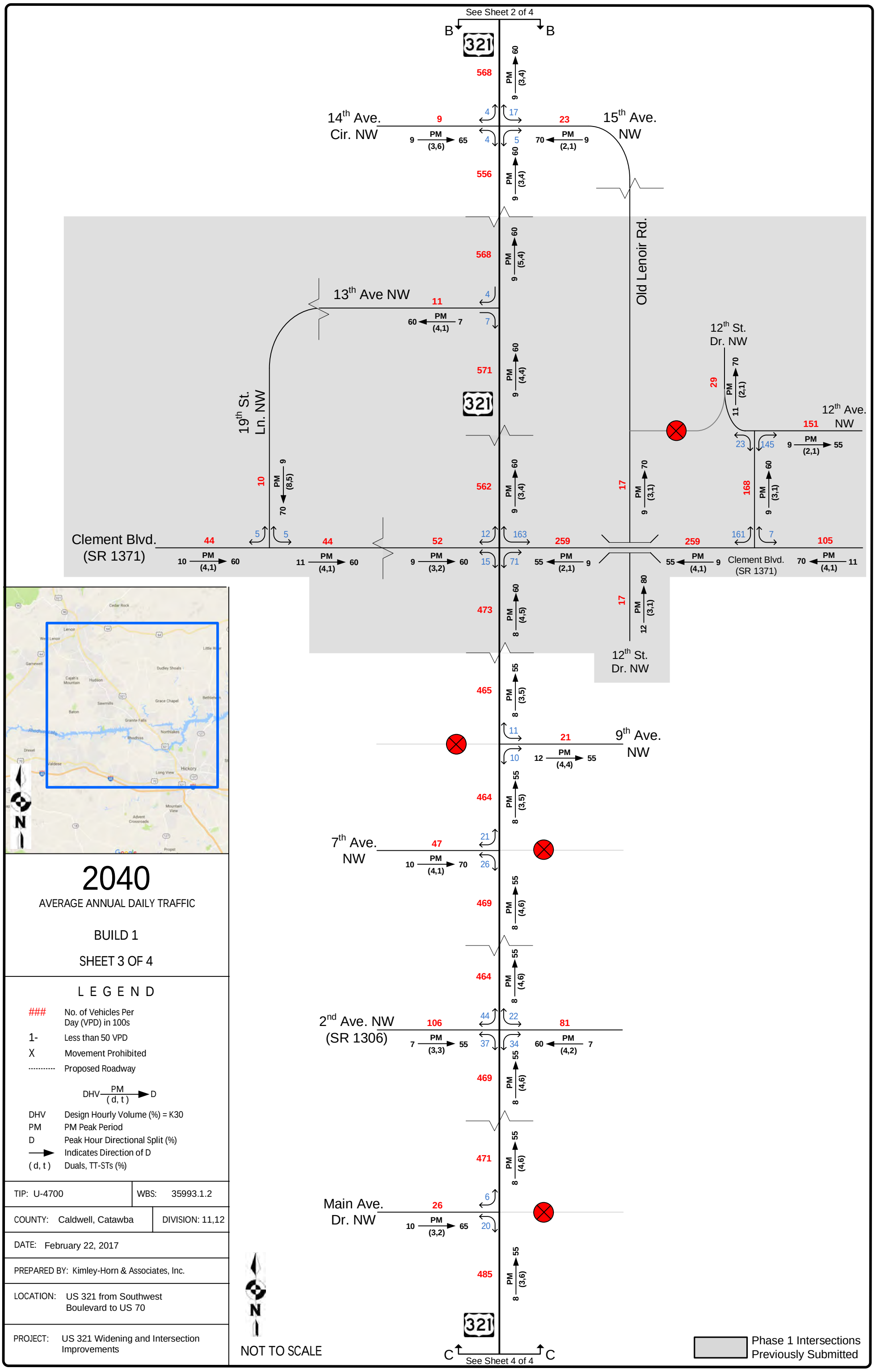





# 2040

AVERAGE ANNUAL DAILY TRAFFIC

BUILD 1

SHEET 3 OF 4

## L E G E N D

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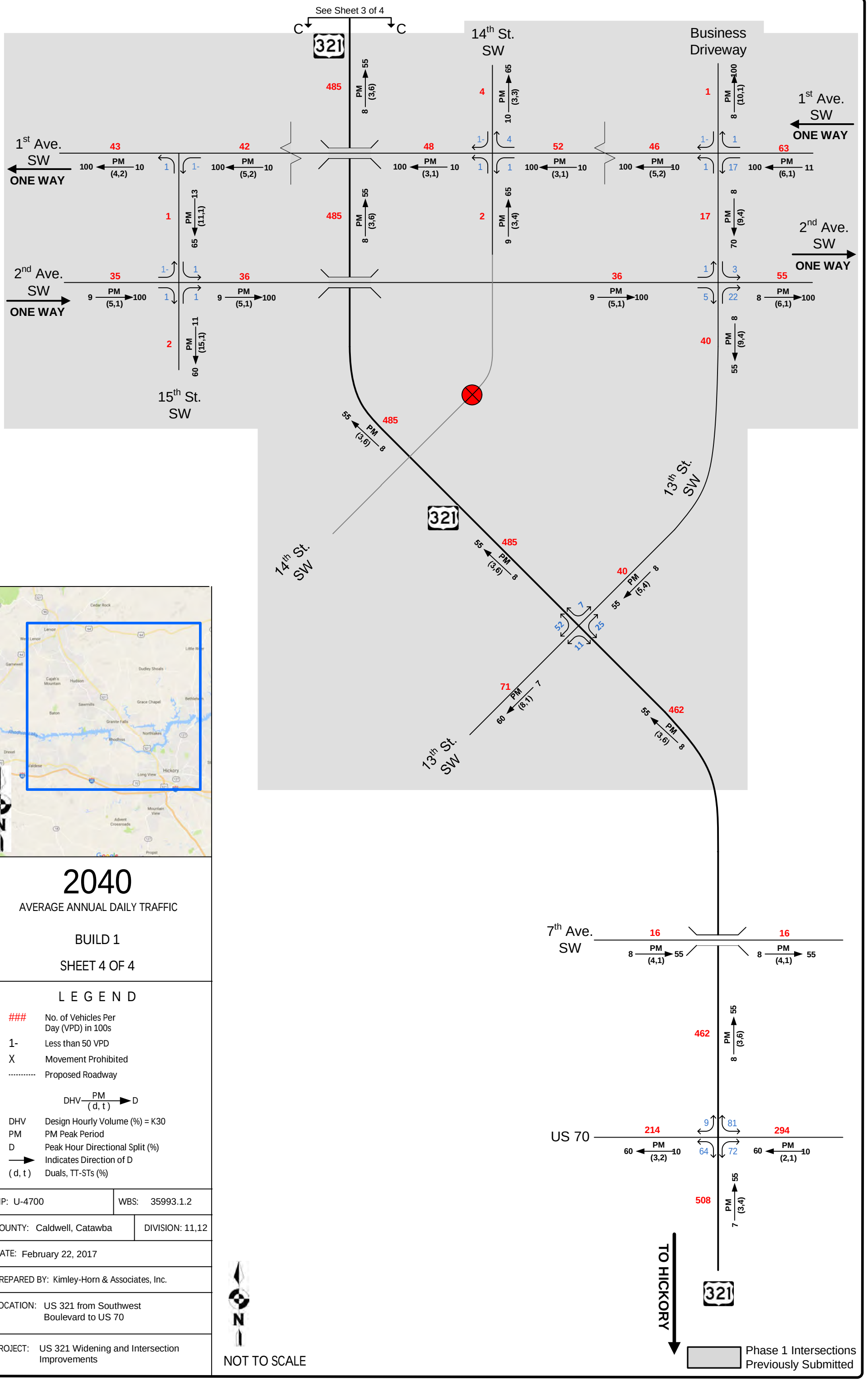


# 2040

AVERAGE ANNUAL DAILY TRAFFIC

BUILD 1

SHEET 4 OF 4

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# 2040

AVERAGE ANNUAL DAILY TRAFFIC

BUILD 2

SHEET 1 OF 4

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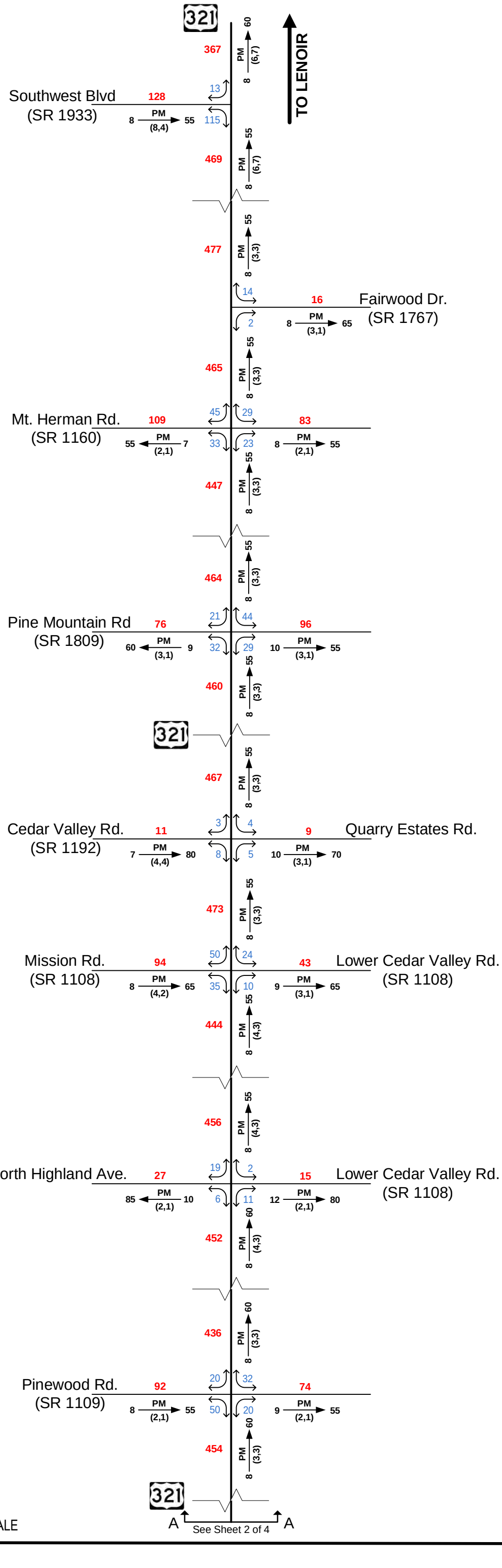



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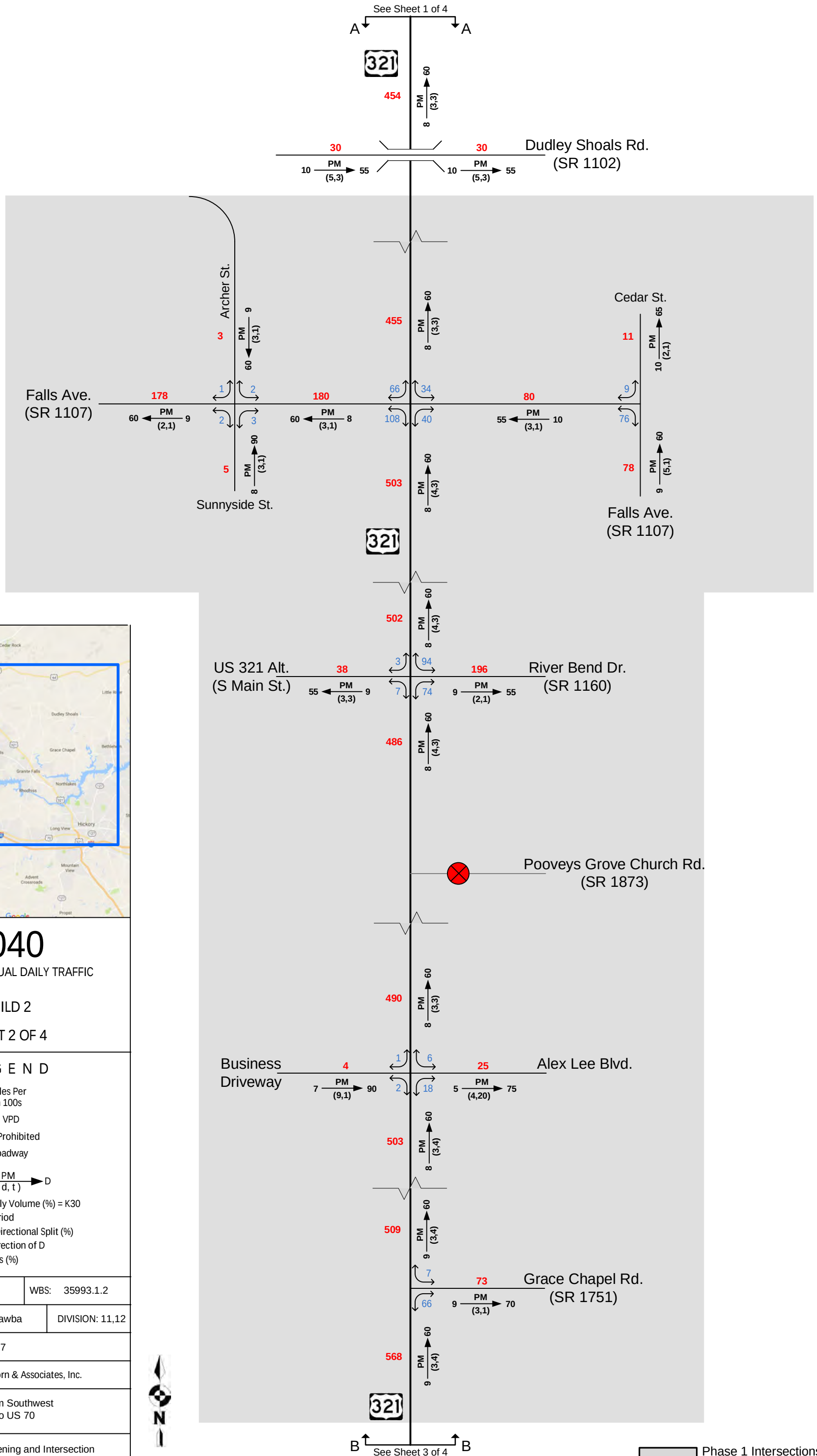


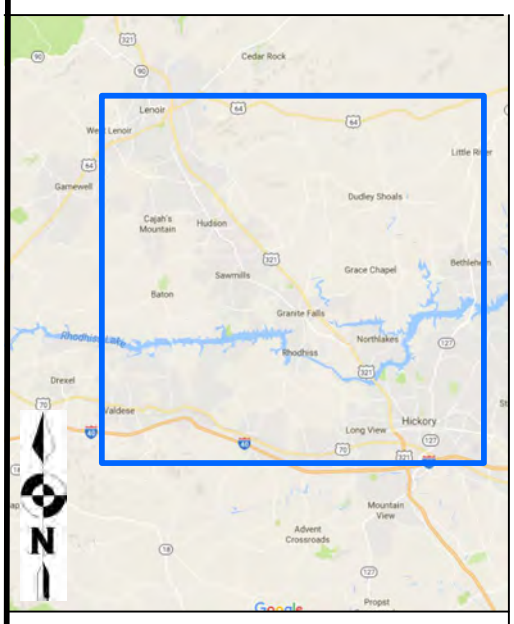


# 2040

AVERAGE ANNUAL DAILY TRAFFIC

BUILD 2

SHEET 2 OF 4

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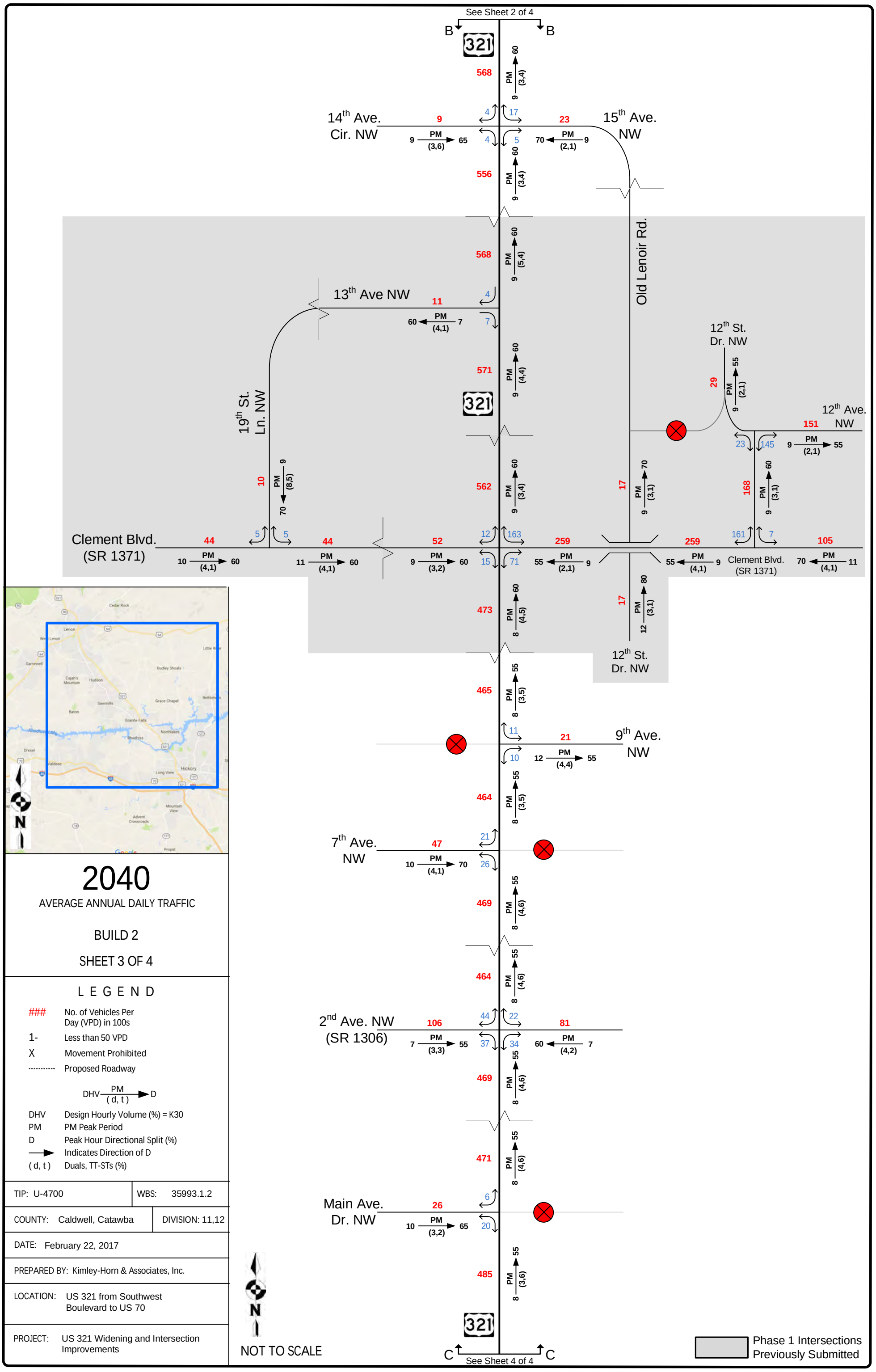
Phase 1 Intersections Previously Submitted


See Sheet 2 of 4
B
B
321
568
PM (3,4) 9 60
14th Ave. Cir. NW
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4
17
23
15th Ave. NW
PM (3,6) 9 65
4
5
PM (2,1) 70 9
556
PM (3,4) 9 60
568
PM (5,4) 9 60
Old Lenoir Rd.
13th Ave NW
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11
PM (4,1) 60 7
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12th St. Dr. NW
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PM (4,4) 9 60
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PM (2,1) 9 55
12th Ave. NW
151
19th St. Ln. NW
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PM (8,5) 70 9
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PM (3,4) 9 60
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Clement Blvd. (SR 1371)
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161
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Clement Blvd. (SR 1371)
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7th Ave. NW
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PM (4,6) 8 55
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PM (4,6) 8 55
2nd Ave. NW (SR 1306)
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PM (3,3) 7 55
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34
PM (4,2) 60 7
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PM (4,6) 8 55
471
PM (4,6) 8 55
Main Ave. Dr. NW
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6
PM (3,2) 10 65
20
485
PM (3,6) 8 55
321
C
C
See Sheet 4 of 4
Cedar Rock
Lenoir
West Lenoir
Little River
Garnerwell
Dudley Shoals
Cajah's Mountain
Hudson
Sawmills
Grace Chapel
Bethlehem
Baton
Granite Falls
Rhodhiss
Northlakes
Drexel
Valdese
Hickory
Long View
Mountain View
Advent Crossroads
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Google
2040
AVERAGE ANNUAL DAILY TRAFFIC
BUILD 2
SHEET 3 OF 4
L E G E N D
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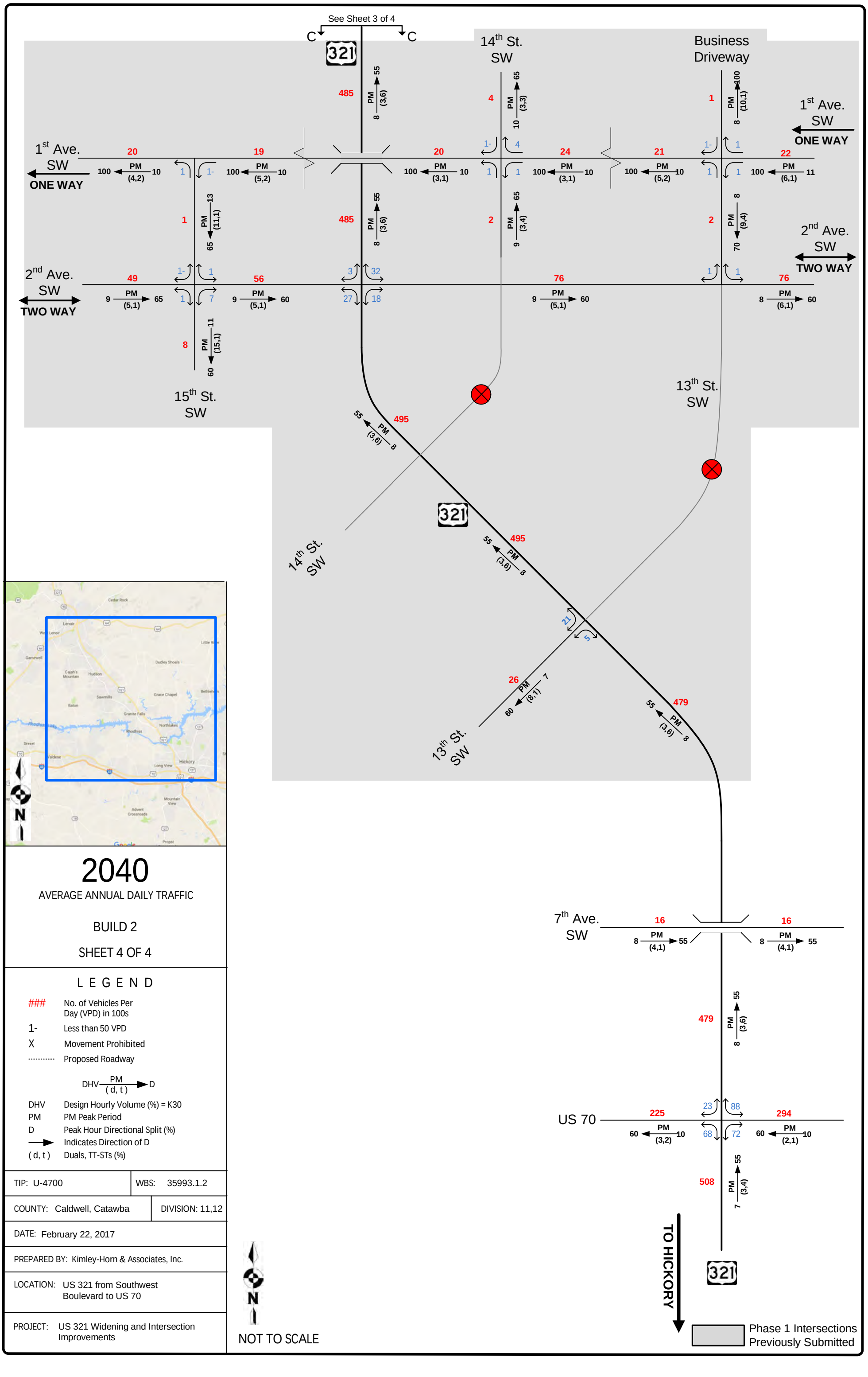
NOT TO SCALE
Phase 1 Intersections Previously Submitted







# 2040

AVERAGE ANNUAL DAILY TRAFFIC

BUILD 2

SHEET 4 OF 4

## L E G E N D

| | |
|---|---|
| ### | No. of Vehicles Per Day (VPD) in 100s |
| 1- | Less than 50 VPD |
| X | Movement Prohibited |
| ---------- | Proposed Roadway |

DHV — PM (d, t) → D

| | |
|---|---|
| DHV | Design Hourly Volume (%) = K30 |
| PM | PM Peak Period |
| D | Peak Hour Directional Split (%) |
| → | Indicates Direction of D |
| ( d, t ) | Duals, TT-STs (%) |

| | |
|---|---|
| TIP: U-4700 | WBS: 35993.1.2 |
| COUNTY: Caldwell, Catawba | DIVISION: 11,12 |
| DATE: February 22, 2017 | |
| PREPARED BY: Kimley-Horn & Associates, Inc. | |
| LOCATION: US 321 from Southwest Boulevard to US 70 | |
| PROJECT: US 321 Widening and Intersection Improvements | |

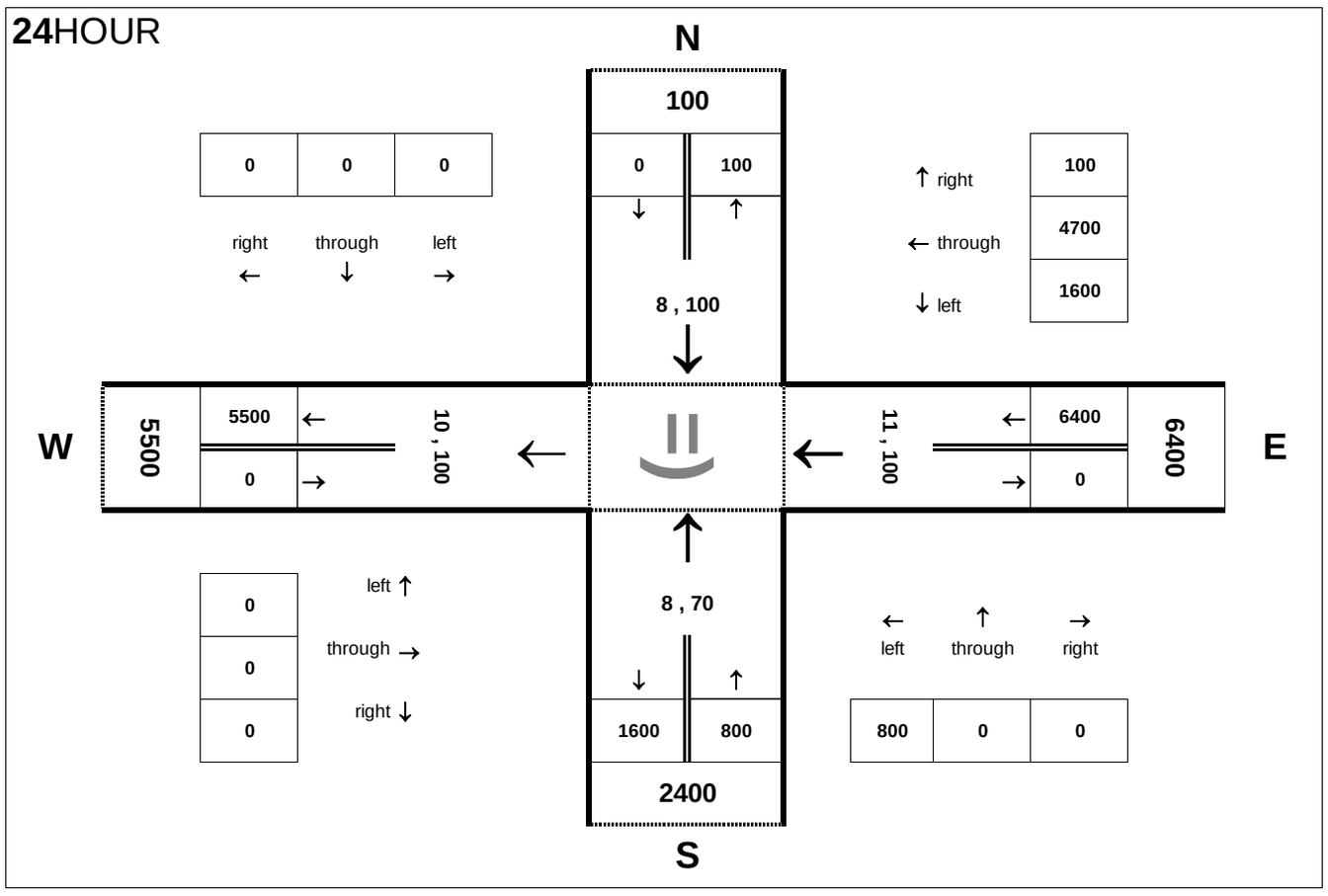
N

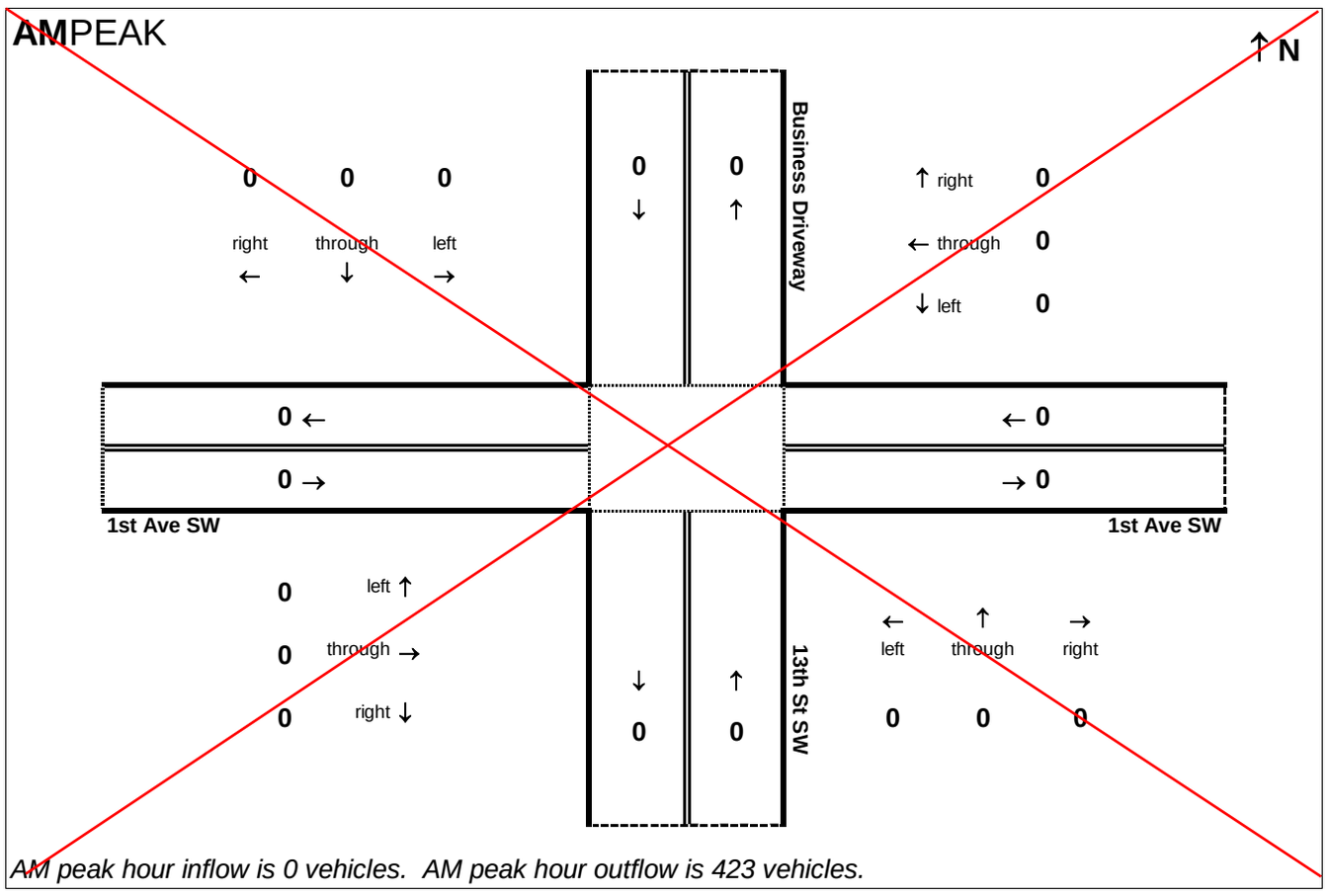
NOT TO SCALE

Phase 1 Intersections Previously Submitted

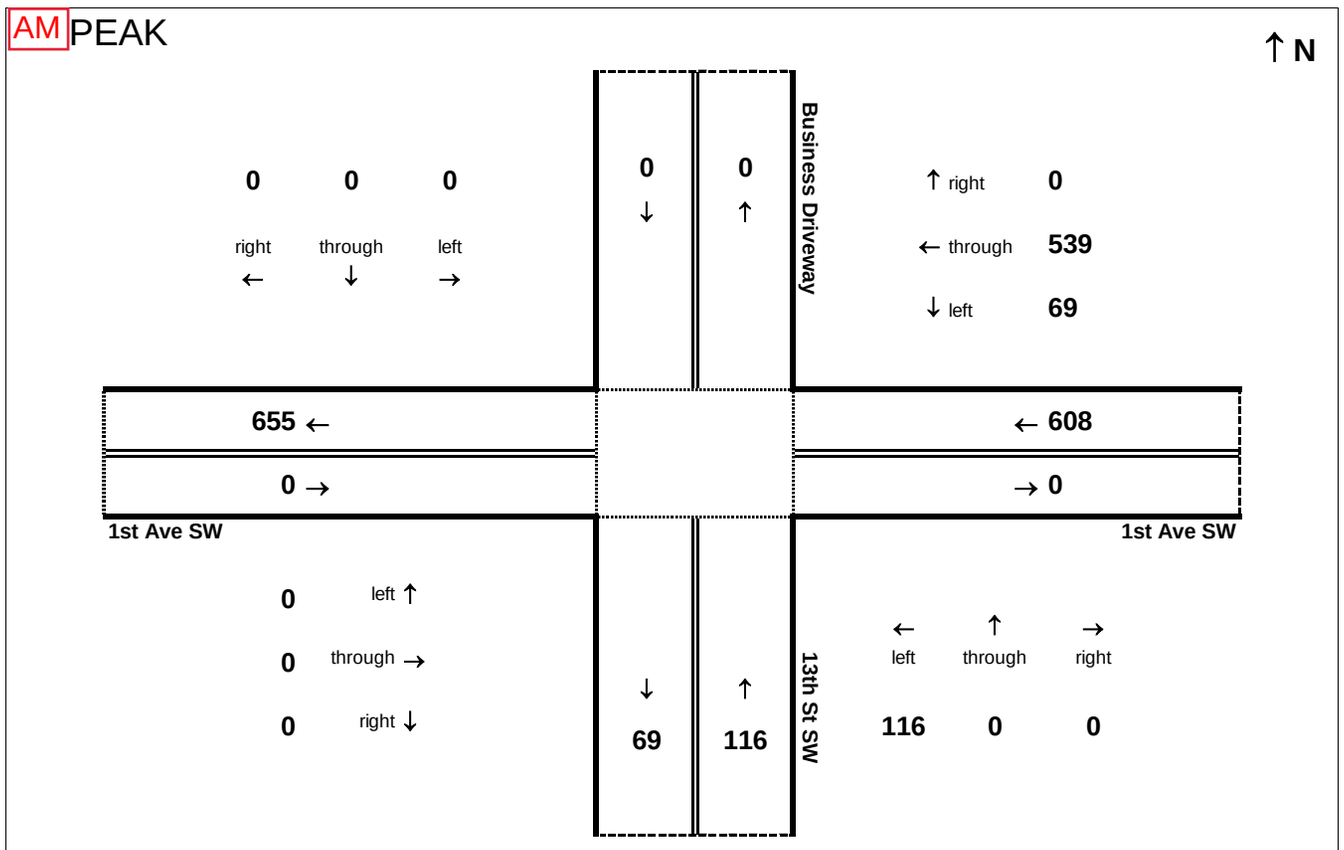
APPENDIX B

# Peak Hour Traffic Volume Breakouts




*AM peak hour inflow is 0 vehicles. AM peak hour outflow is 423 vehicles.*




*PM peak hour inflow is 723 vehicles. PM peak hour outflow is 723 vehicles.*

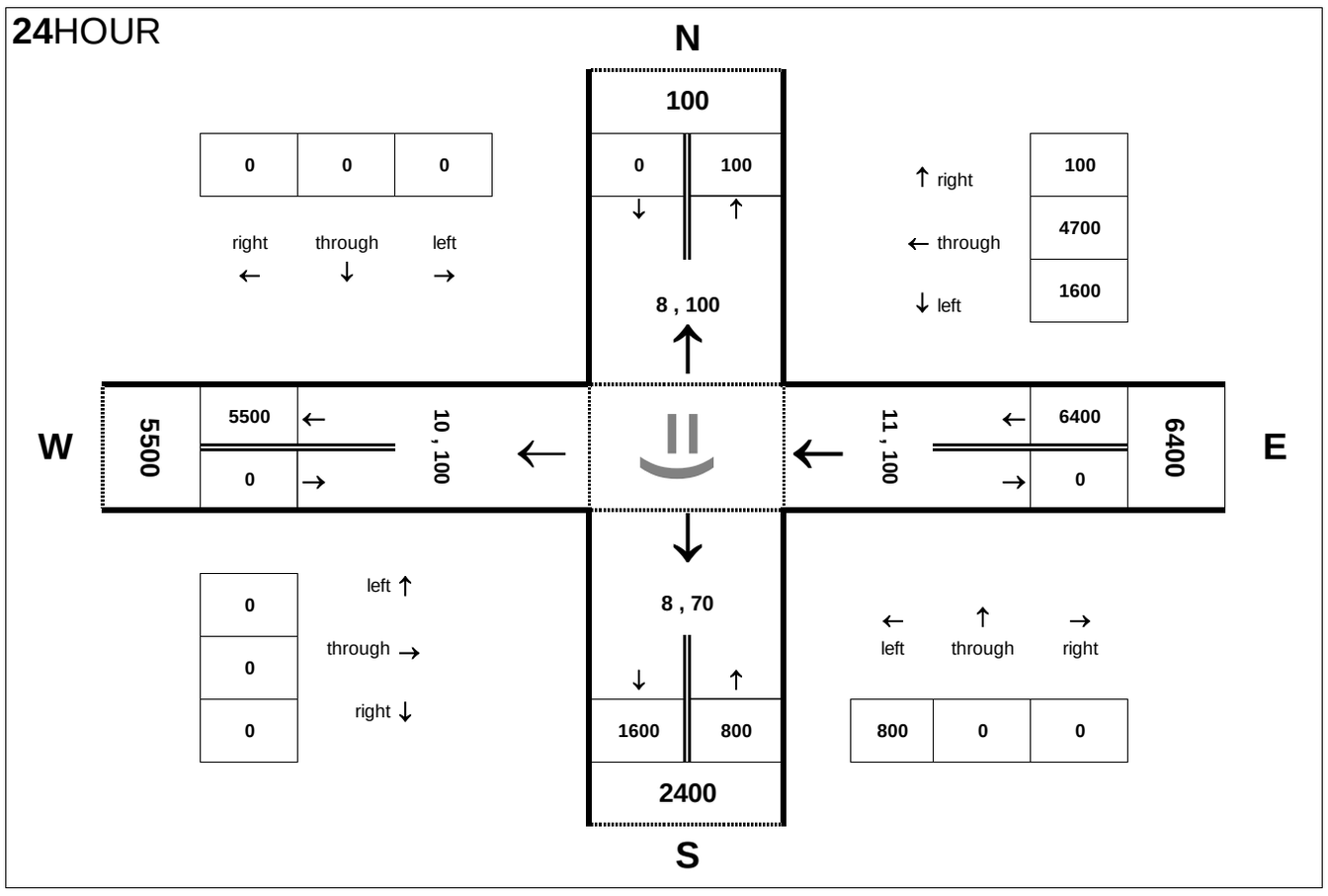
**Peak Hour Volume Breakouts Report:**
Intersection of 1st Ave SW and 13th St SW

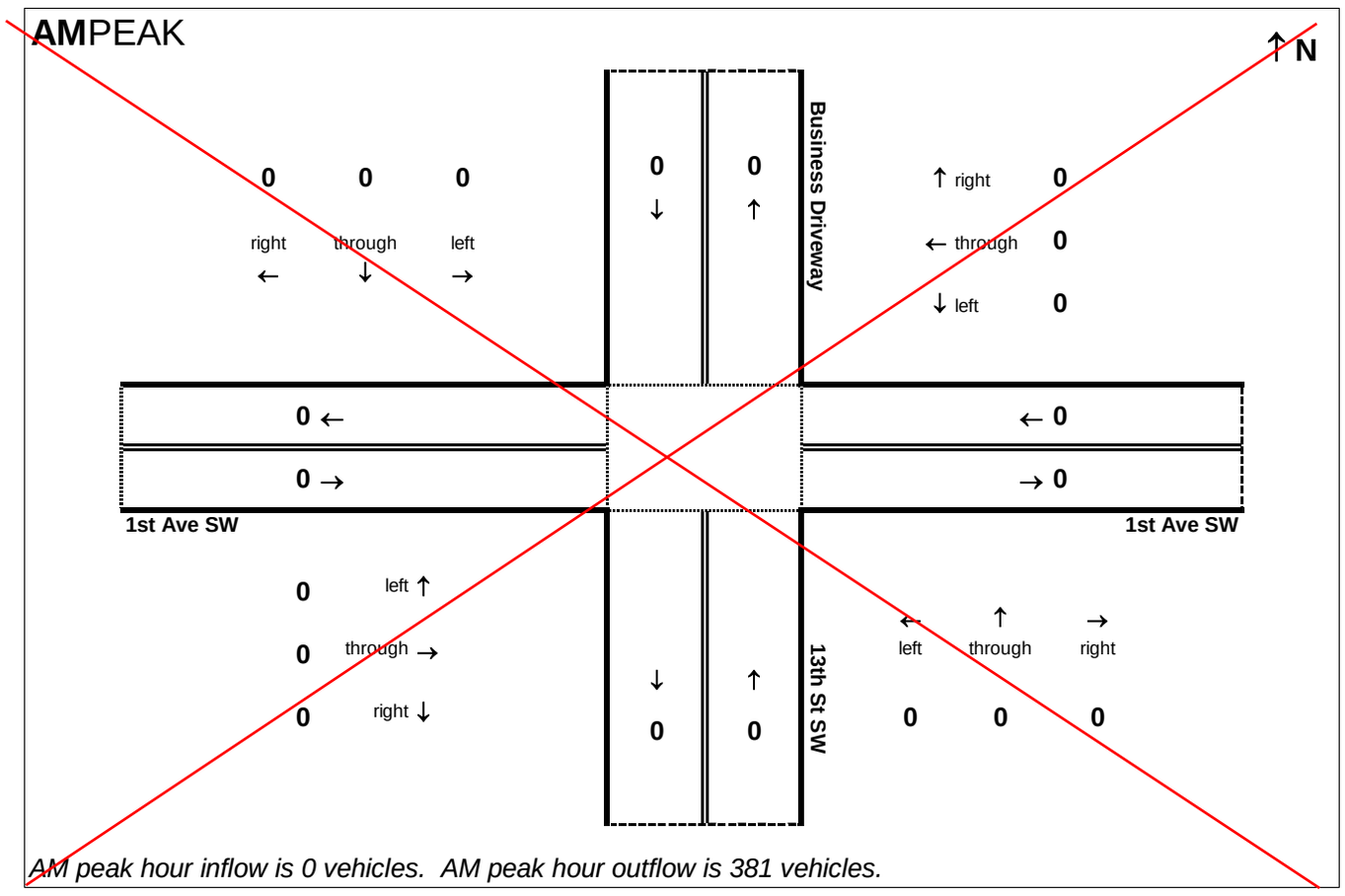
**Traffic Forecast Release Date:**
December-16

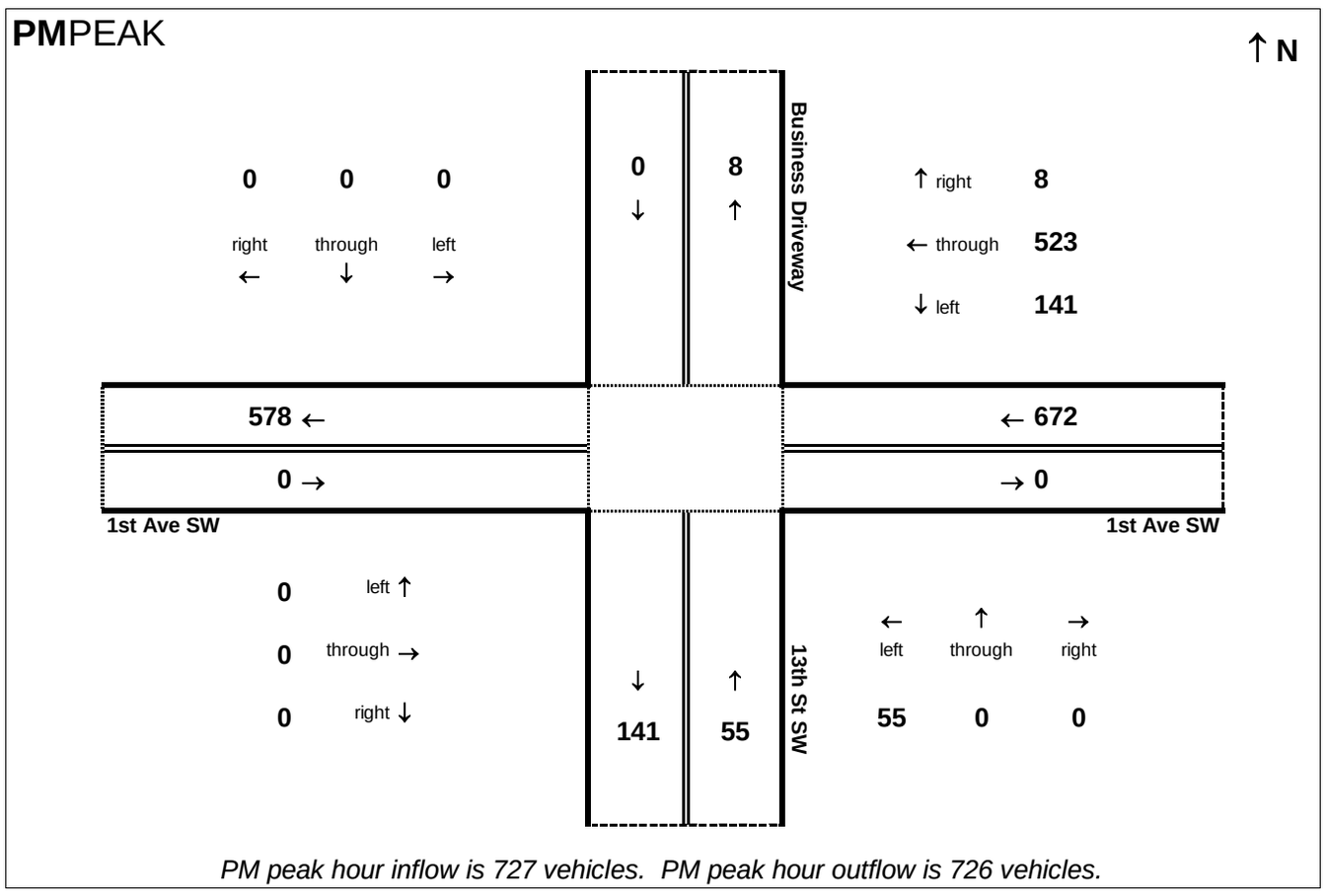
**Traffic Data Year:**
2040 No Build

**Project:**
U-4700

Note: In order to use the spreadsheet program, and use the 100% directional in the AM on the one-way street(s), the input directionals for the two way moves were reversed, and the pm output data was used for the am.



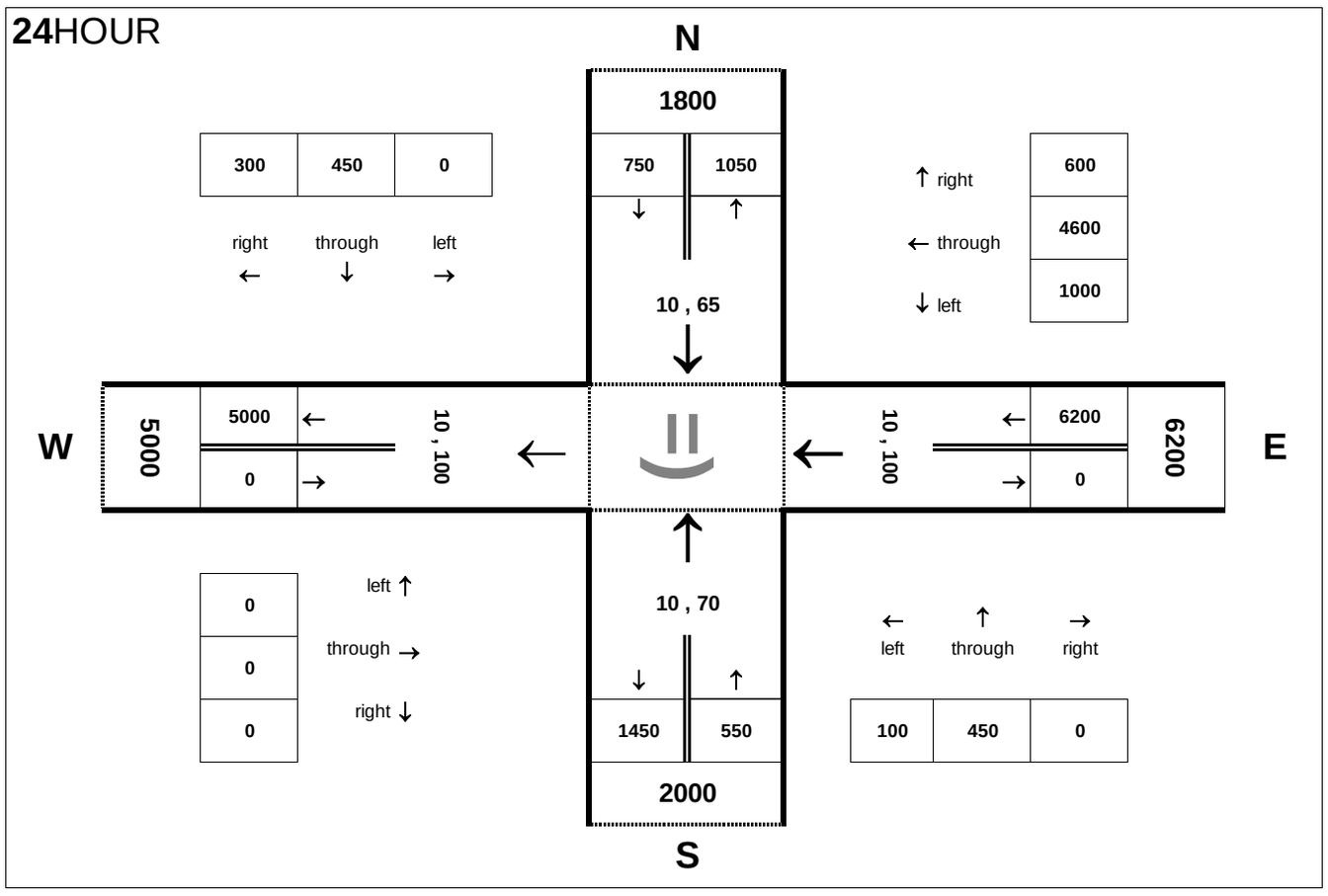



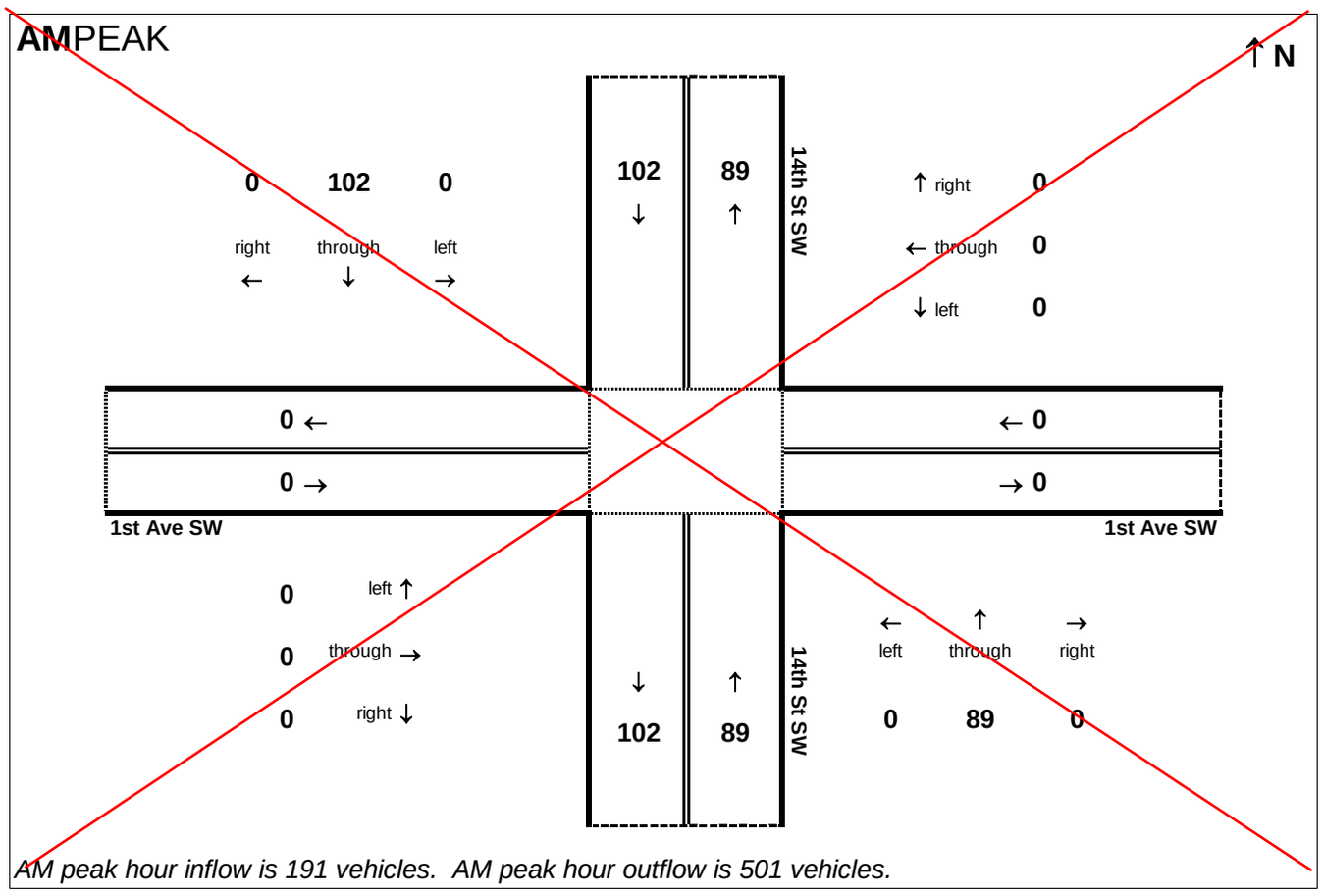

**Peak Hour Volume Breakouts Report:**
Intersection of 1st Ave SW and 13th St SW

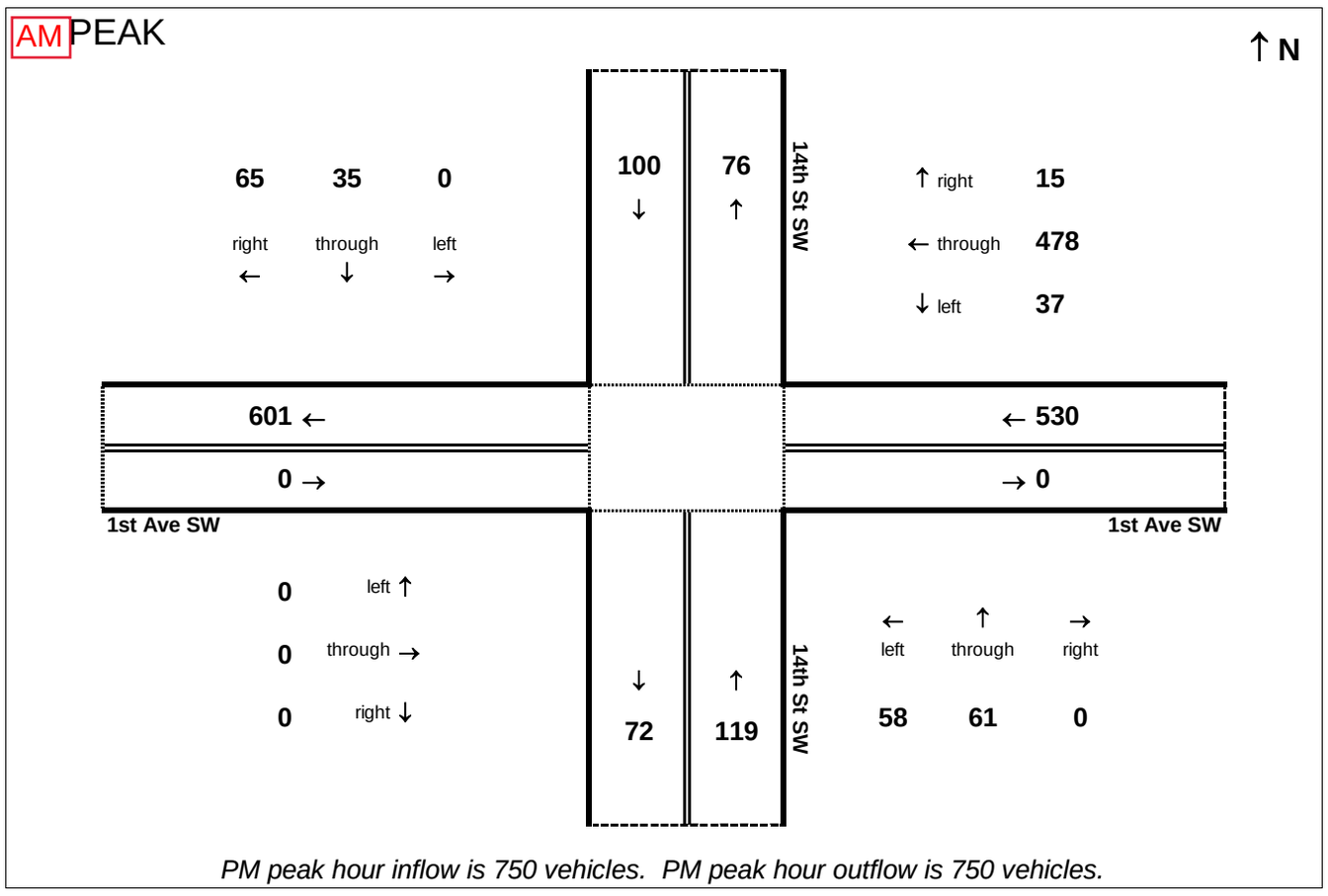
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 No Build

**Project:**
U-4700



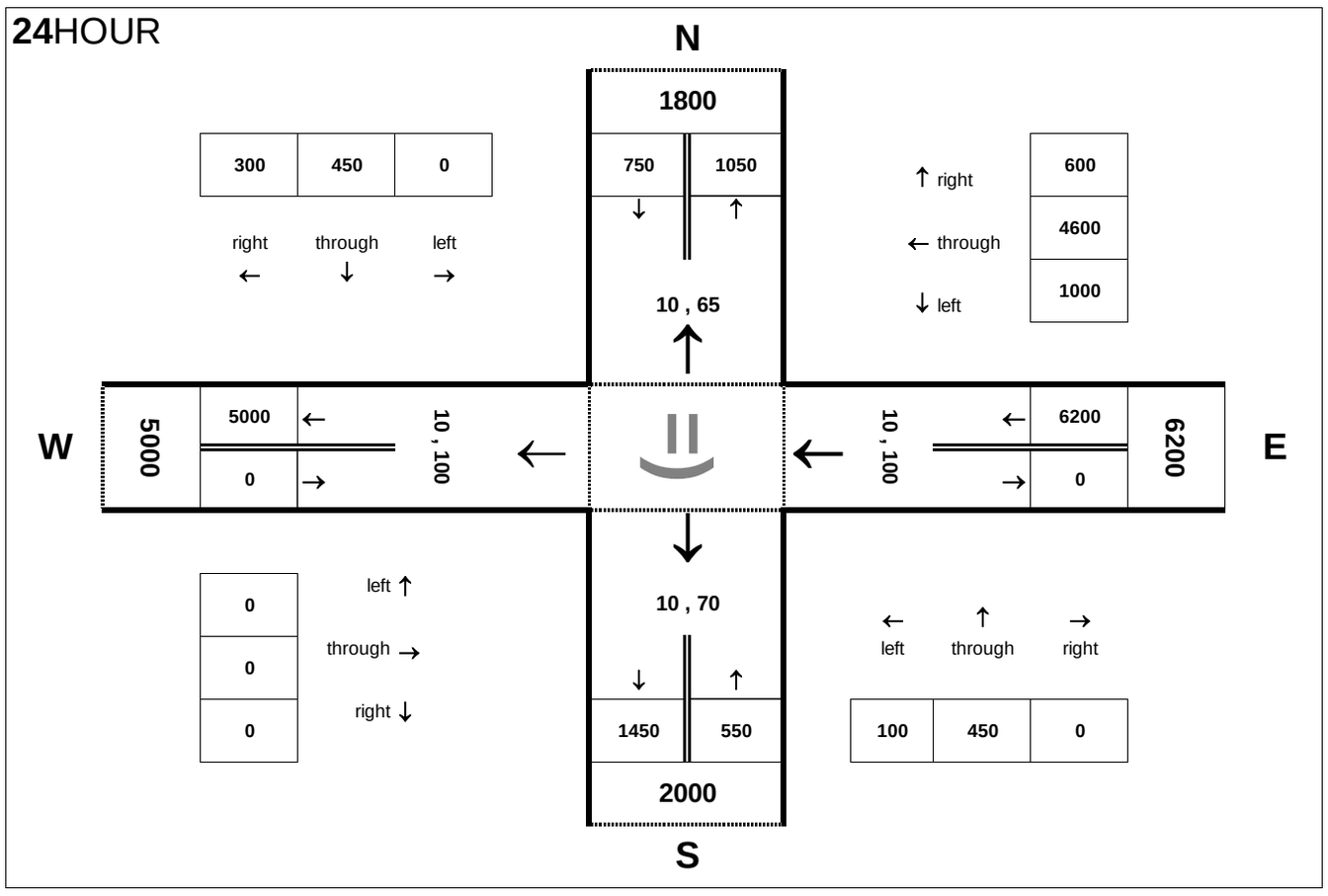

**Peak Hour Volume Breakouts Report:**
Intersection of 1st Ave SW and 14th St SW

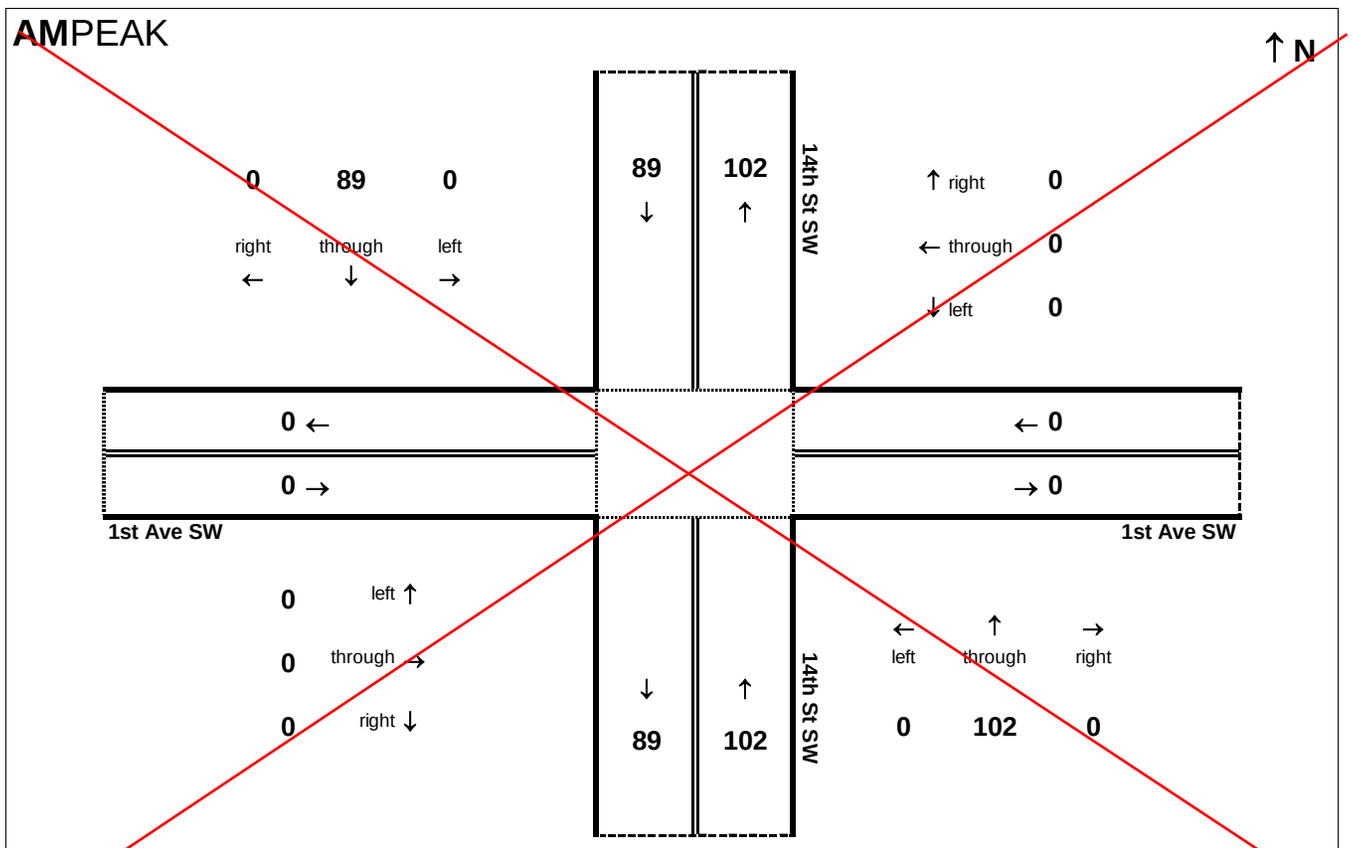
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 No Build

**Project:**
U-4700

Note: In order to use the spreadsheet program, and use the 100% directional in the AM on the one-way street(s), the input directionals for the two way moves were reversed, and the pm output data was used for the am.




*AM peak hour inflow is 191 vehicles. AM peak hour outflow is 501 vehicles.*

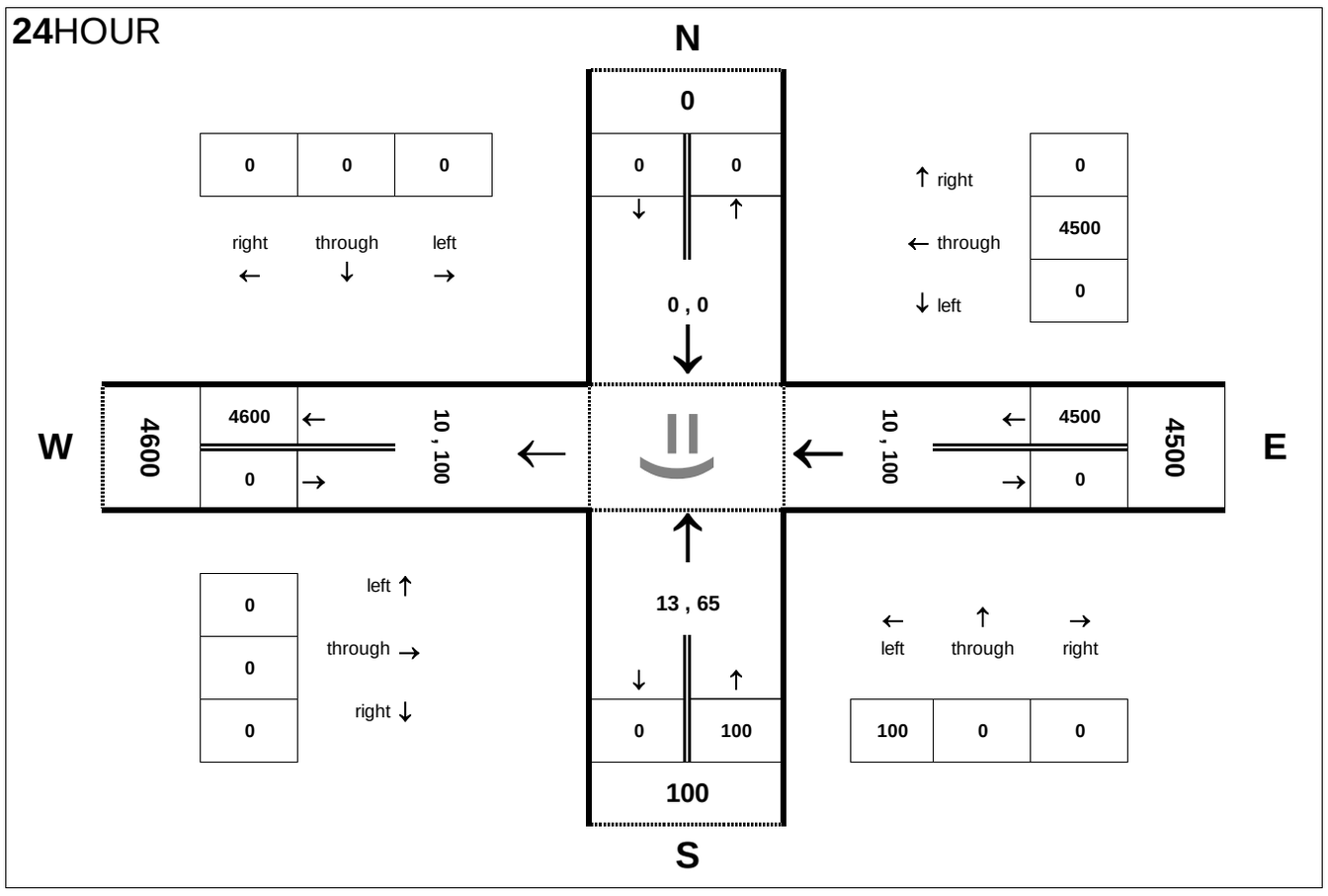

*PM peak hour inflow is 751 vehicles. PM peak hour outflow is 750 vehicles.*

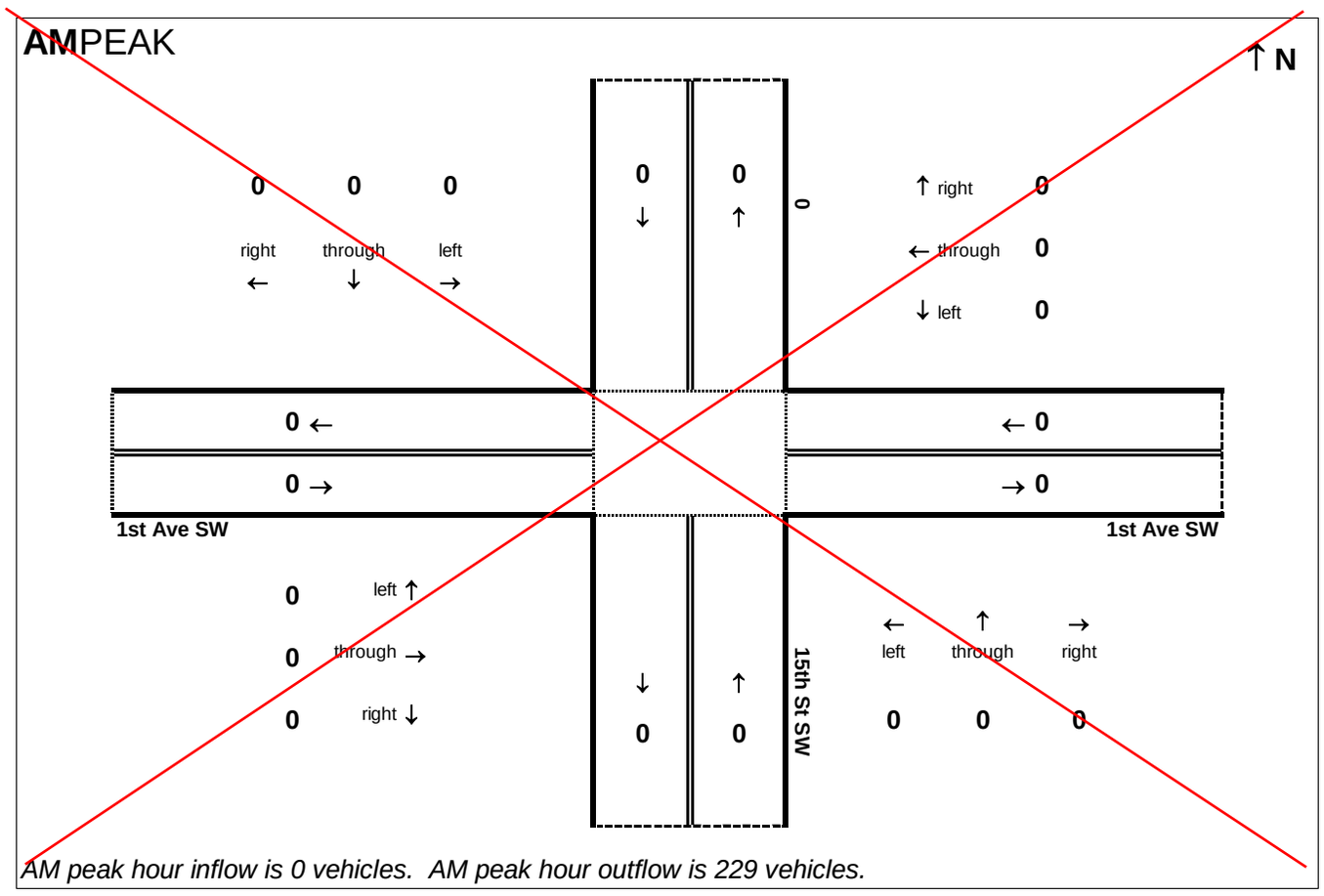
**Peak Hour Volume Breakouts Report:**
Intersection of 1st Ave SW and 14th St SW

**Traffic Forecast Release Date:**
December-16

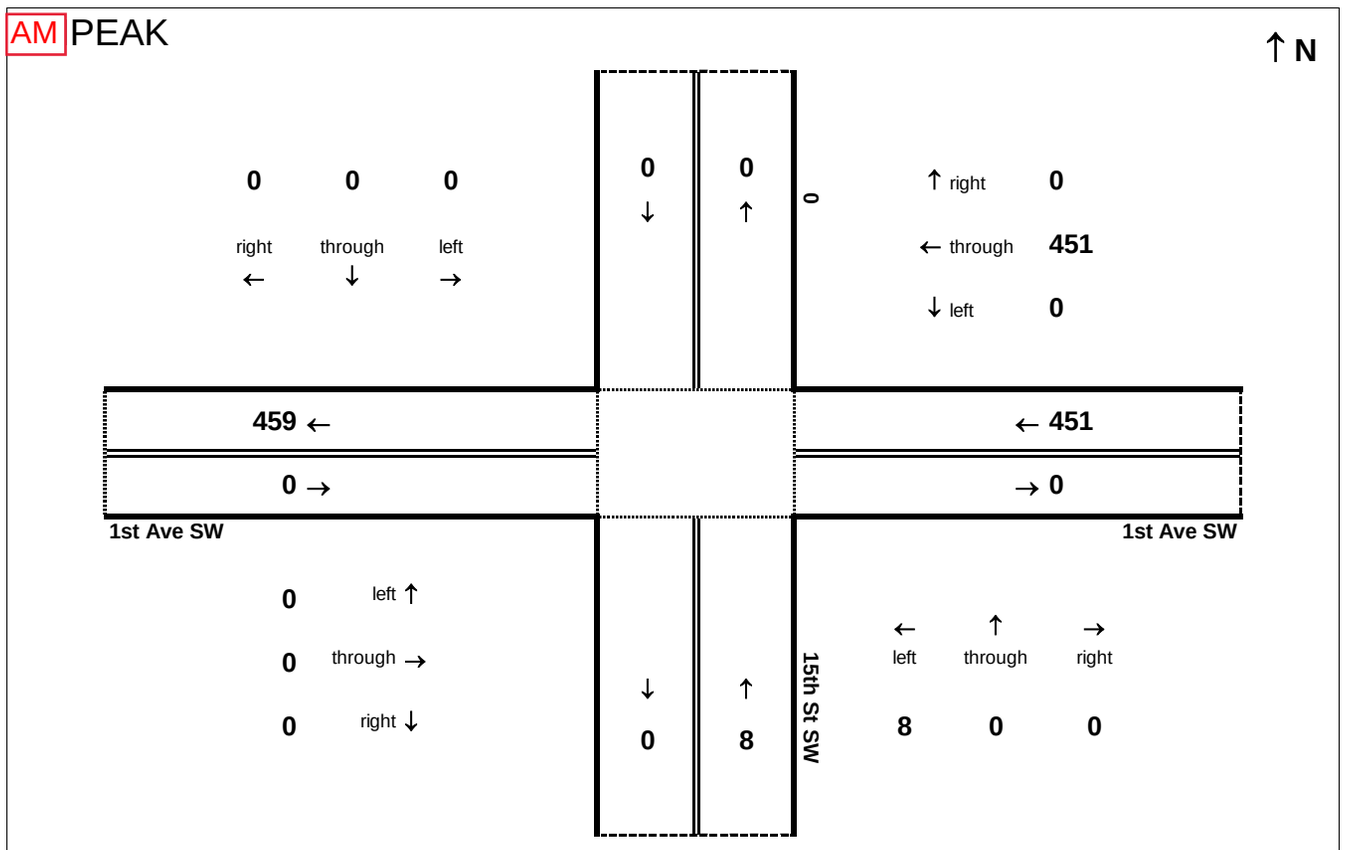
**Traffic Data Year:**
2040 No Build

**Project:**
U-4700




*AM peak hour inflow is 0 vehicles. AM peak hour outflow is 229 vehicles.*




*PM peak hour inflow is 459 vehicles. PM peak hour outflow is 461 vehicles.*

**Peak Hour Volume Breakouts Report:**
Intersection of 1st Ave SW and 15th St SW

**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 No Build

**Project:**
U-4700

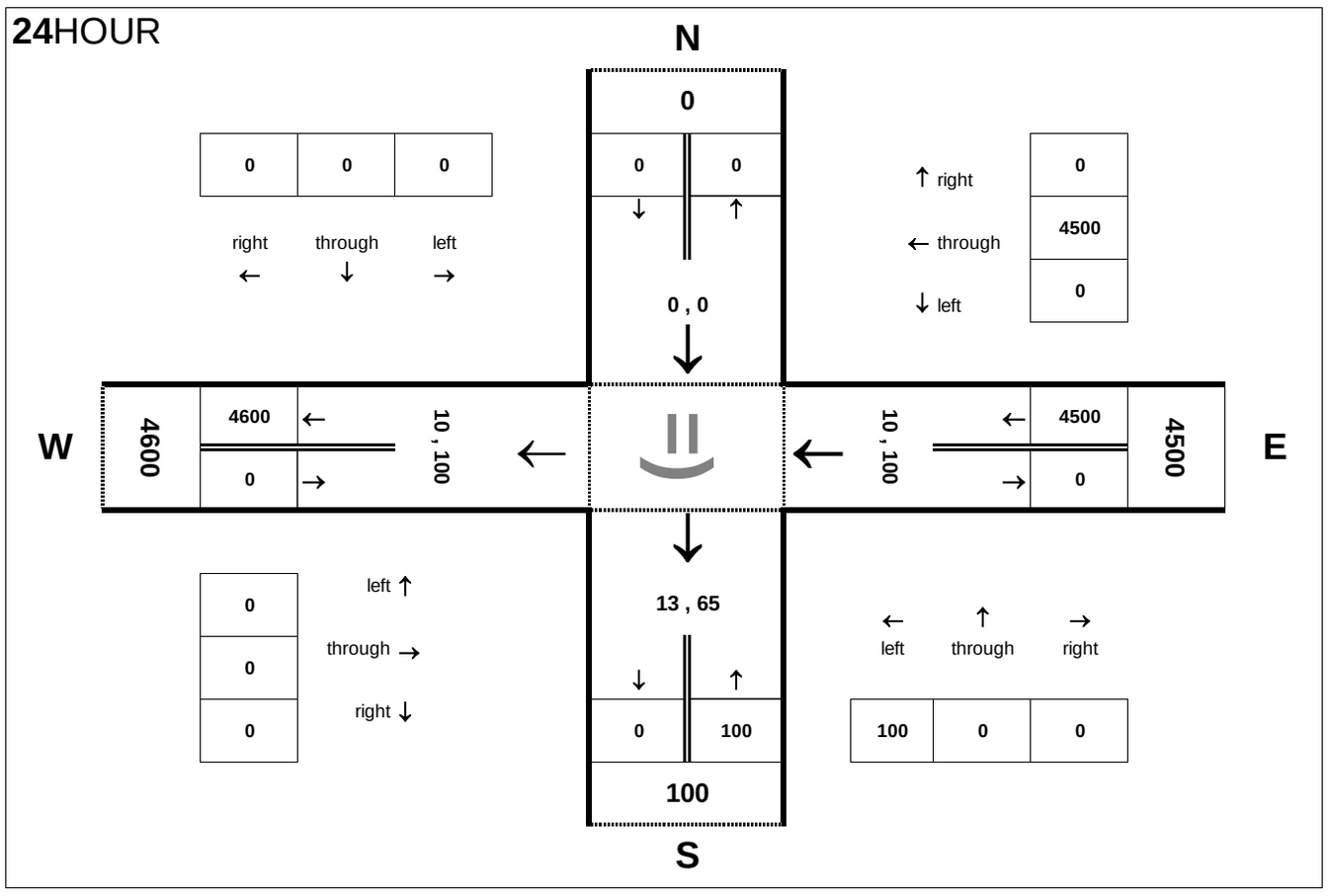
Note: In order to use the spreadsheet program, and use the 100% directional in the AM on the one-way street(s), the input directionals for the two way moves were reversed, and the pm output data was used for the am.

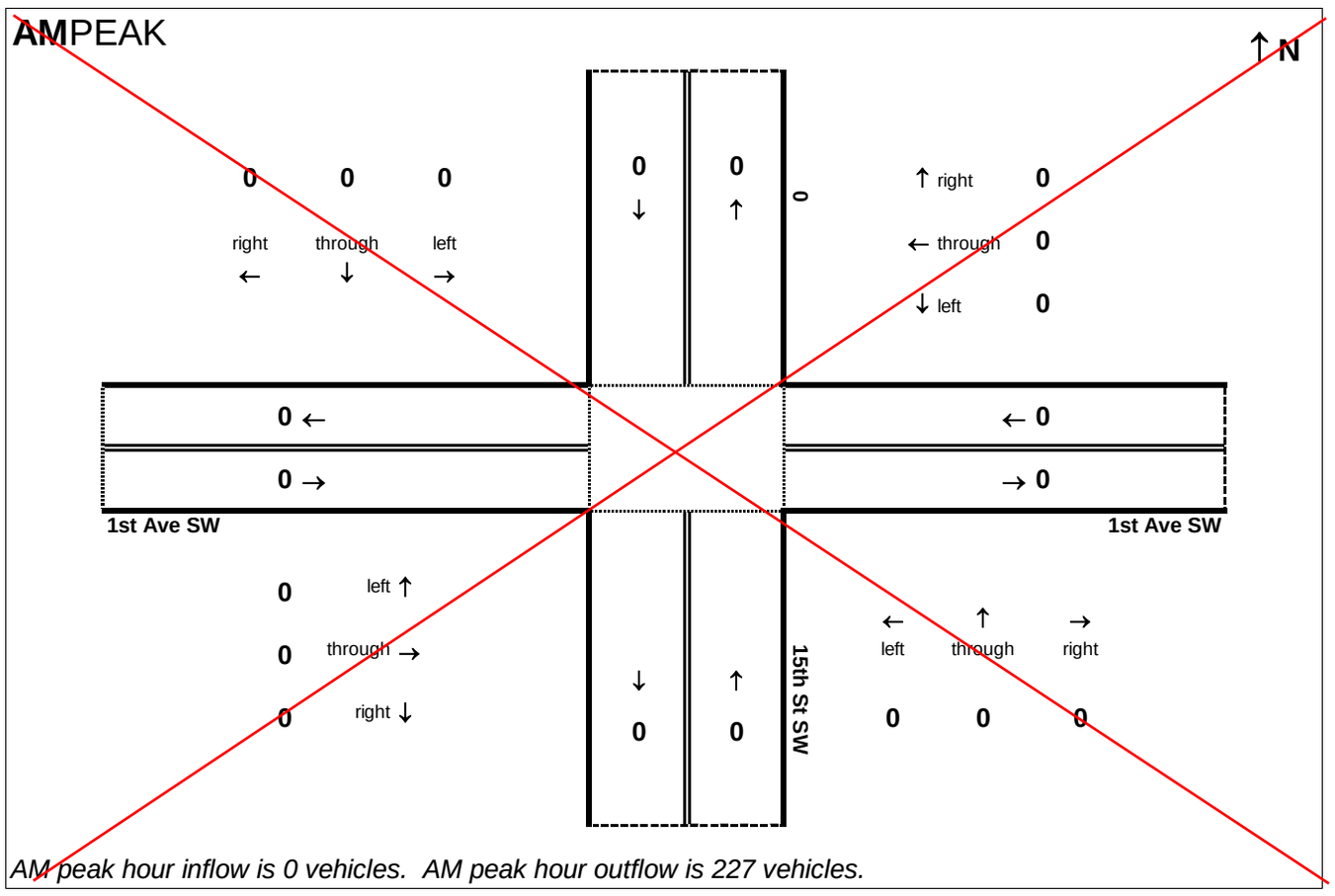
**Peak Hour Volume Breakouts Report:**
Intersection of 1st Ave SW and 15th St SW

**Traffic Forecast Release Date:**
December-16

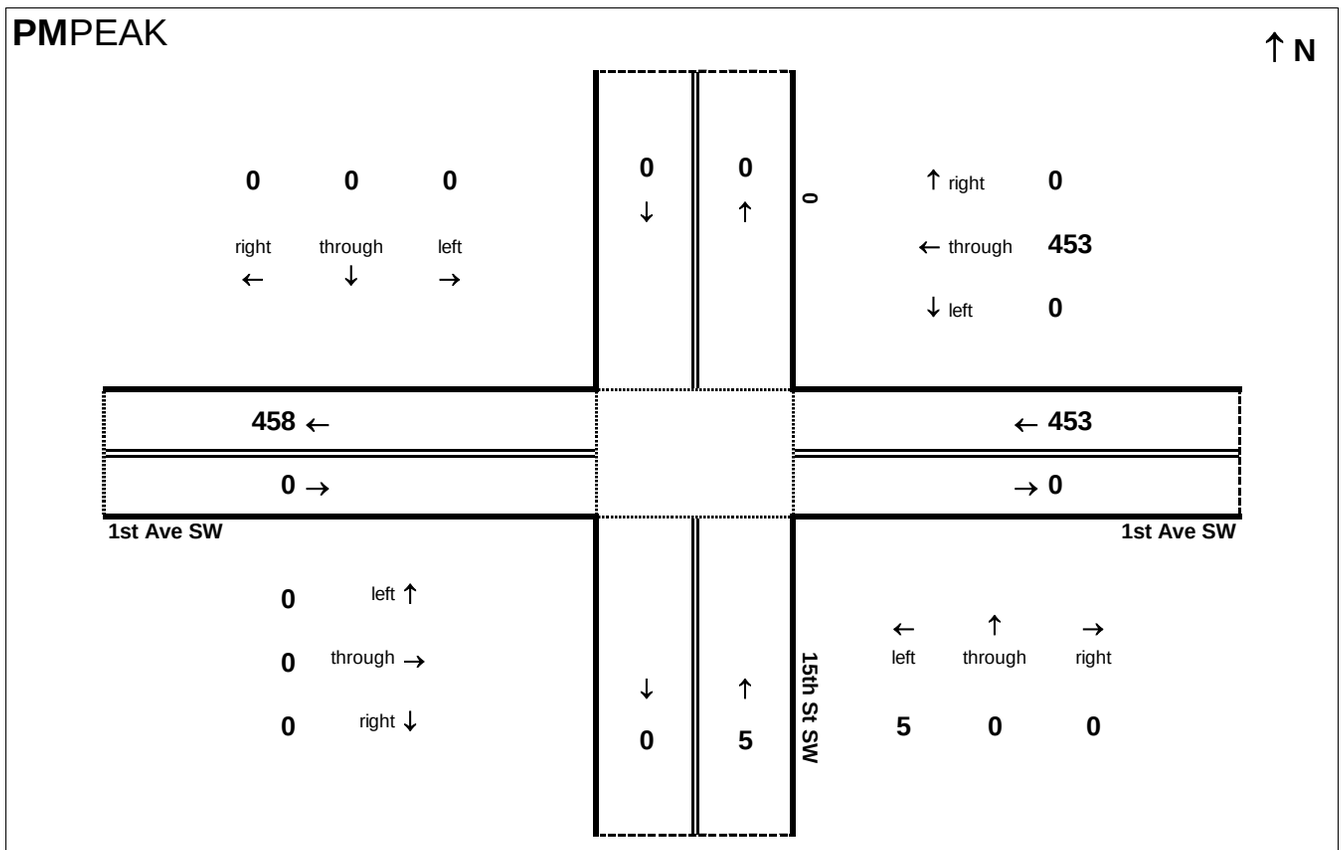
**Traffic Data Year:**
2040 No Build

**Project:**
U-4700

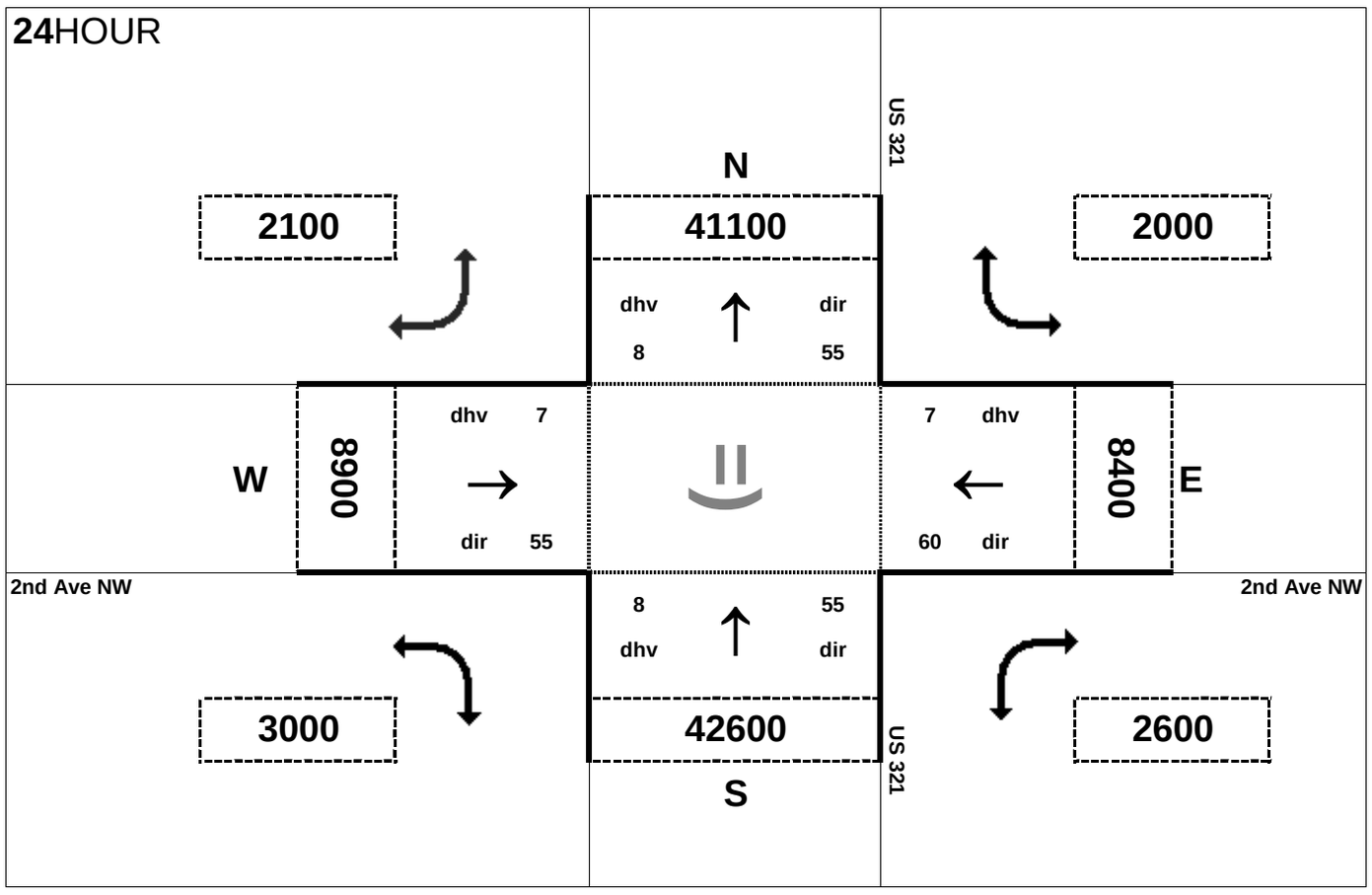



*AM peak hour inflow is 0 vehicles. AM peak hour outflow is 227 vehicles.*




*PM peak hour inflow is 458 vehicles. PM peak hour outflow is 461 vehicles.*

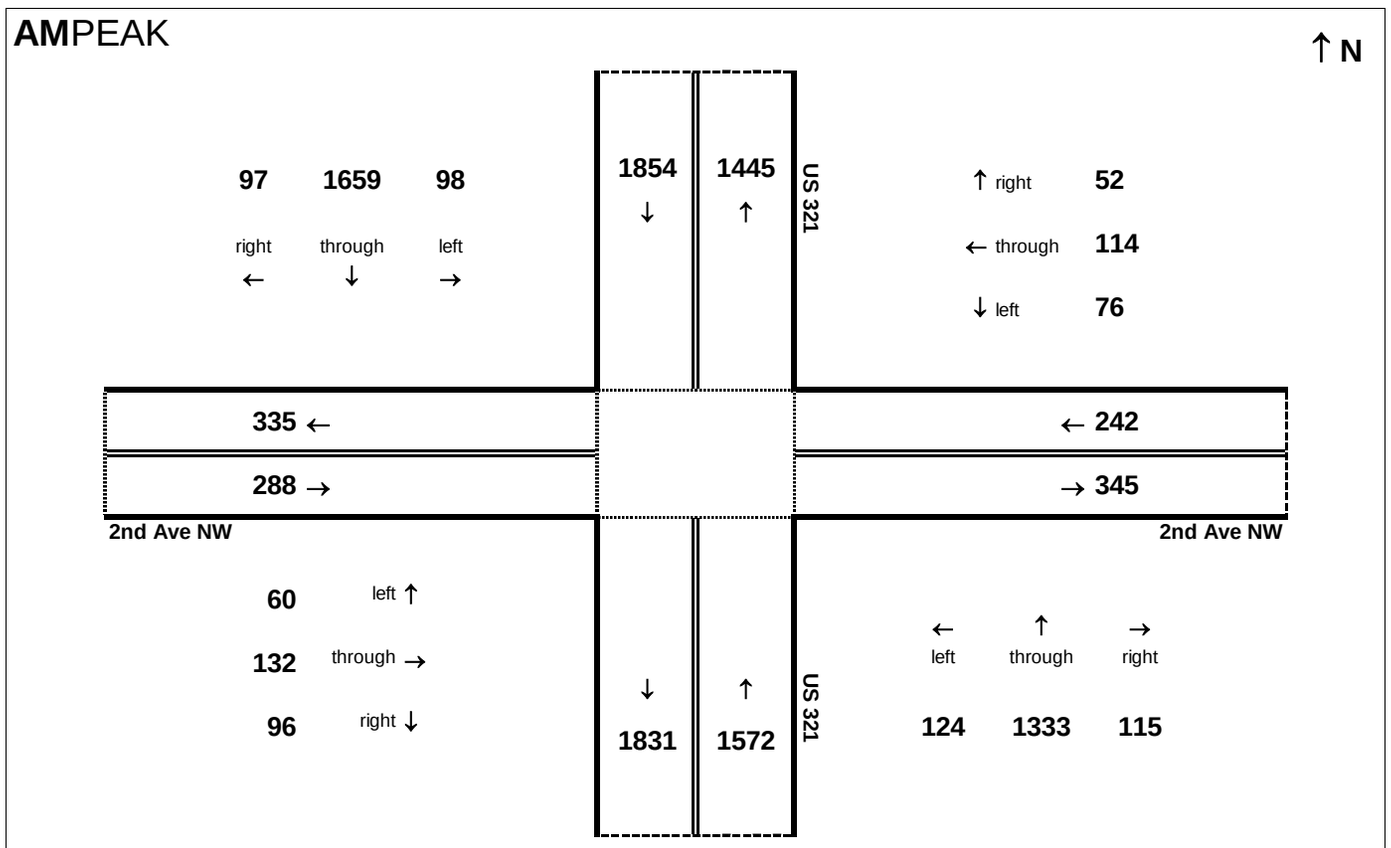



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and 2nd Ave NW (SR 1306)

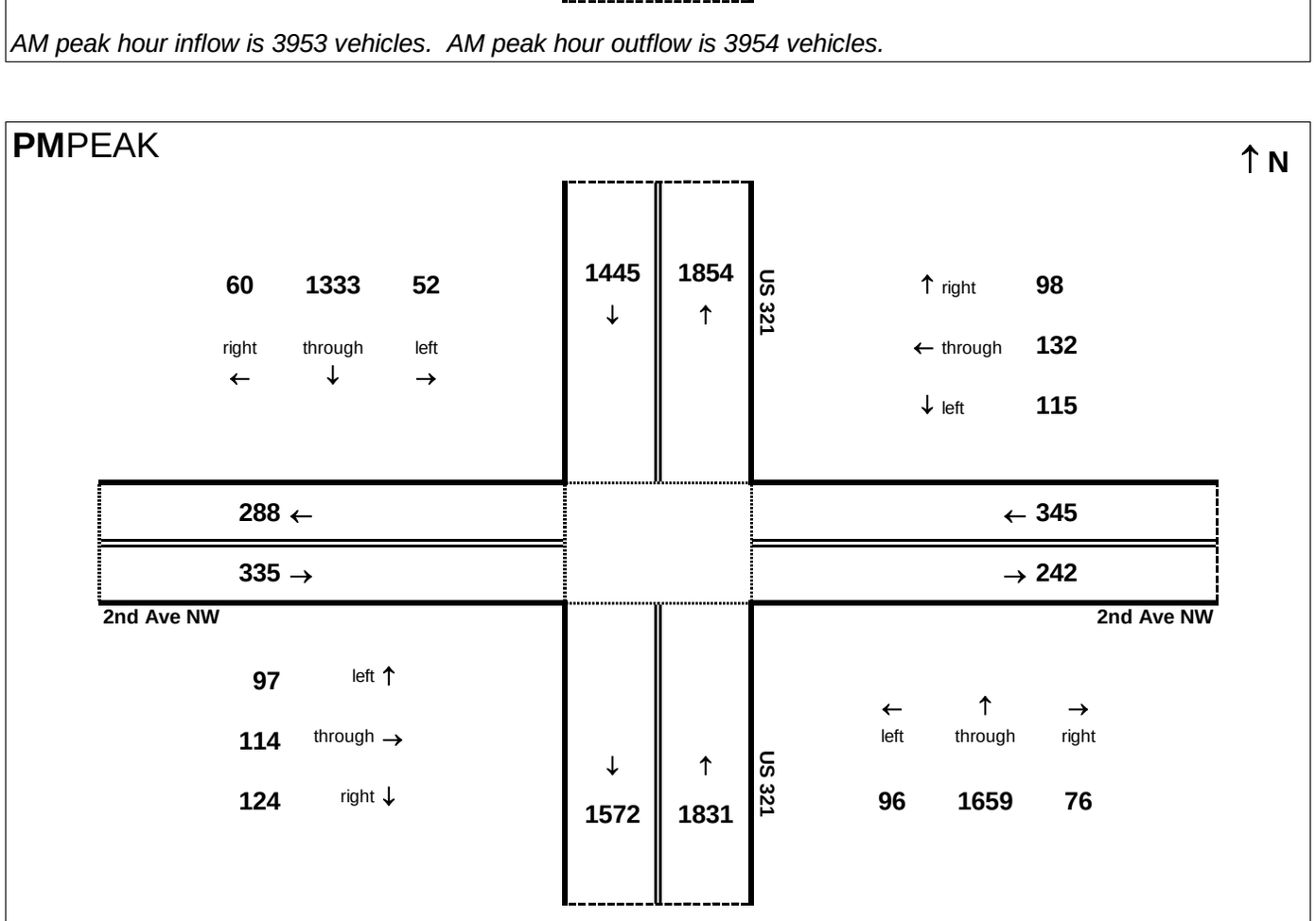
**Traffic Forecast Release Date:**
February-17

**Traffic Data Year:**
2040 No Build

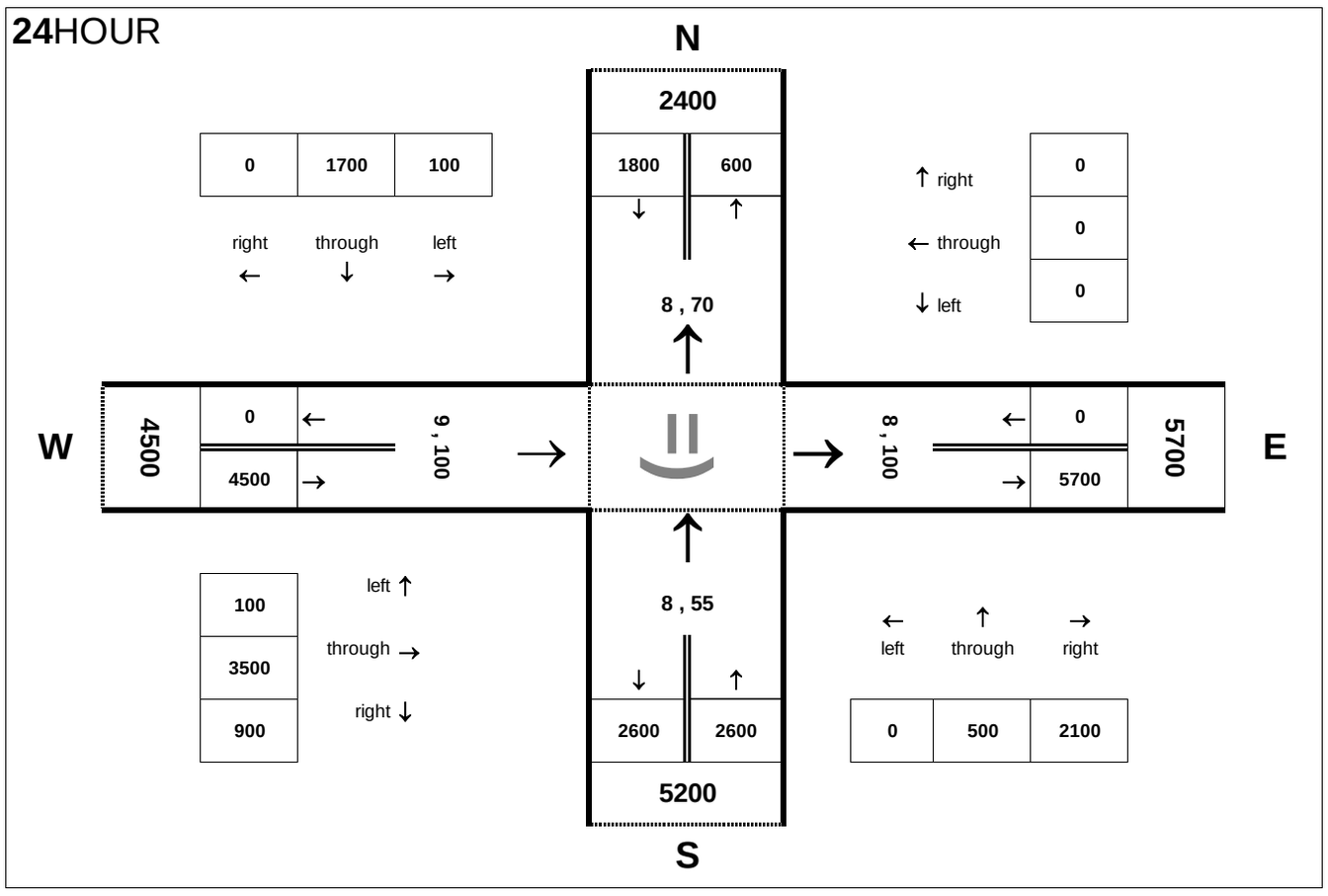
**Project:**
U-4700

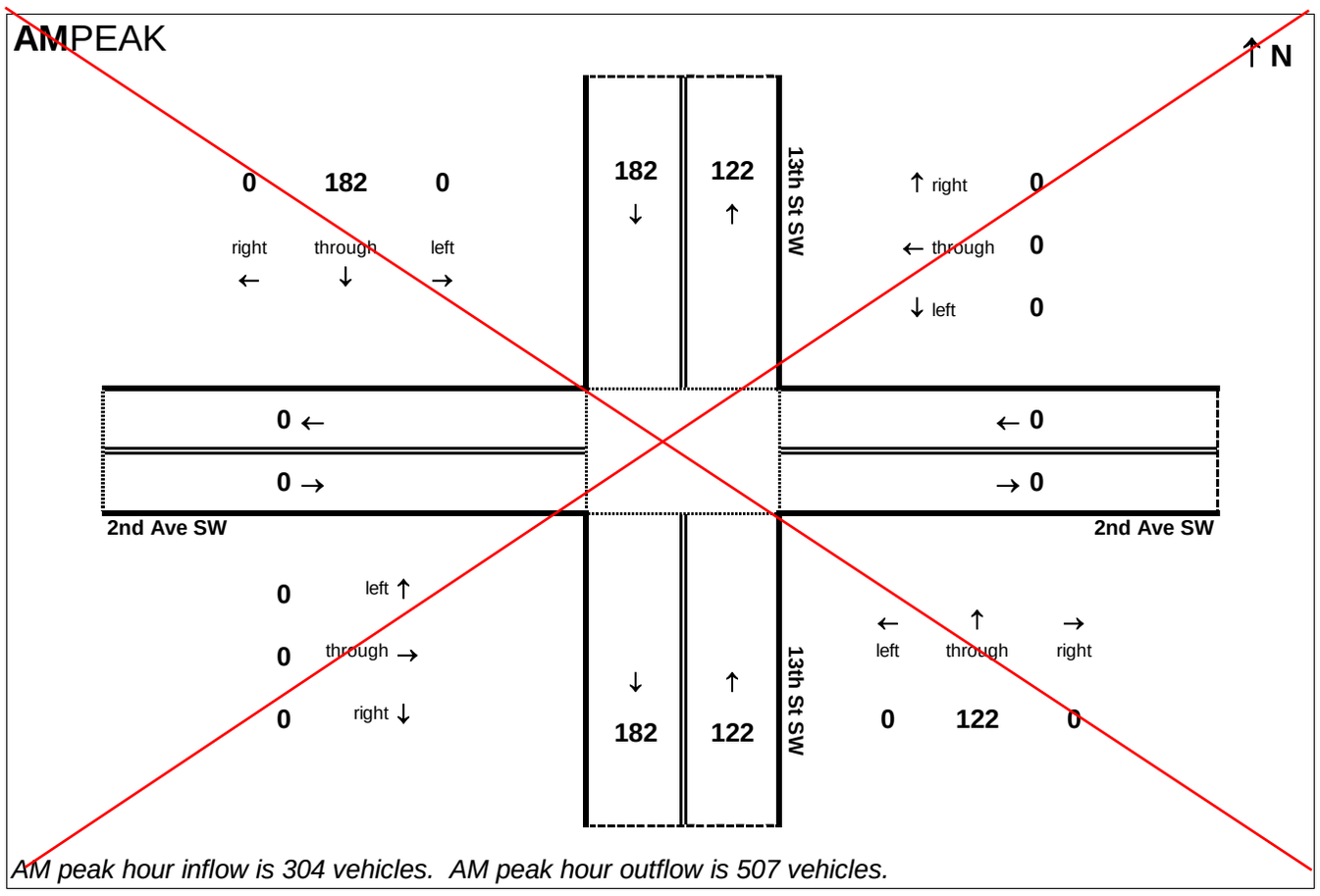



*AM peak hour inflow is 3953 vehicles. AM peak hour outflow is 3954 vehicles.*

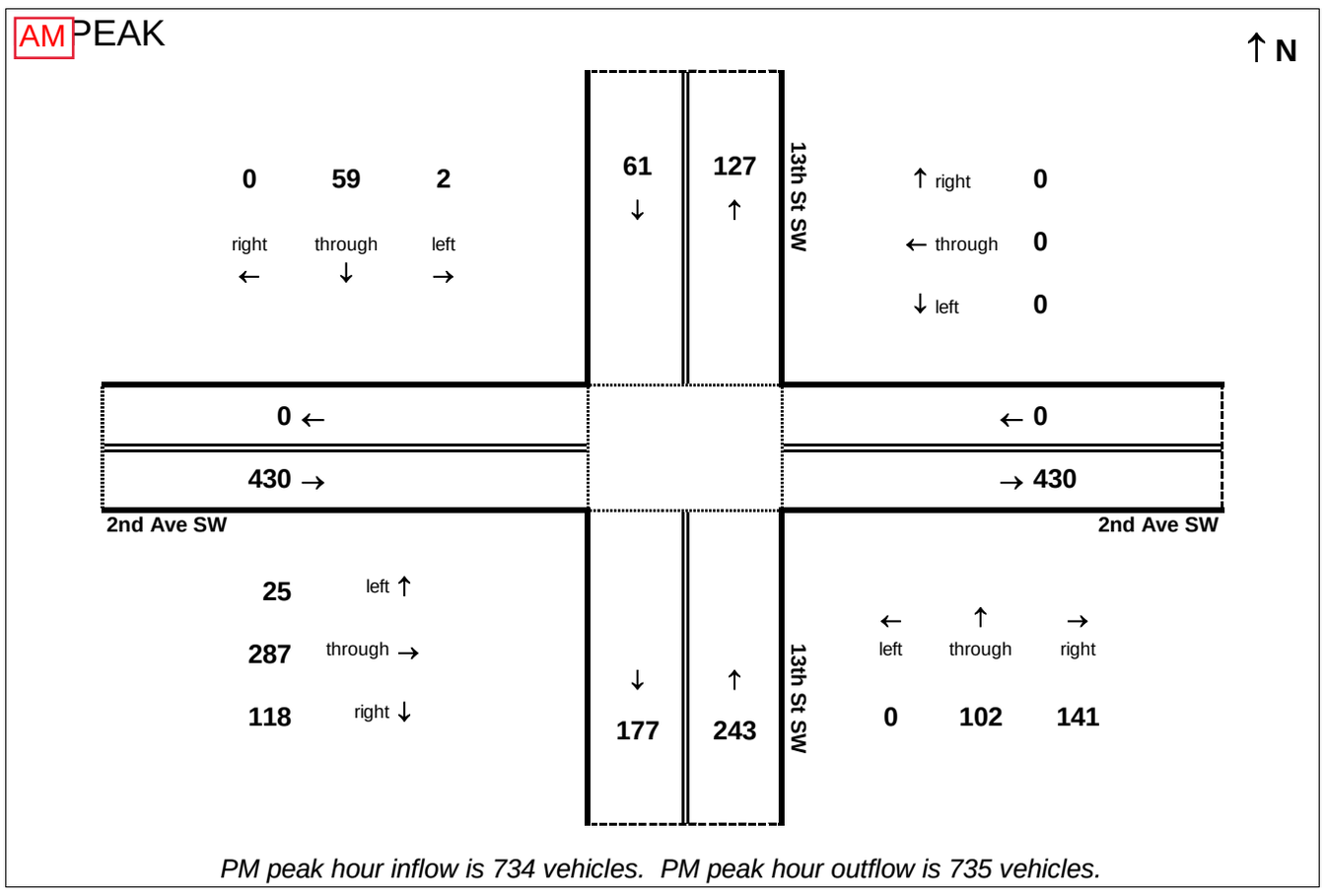



*PM peak hour inflow is 3954 vehicles. PM peak hour outflow is 3953 vehicles.*




*AM peak hour inflow is 304 vehicles. AM peak hour outflow is 507 vehicles.*




*PM peak hour inflow is 734 vehicles. PM peak hour outflow is 735 vehicles.*

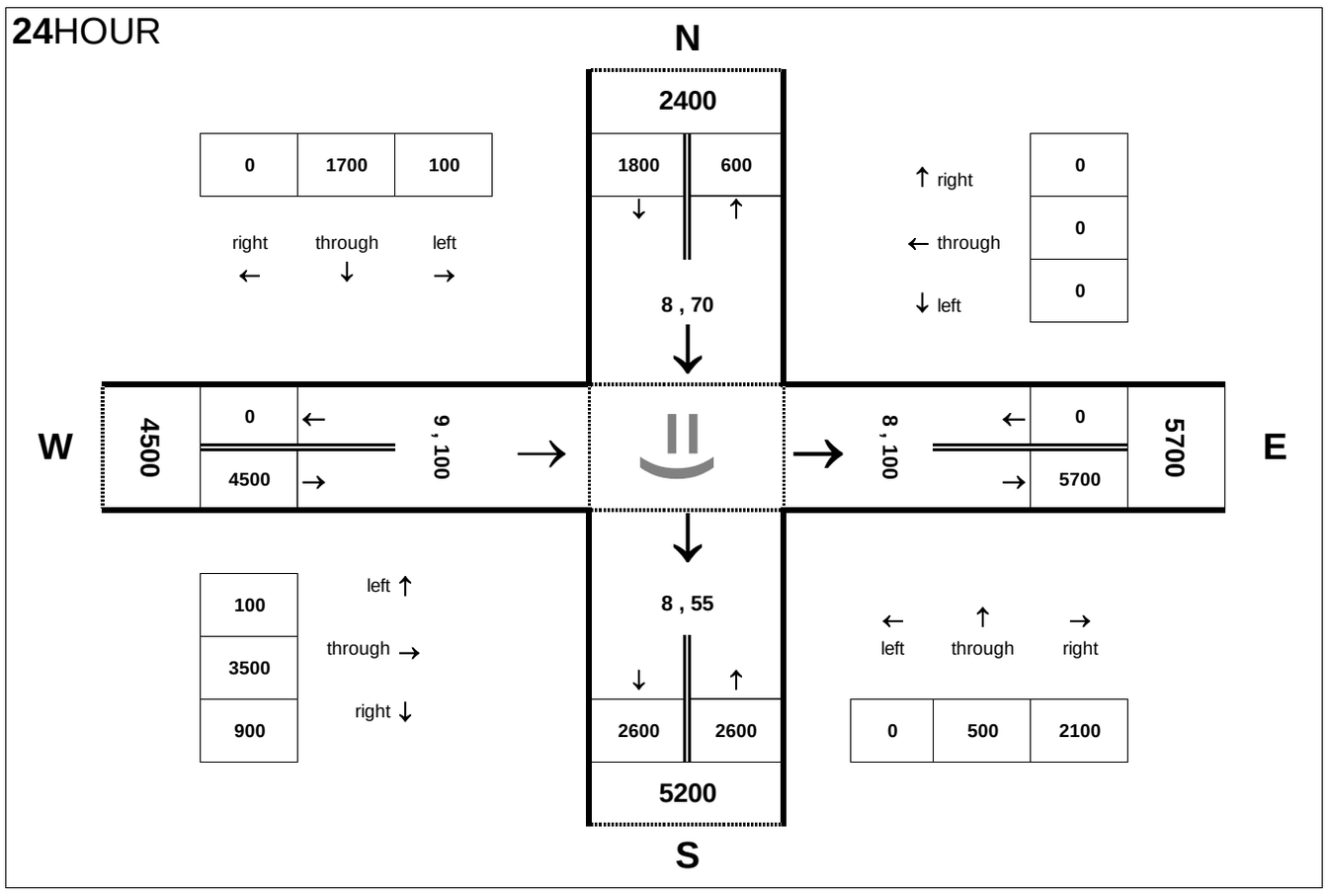
**Peak Hour Volume Breakouts Report:**
Intersection of 2nd Ave SW and 13th St SW

**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 No Build

**Project:**
U-4700

Note: In order to use the spreadsheet program, and use the 100% directional in the AM on the one-way street(s), the input directionals for the two way moves were reversed, and the pm output data was used for the am.

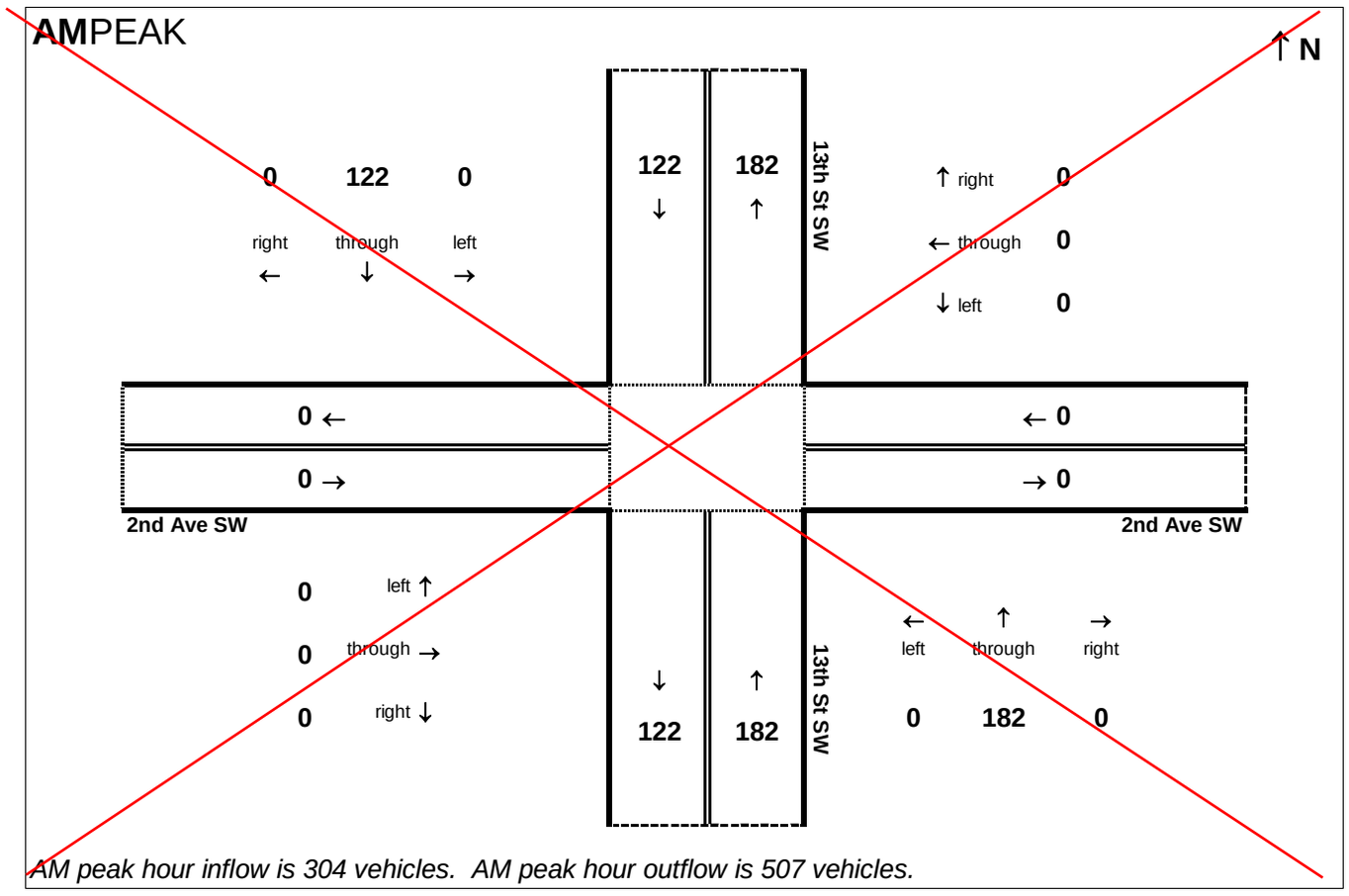



**Peak Hour Volume Breakouts Report:**
Intersection of 2nd Ave SW and 13th St SW

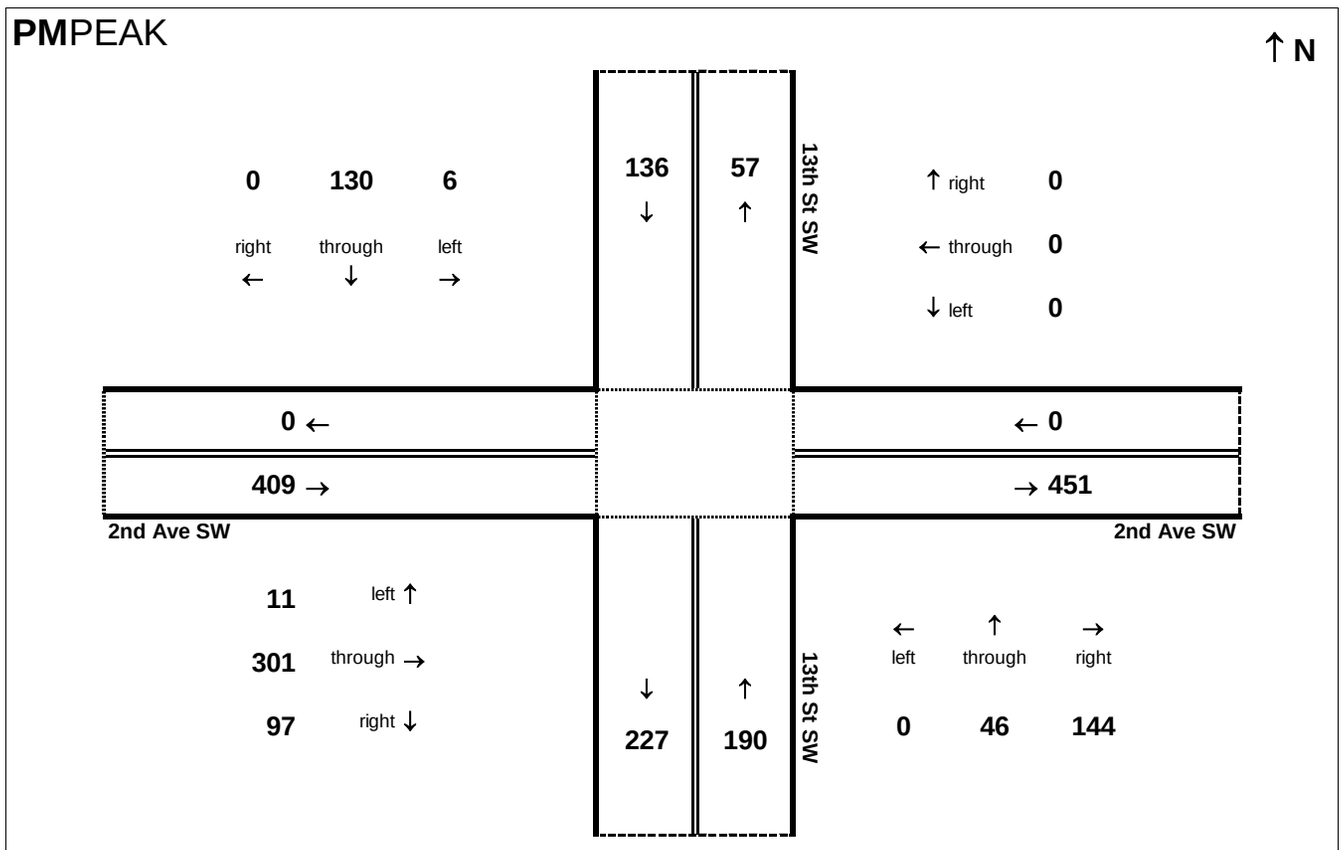
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 No Build

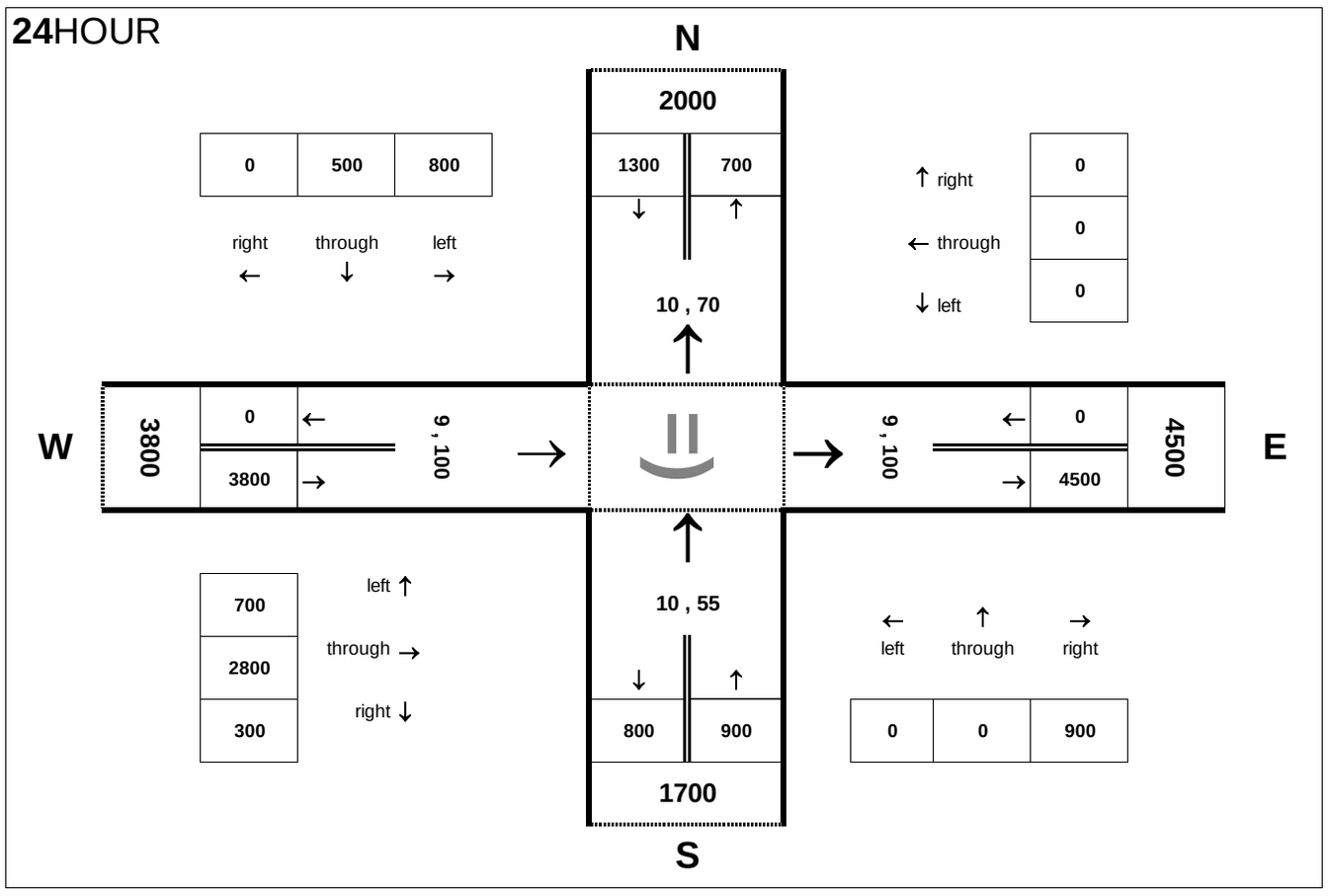
**Project:**
U-4700

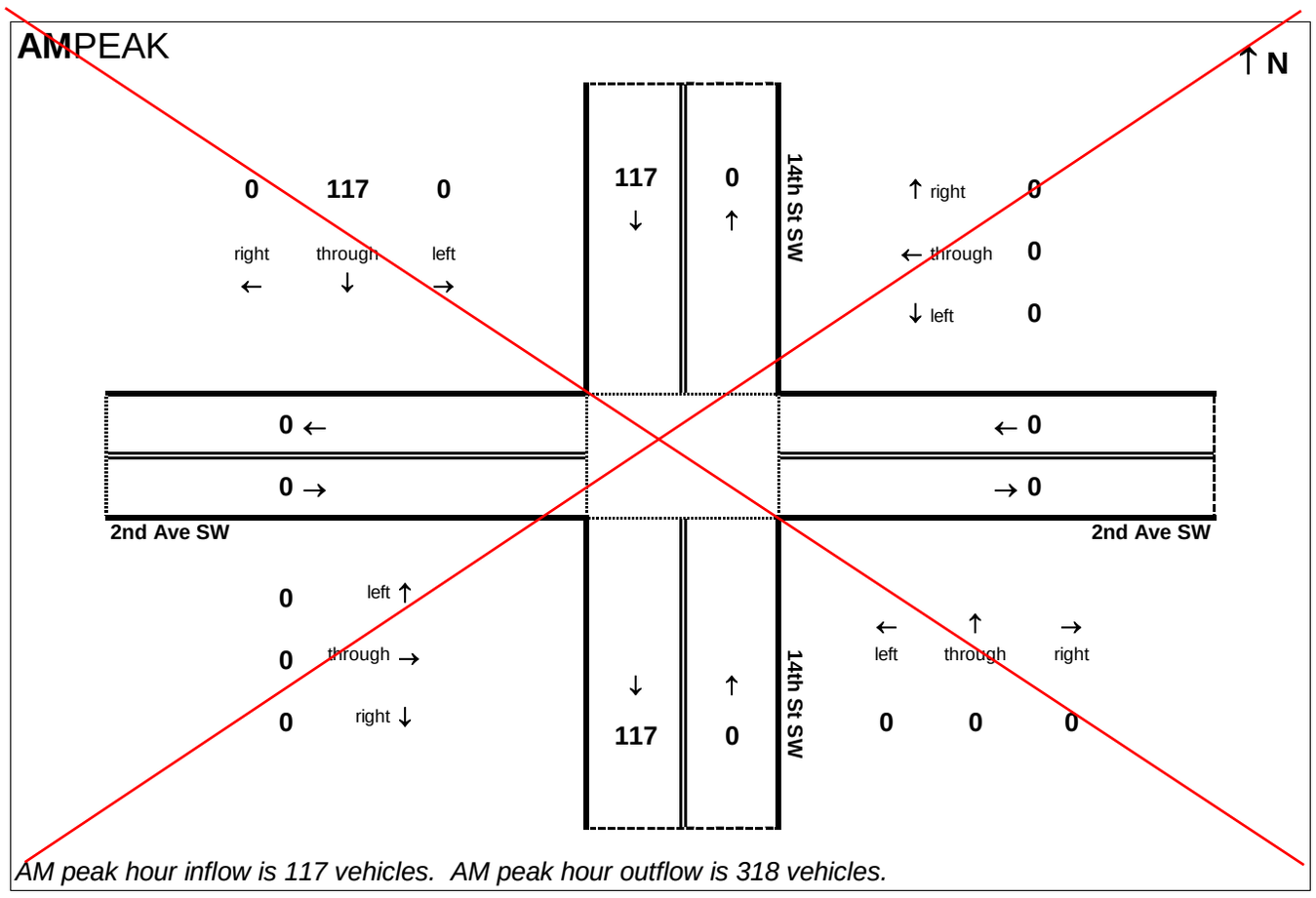


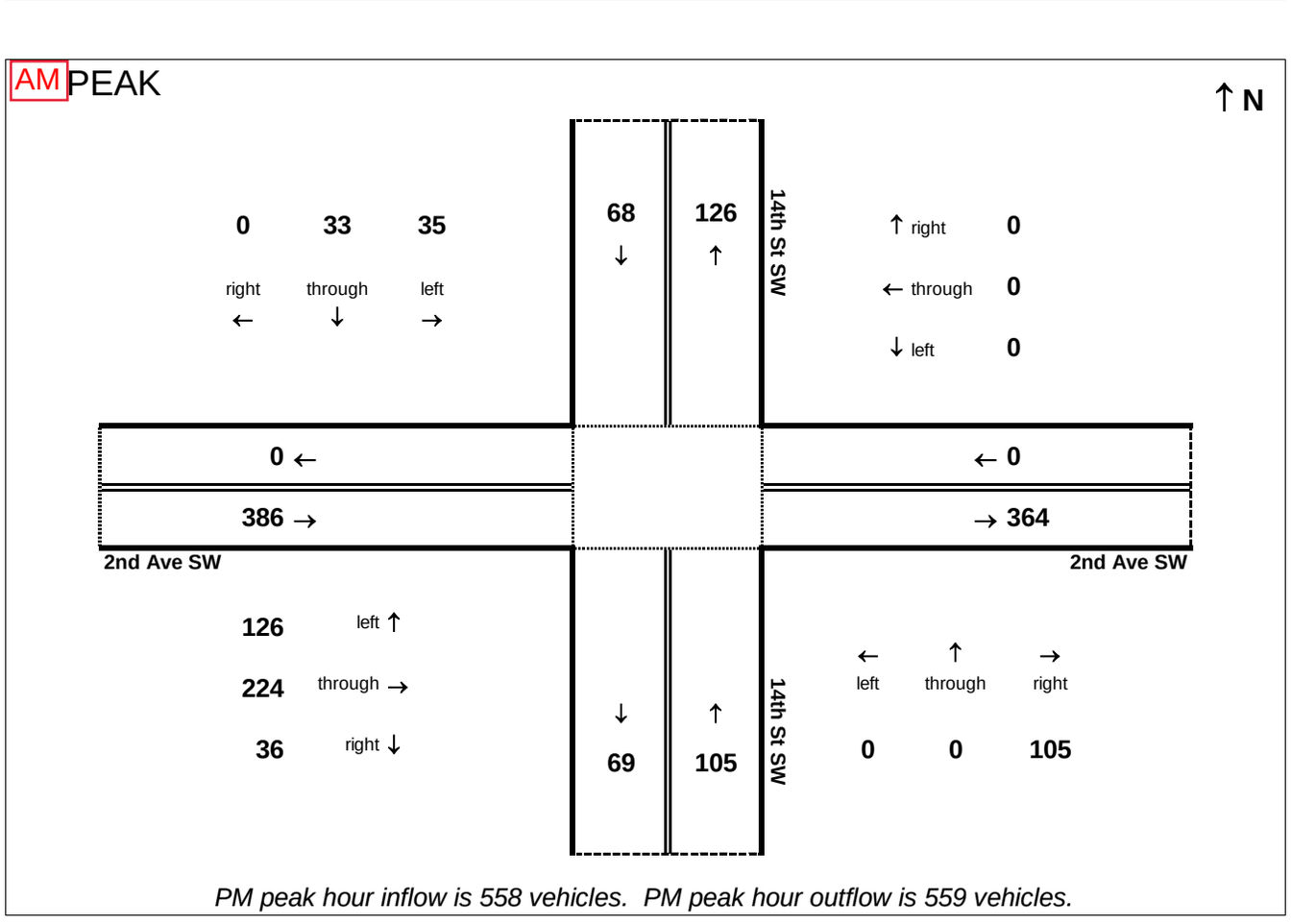

*AM peak hour inflow is 304 vehicles. AM peak hour outflow is 507 vehicles.*




*PM peak hour inflow is 734 vehicles. PM peak hour outflow is 734 vehicles.*



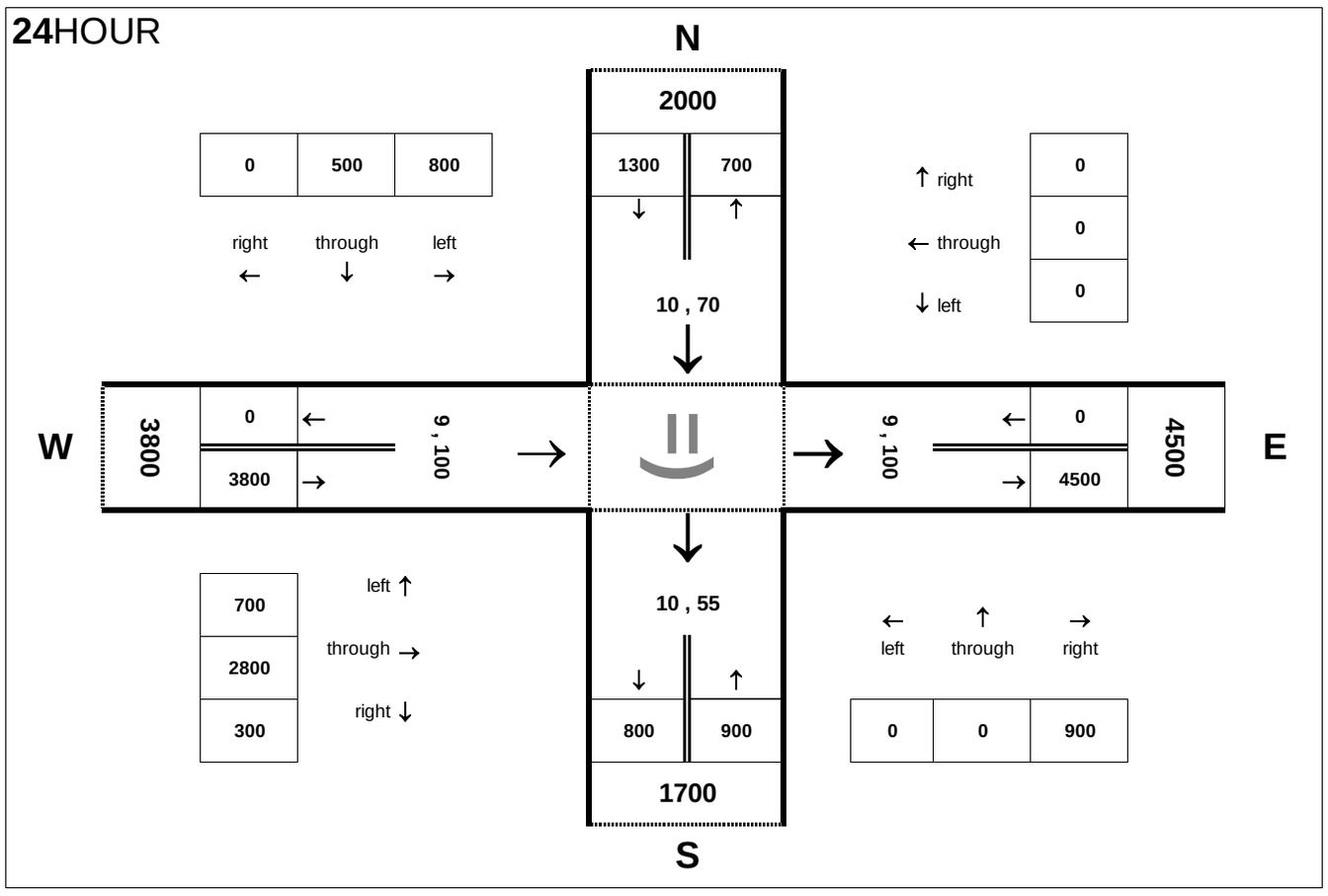

**Peak Hour Volume Breakouts Report:**
Intersection of 2nd Ave SW and 14th St SW

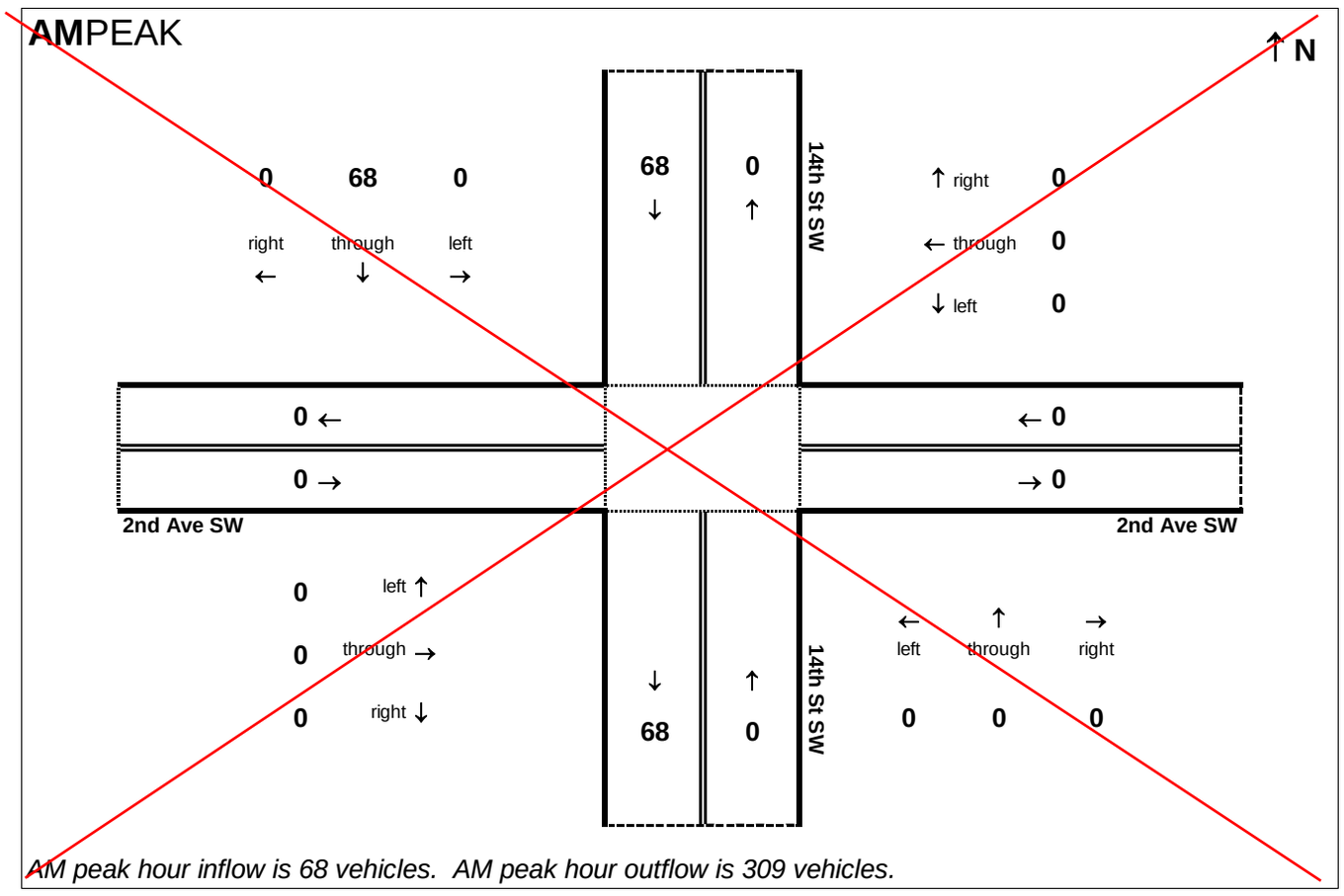
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 No Build

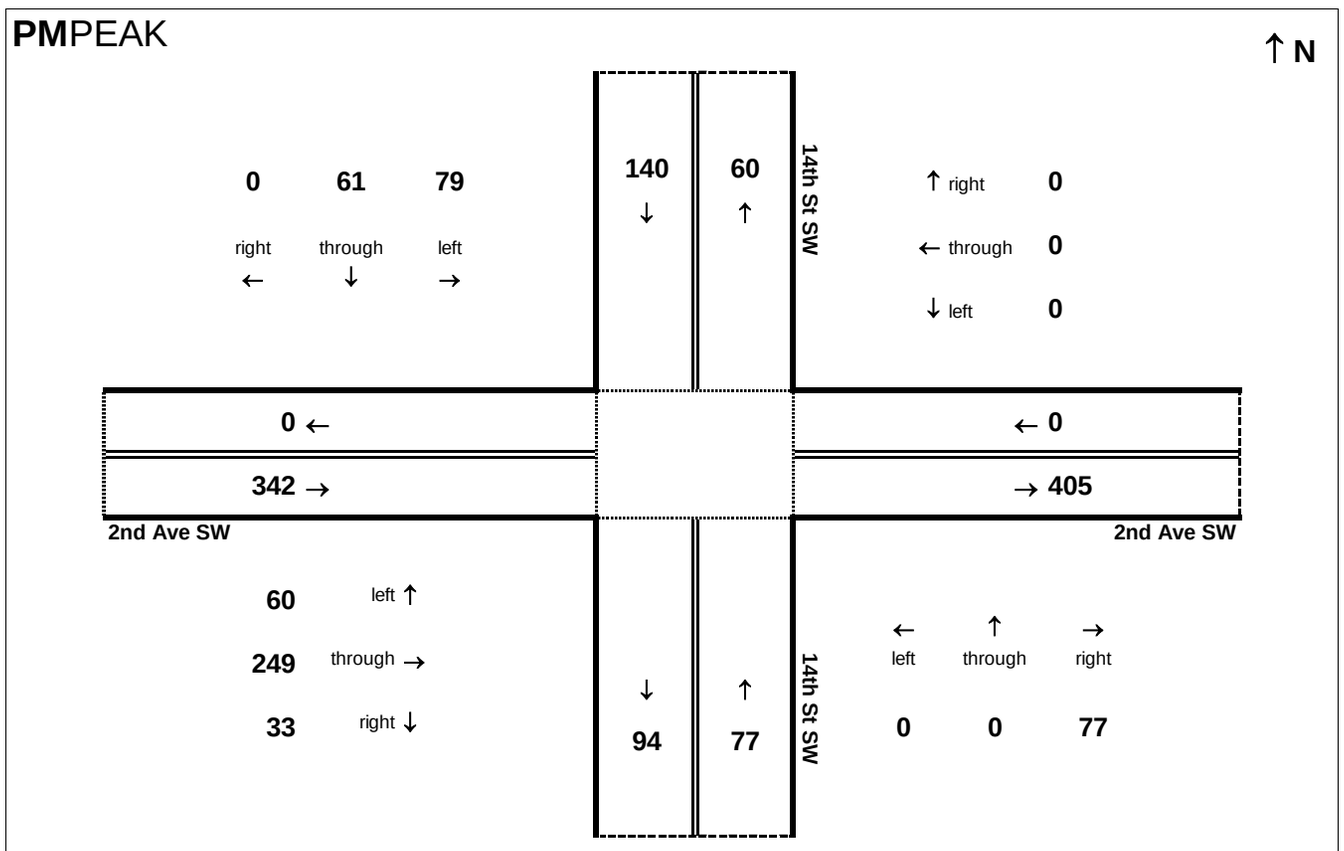
**Project:**
U-4700

Note: In order to use the spreadsheet program, and use the 100% directional in the AM on the one-way street(s), the input directionals for the two way moves were reversed, and the pm output data was used for the am.




*AM peak hour inflow is 68 vehicles. AM peak hour outflow is 309 vehicles.*



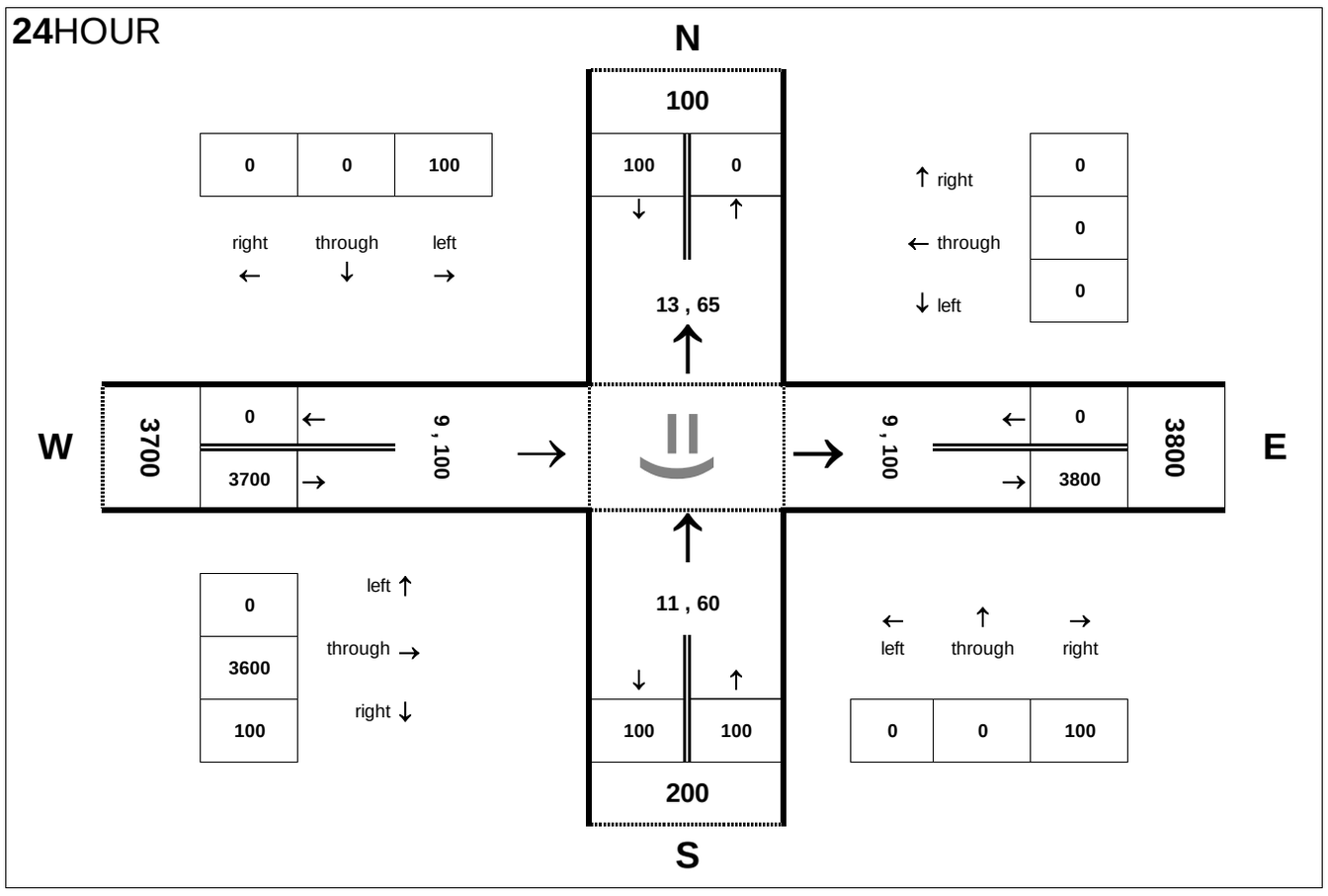

*PM peak hour inflow is 559 vehicles. PM peak hour outflow is 559 vehicles.*

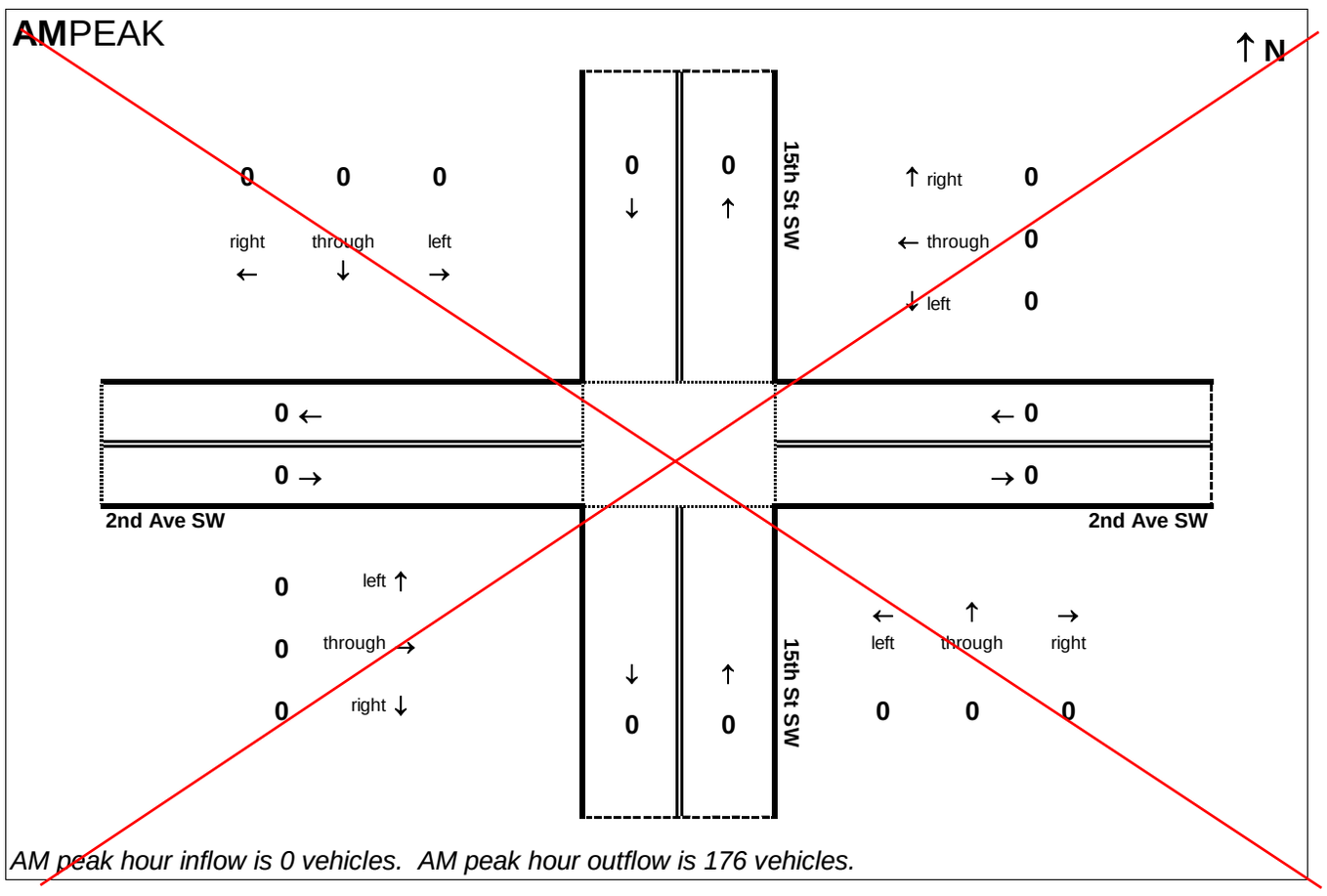
**Peak Hour Volume Breakouts Report:**
Intersection of 2nd Ave SW and 14th St SW

**Traffic Forecast Release Date:**
December-16

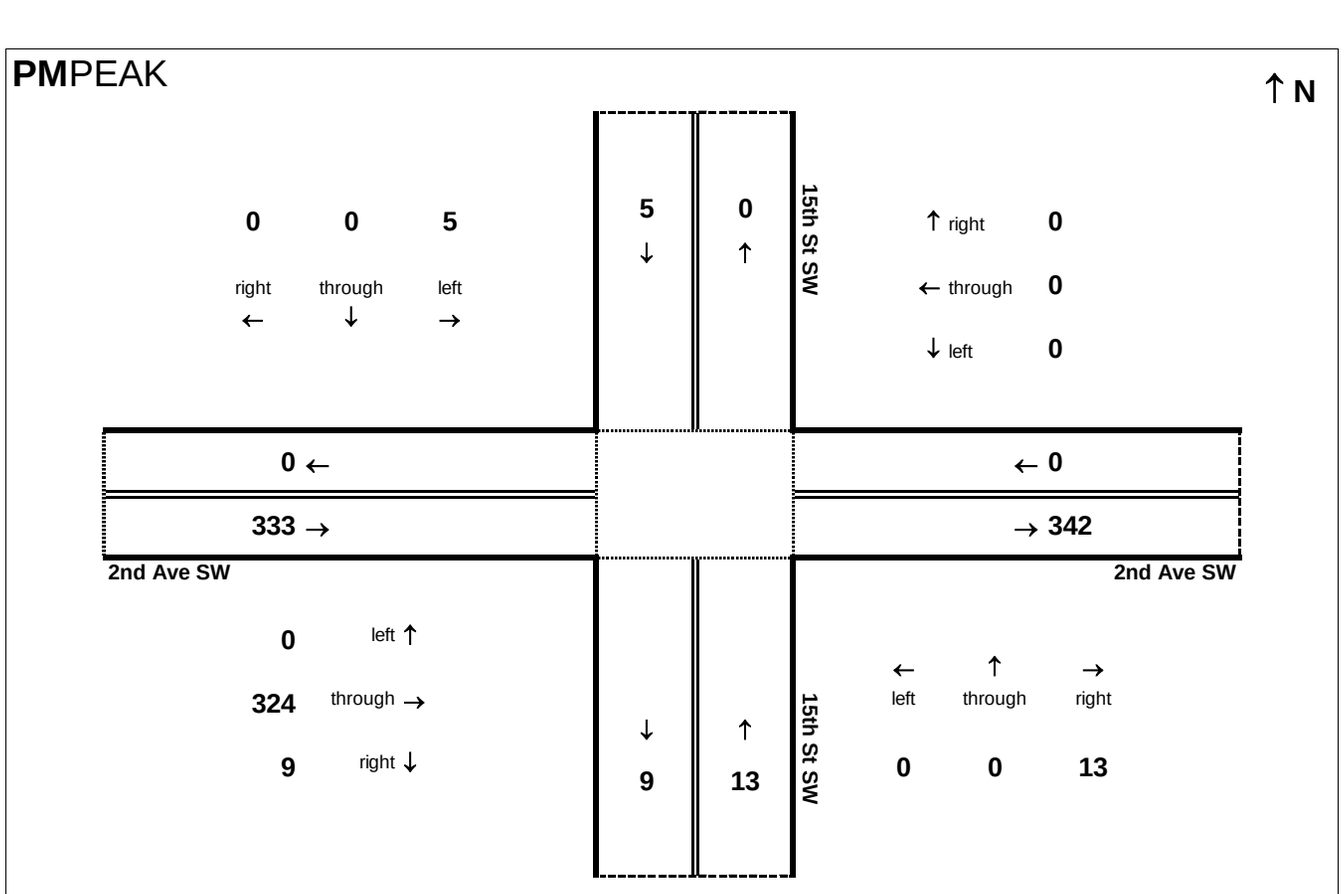
**Traffic Data Year:**
2040 No Build

**Project:**
U-4700




*AM peak hour inflow is 0 vehicles. AM peak hour outflow is 176 vehicles.*




*PM peak hour inflow is 351 vehicles. PM peak hour outflow is 355 vehicles.*

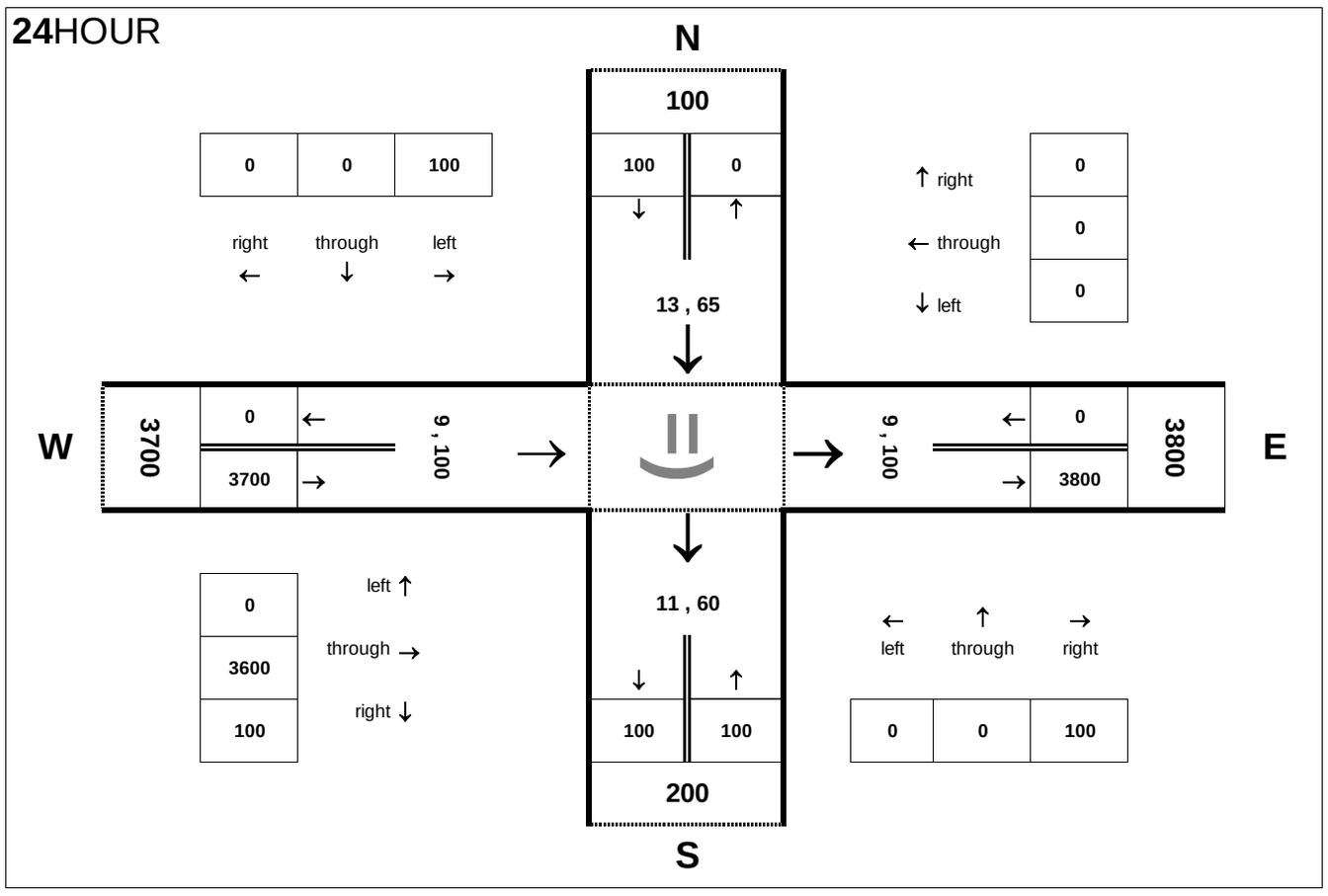
**Peak Hour Volume Breakouts Report:**
Intersection of 2nd Ave SW and 15th St SW

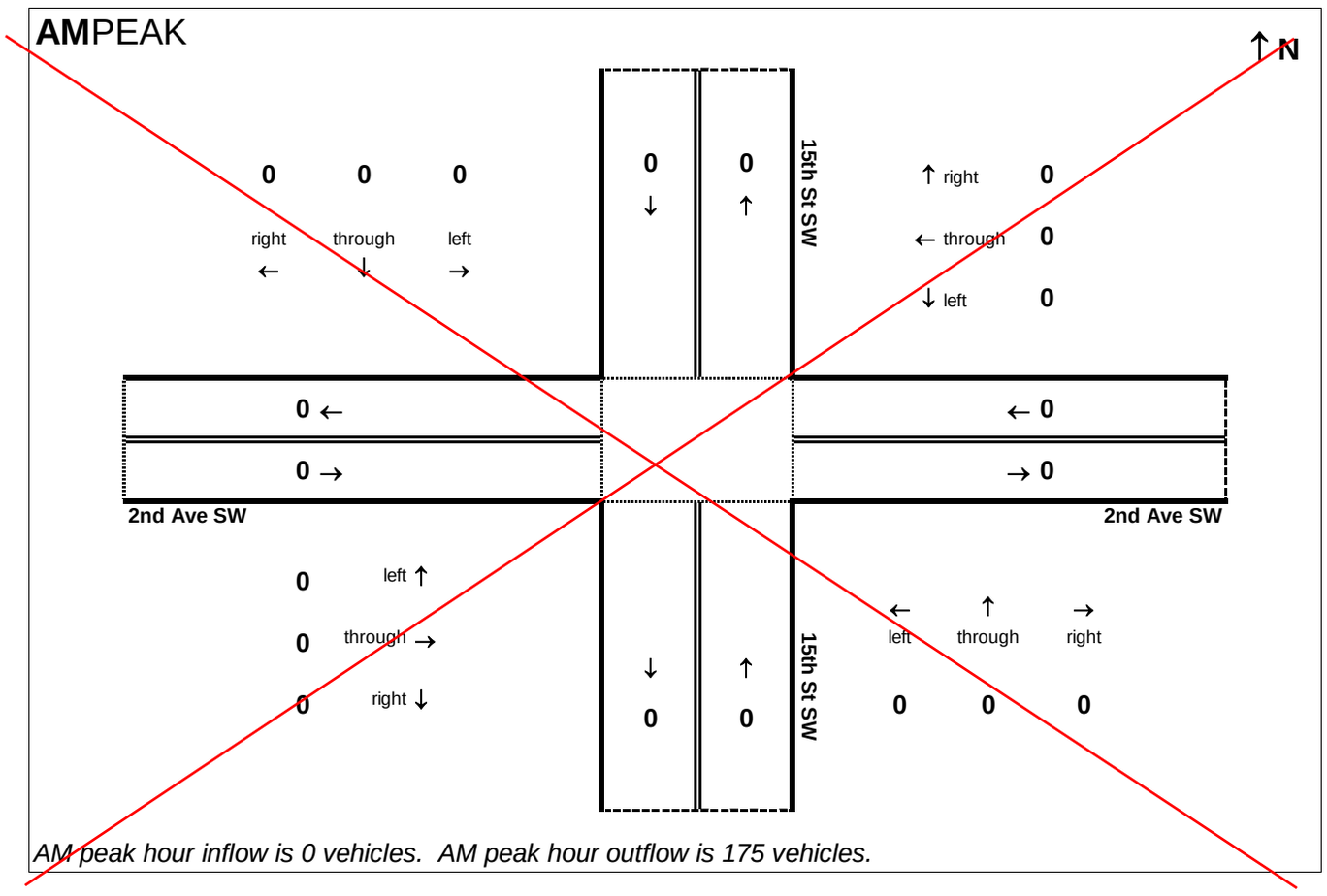
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 No Build

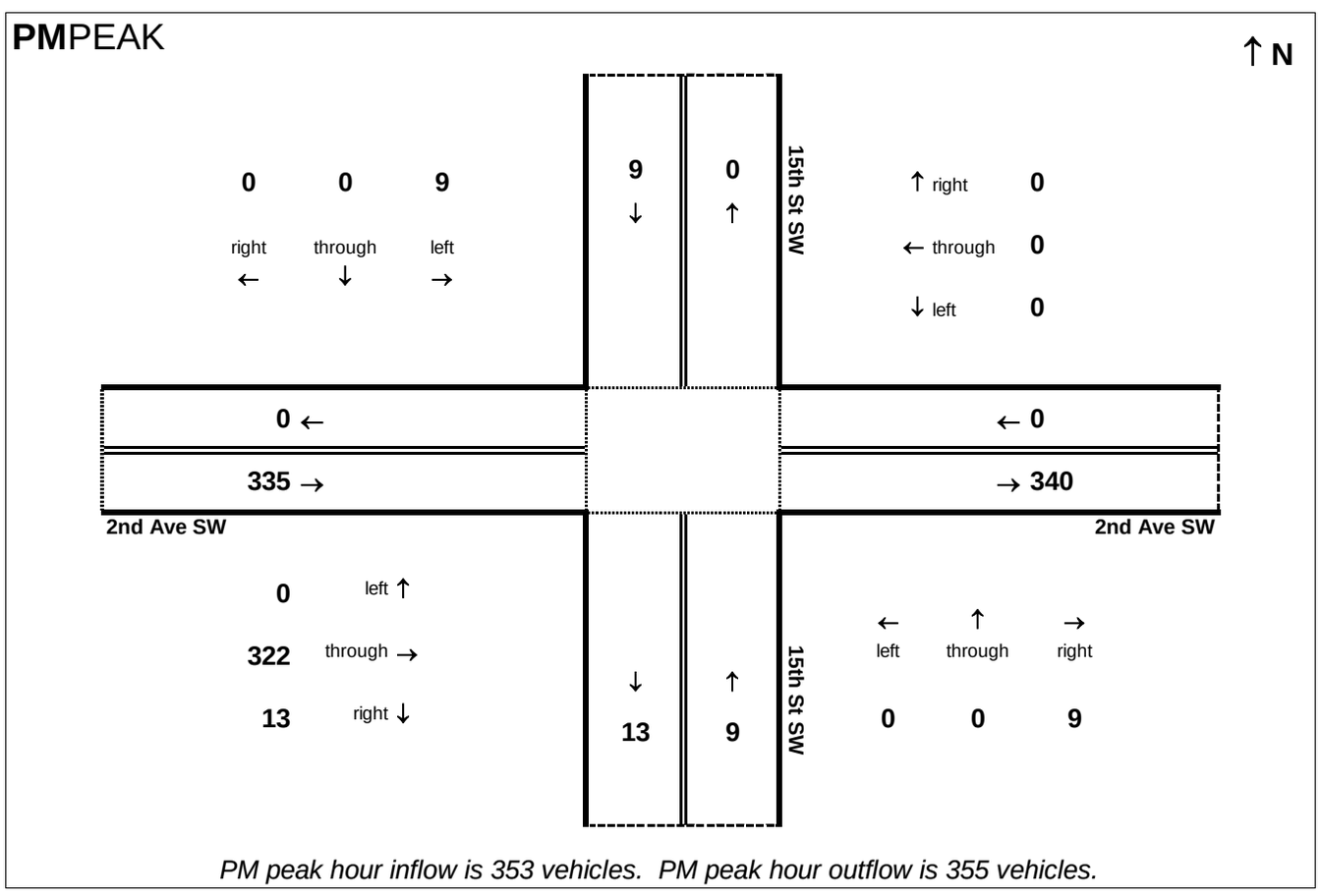
**Project:**
U-4700

Note: In order to use the spreadsheet program, and use the 100% directional in the AM on the one-way street(s), the input directionals for the two way moves were reversed, and the pm output data was used for the am.




*AM peak hour inflow is 0 vehicles. AM peak hour outflow is 175 vehicles.*



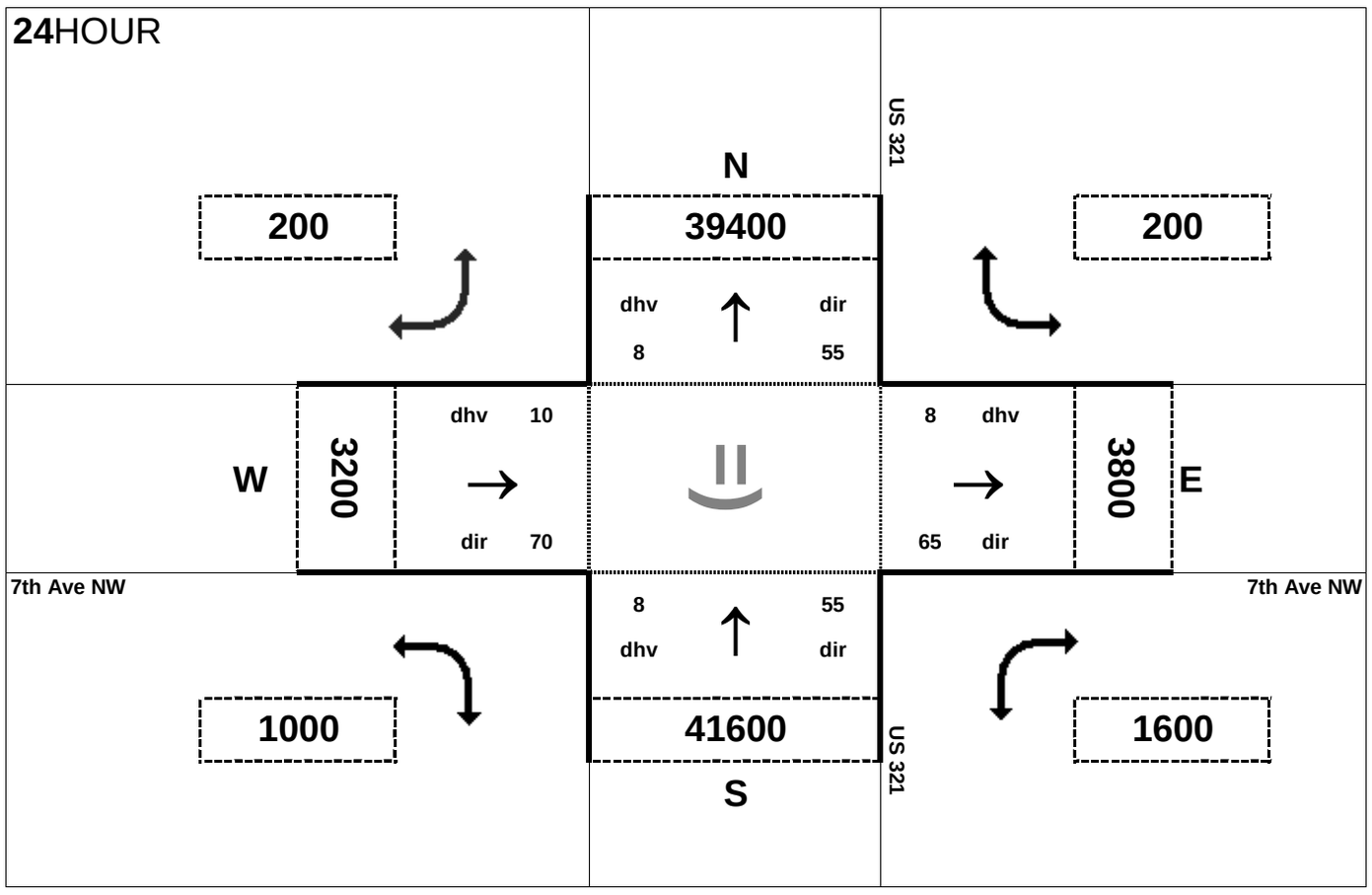

*PM peak hour inflow is 353 vehicles. PM peak hour outflow is 355 vehicles.*

**Peak Hour Volume Breakouts Report:**
Intersection of 2nd Ave SW and 15th St SW

**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 No Build

**Project:**
U-4700

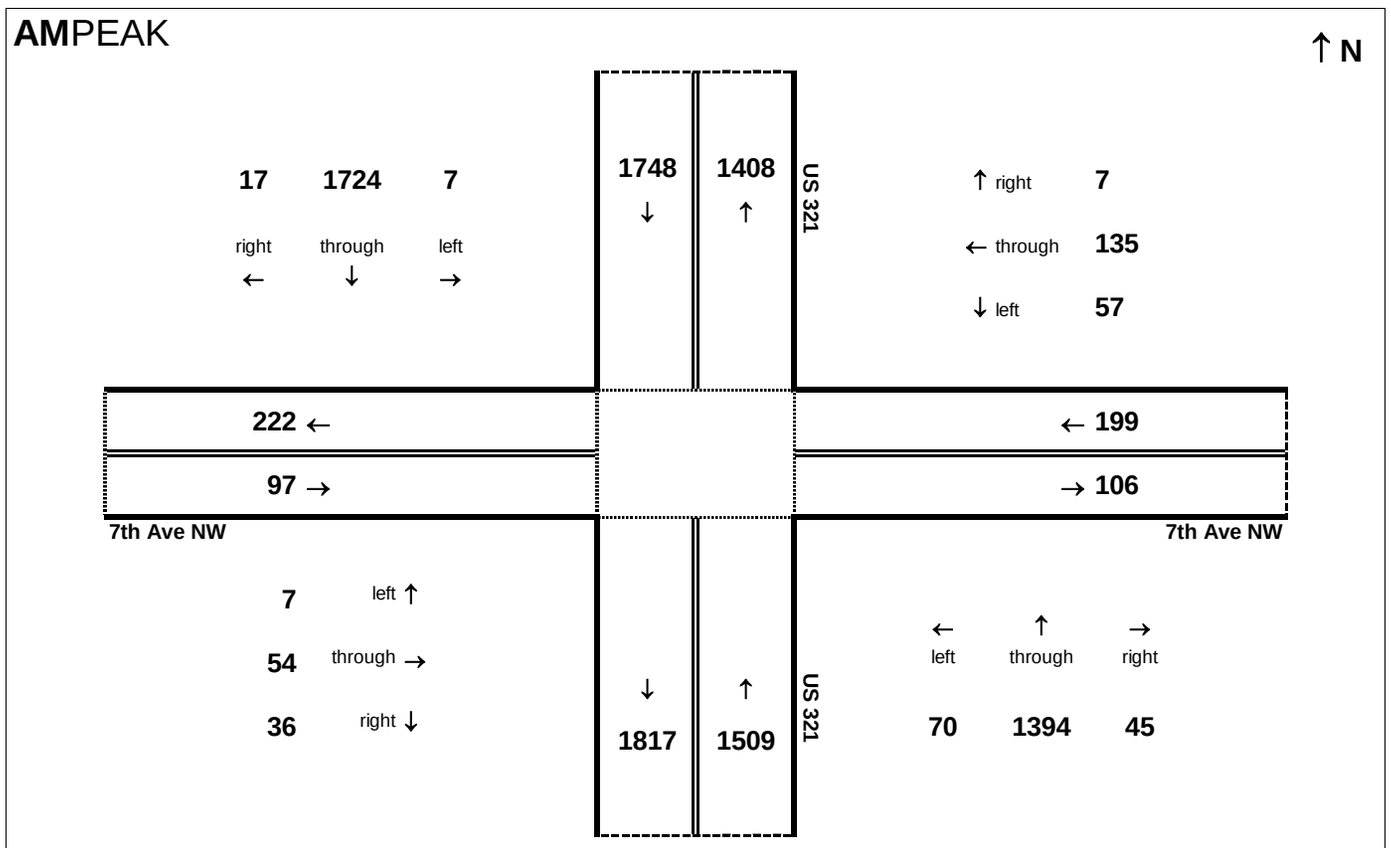



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and 7th Ave NW

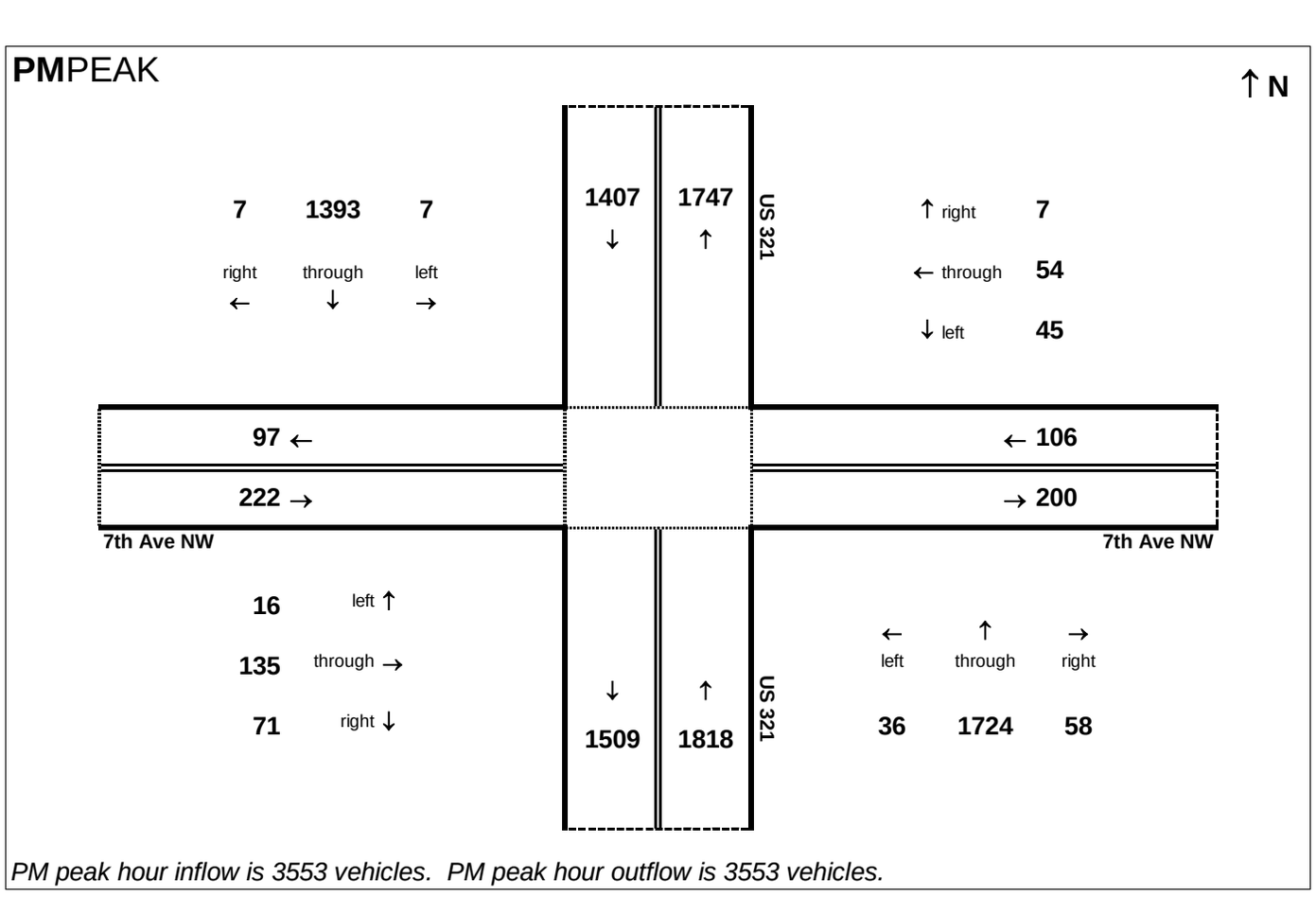
**Traffic Forecast Release Date:**
February-17

**Traffic Data Year:**
2040 No Build

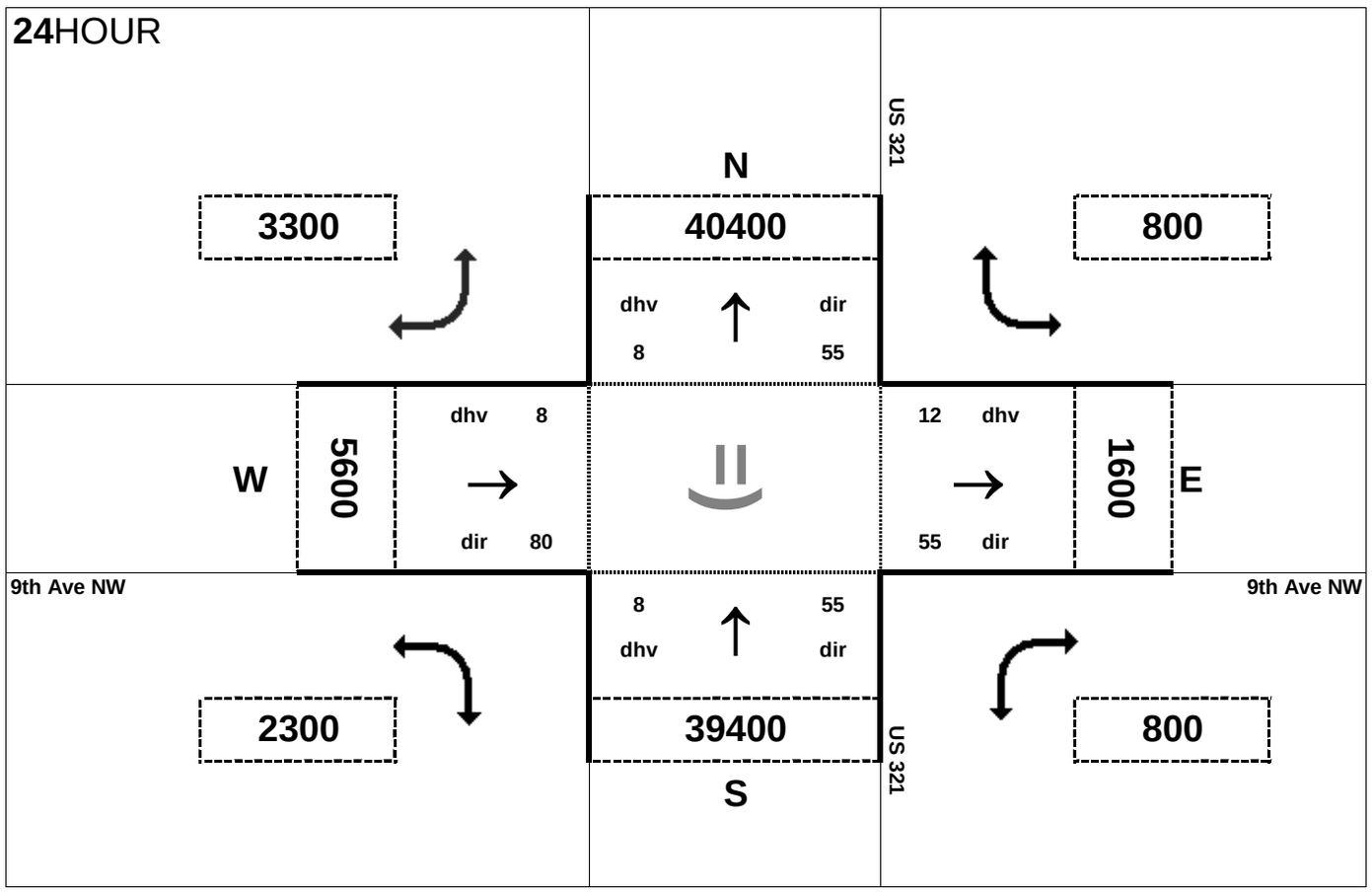
**Project:**
U-4700




*AM peak hour inflow is 3552 vehicles. AM peak hour outflow is 3552 vehicles.*




*PM peak hour inflow is 3553 vehicles. PM peak hour outflow is 3553 vehicles.*

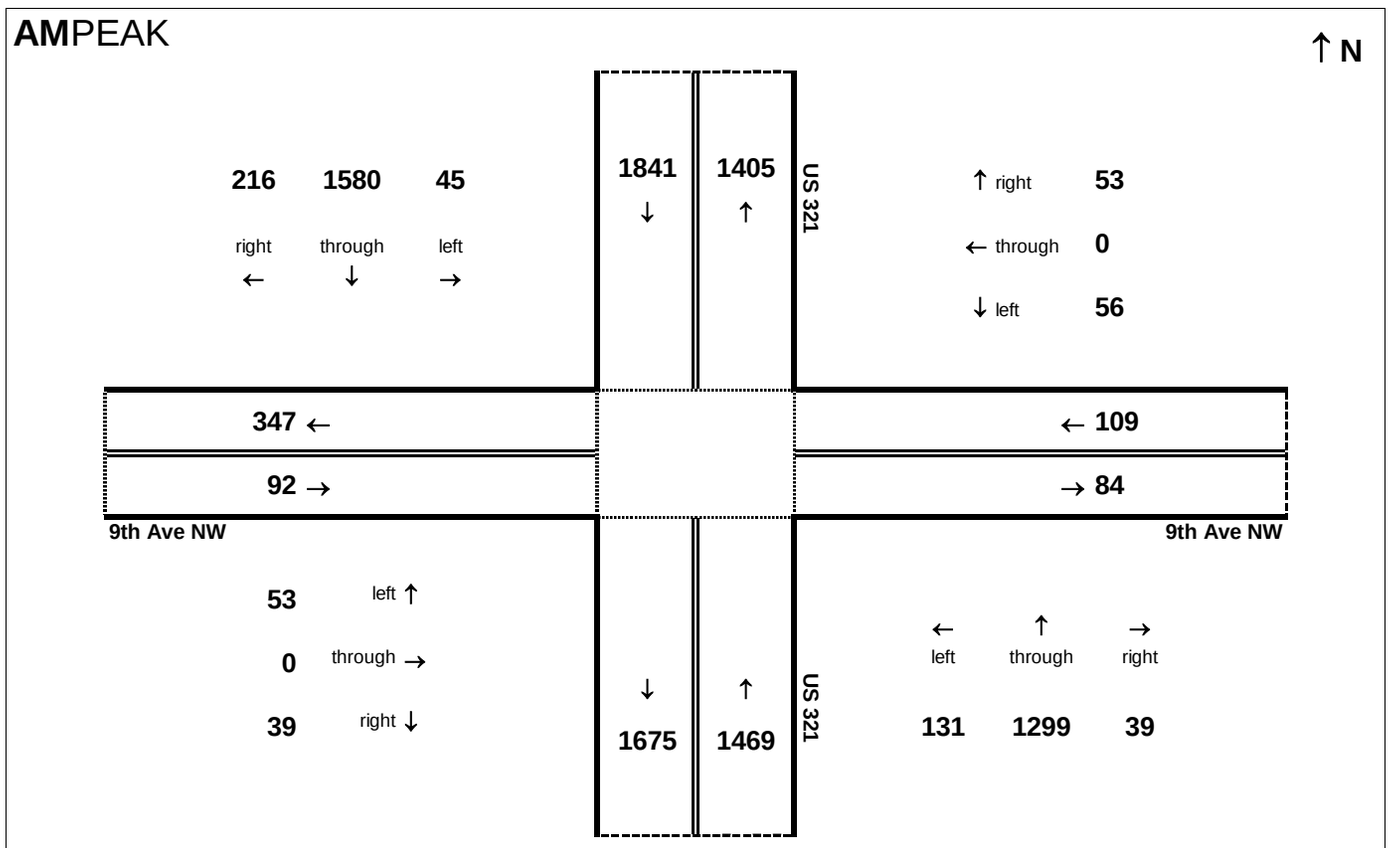



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and 9th Ave NW

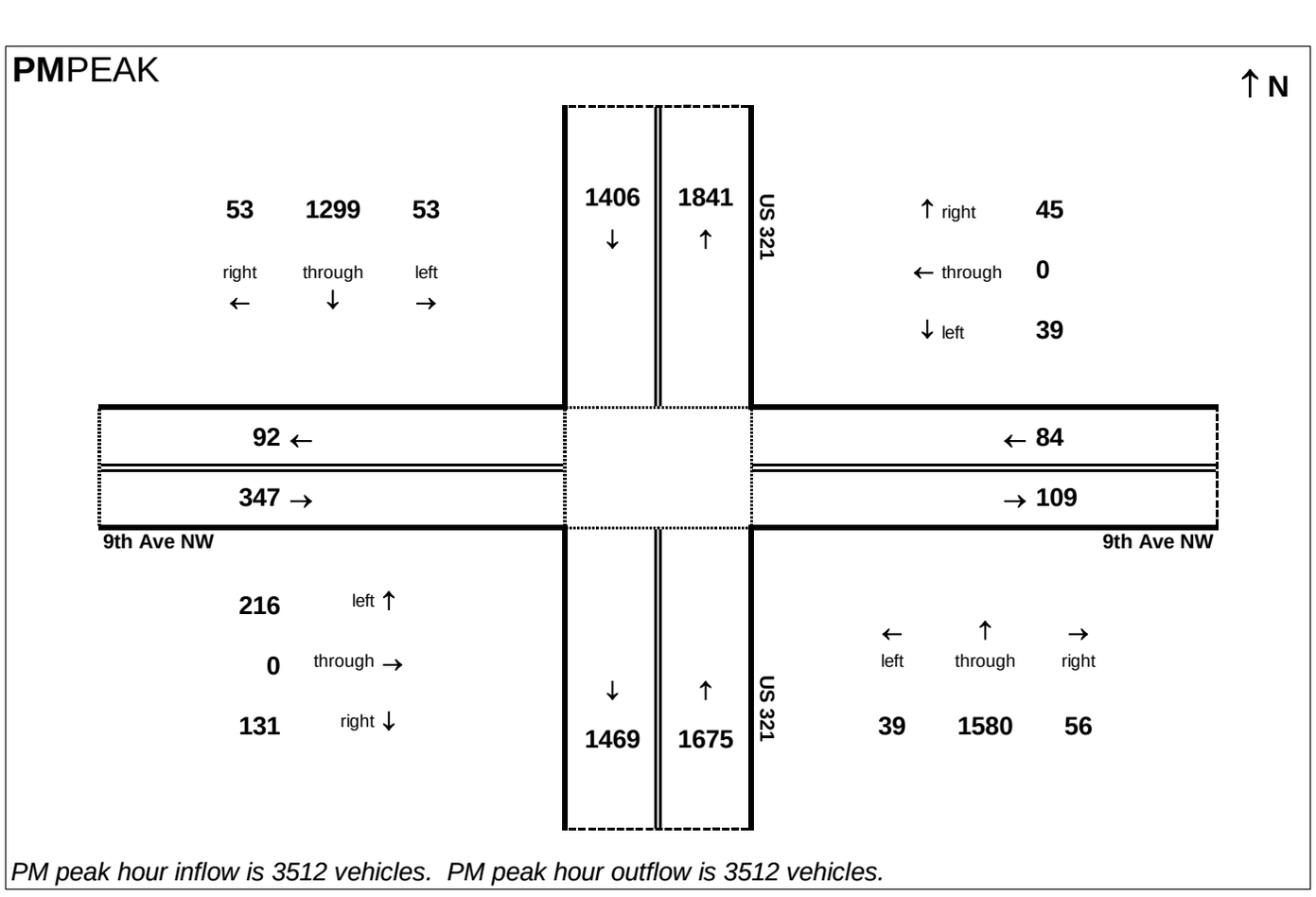
**Traffic Forecast Release Date:**
February-17

**Traffic Data Year:**
2040 No Build

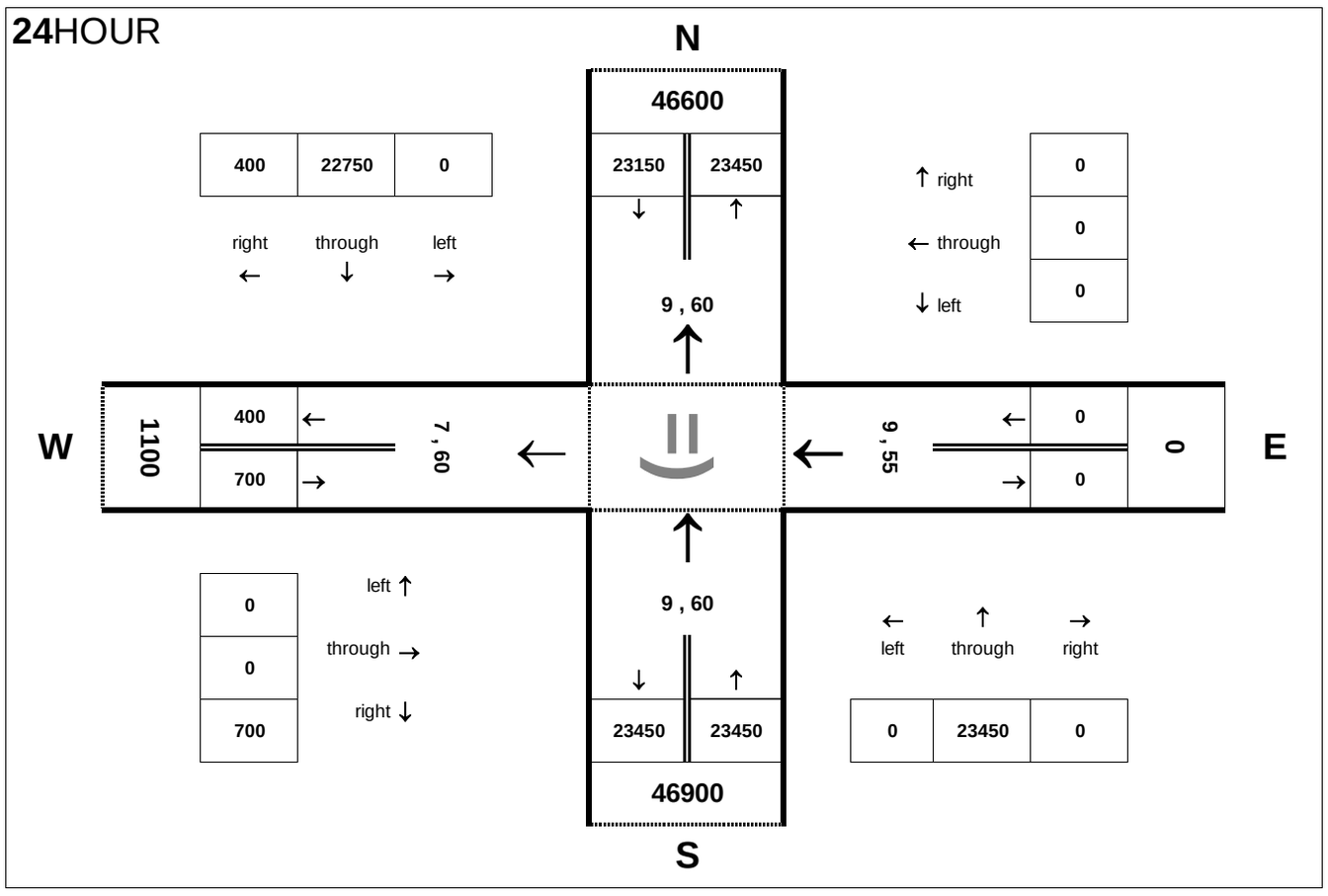
**Project:**
U-4700




*AM peak hour inflow is 3512 vehicles. AM peak hour outflow is 3512 vehicles.*




*PM peak hour inflow is 3512 vehicles. PM peak hour outflow is 3512 vehicles.*

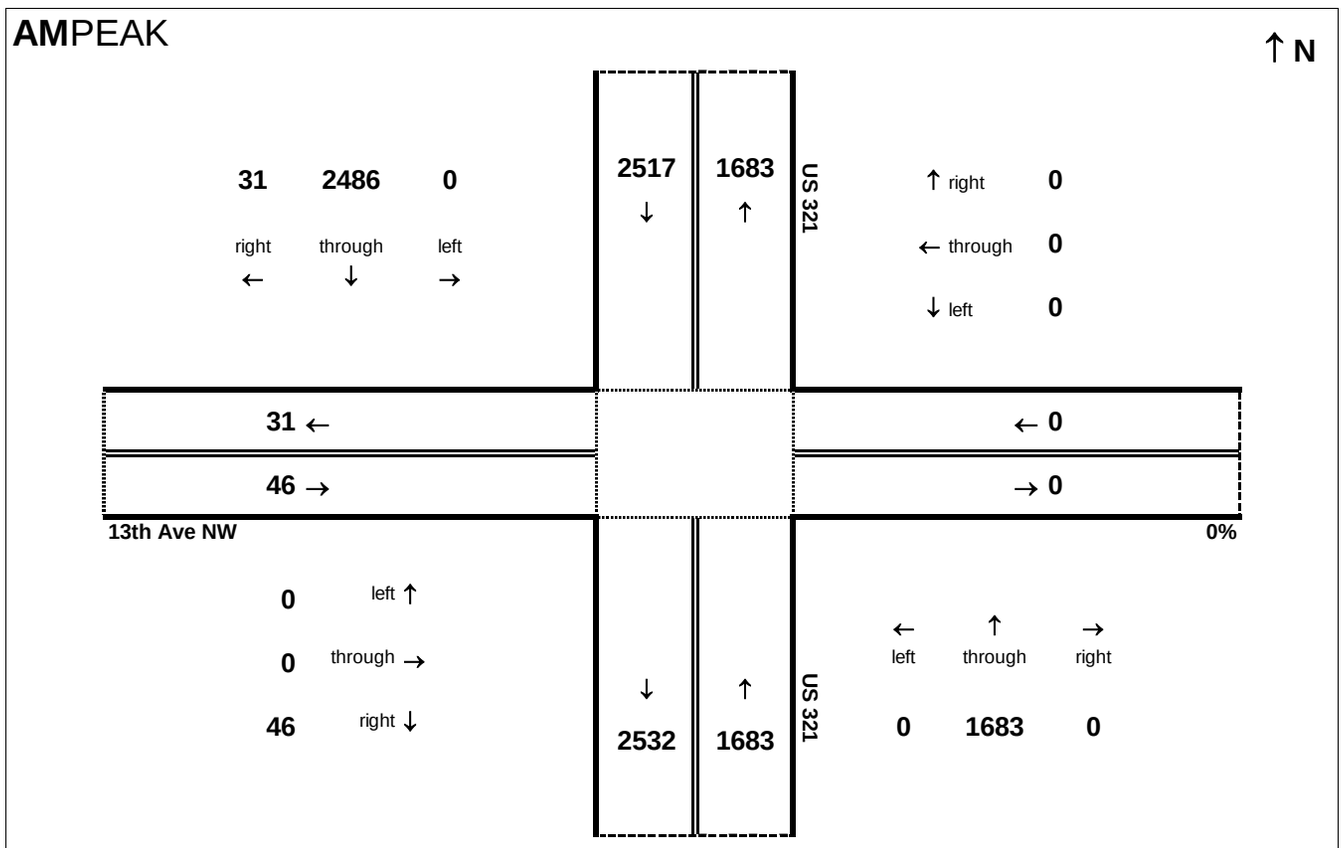



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and 13th Ave NW

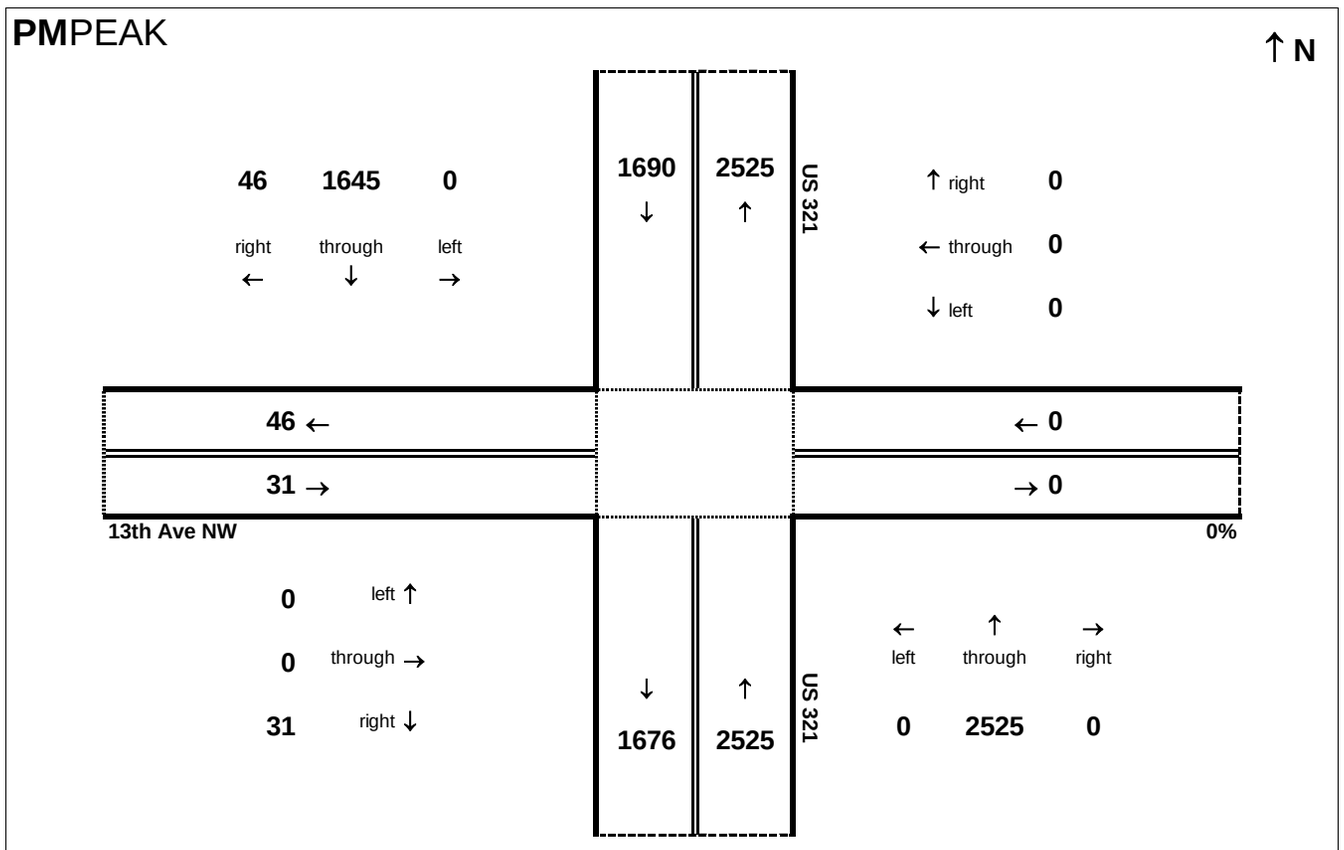
**Traffic Forecast Release Date:**
February-17

**Traffic Data Year:**
2040 No Build

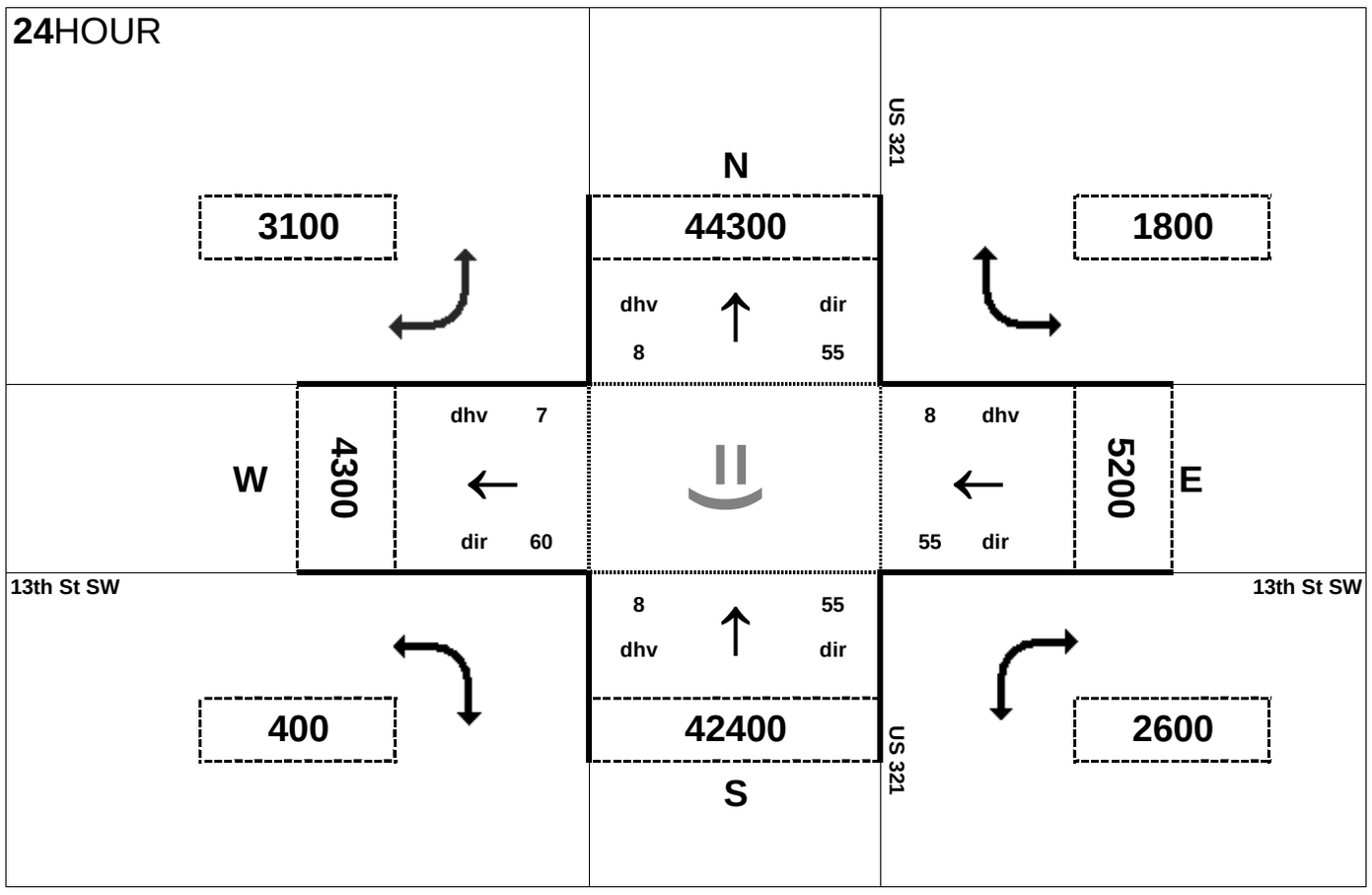
**Project:**
U-4700




*AM peak hour inflow is 4246 vehicles. AM peak hour outflow is 4246 vehicles.*




*PM peak hour inflow is 4246 vehicles. PM peak hour outflow is 4247 vehicles.*

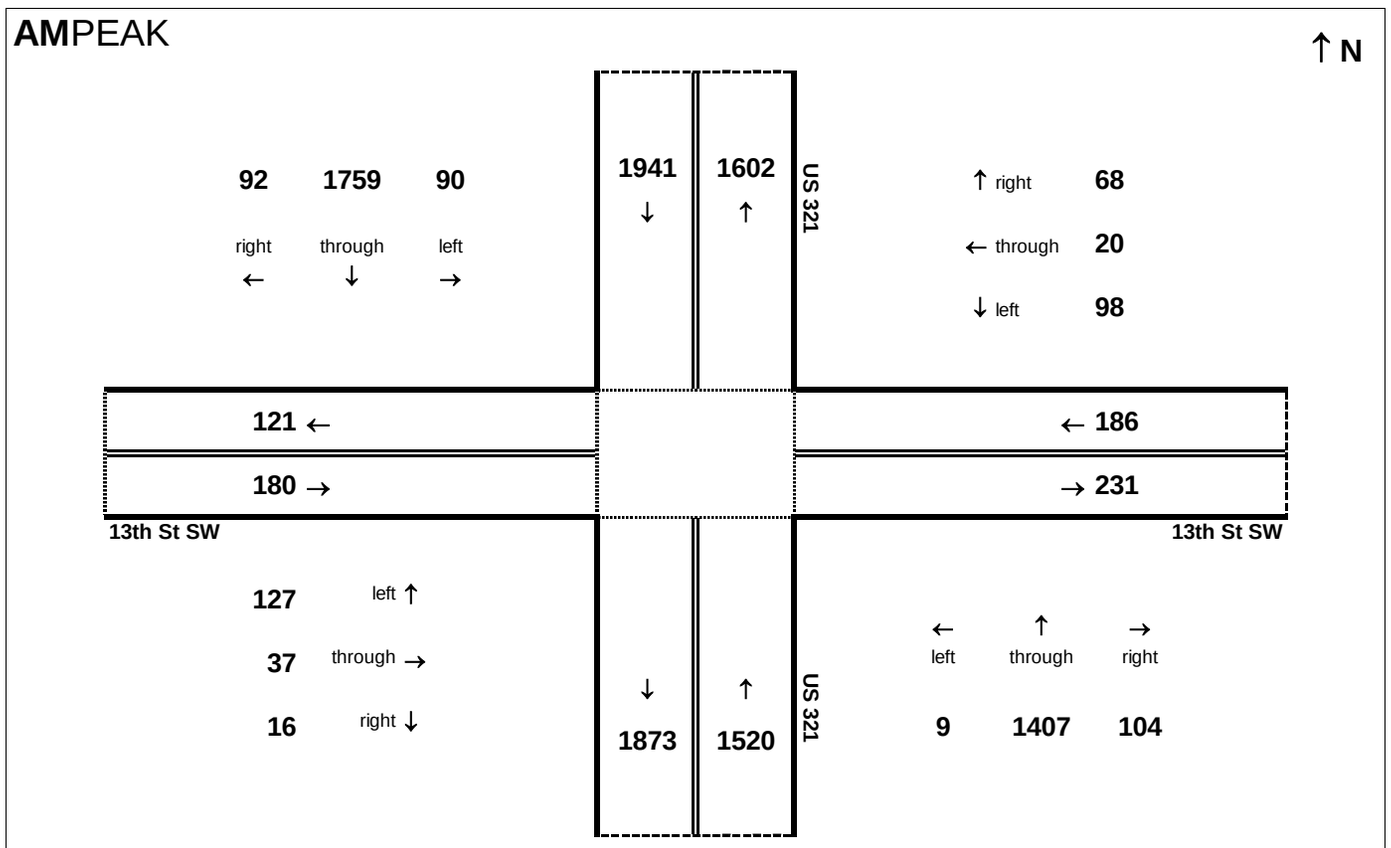



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and 13th St SW

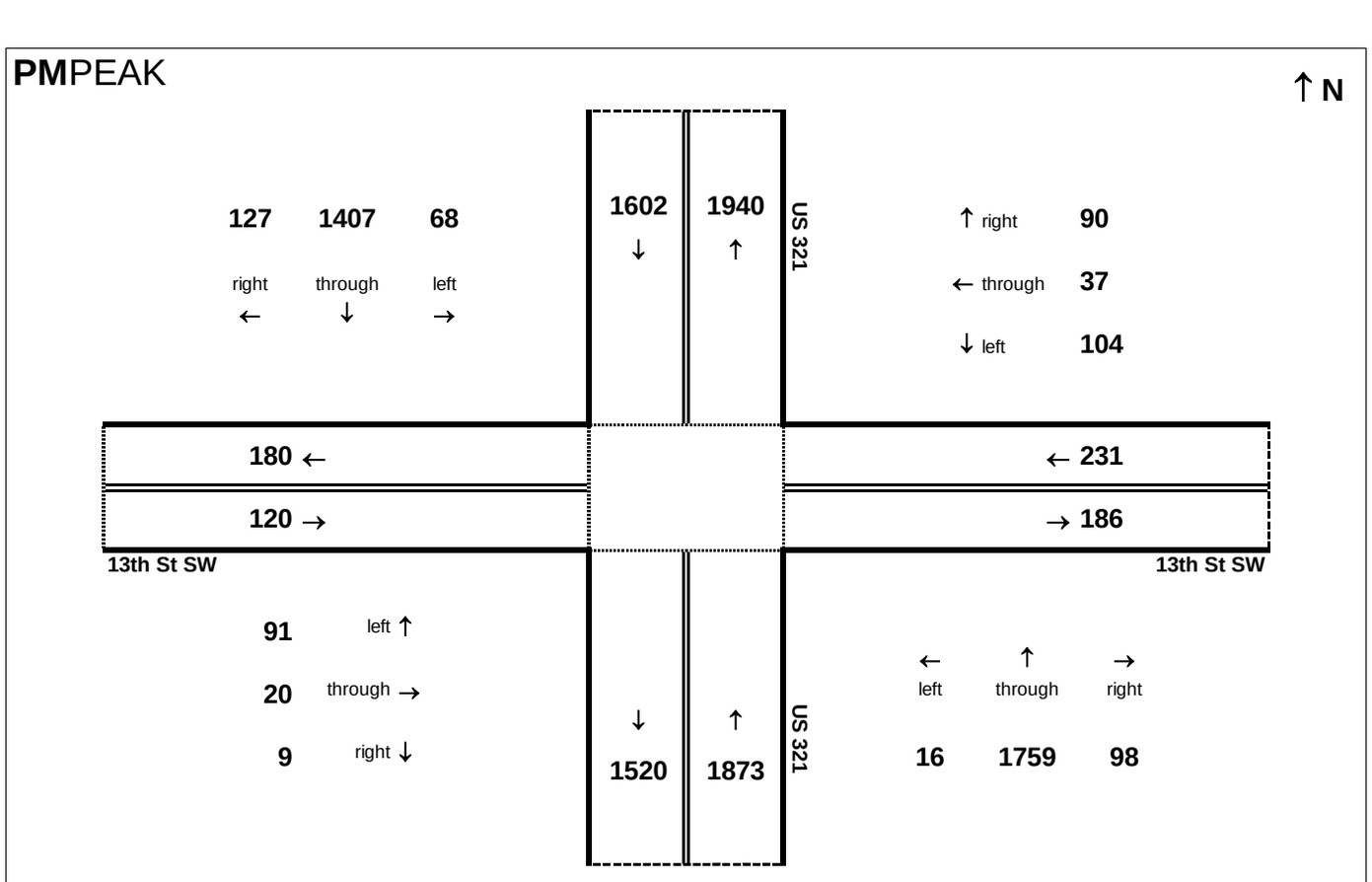
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 No Build

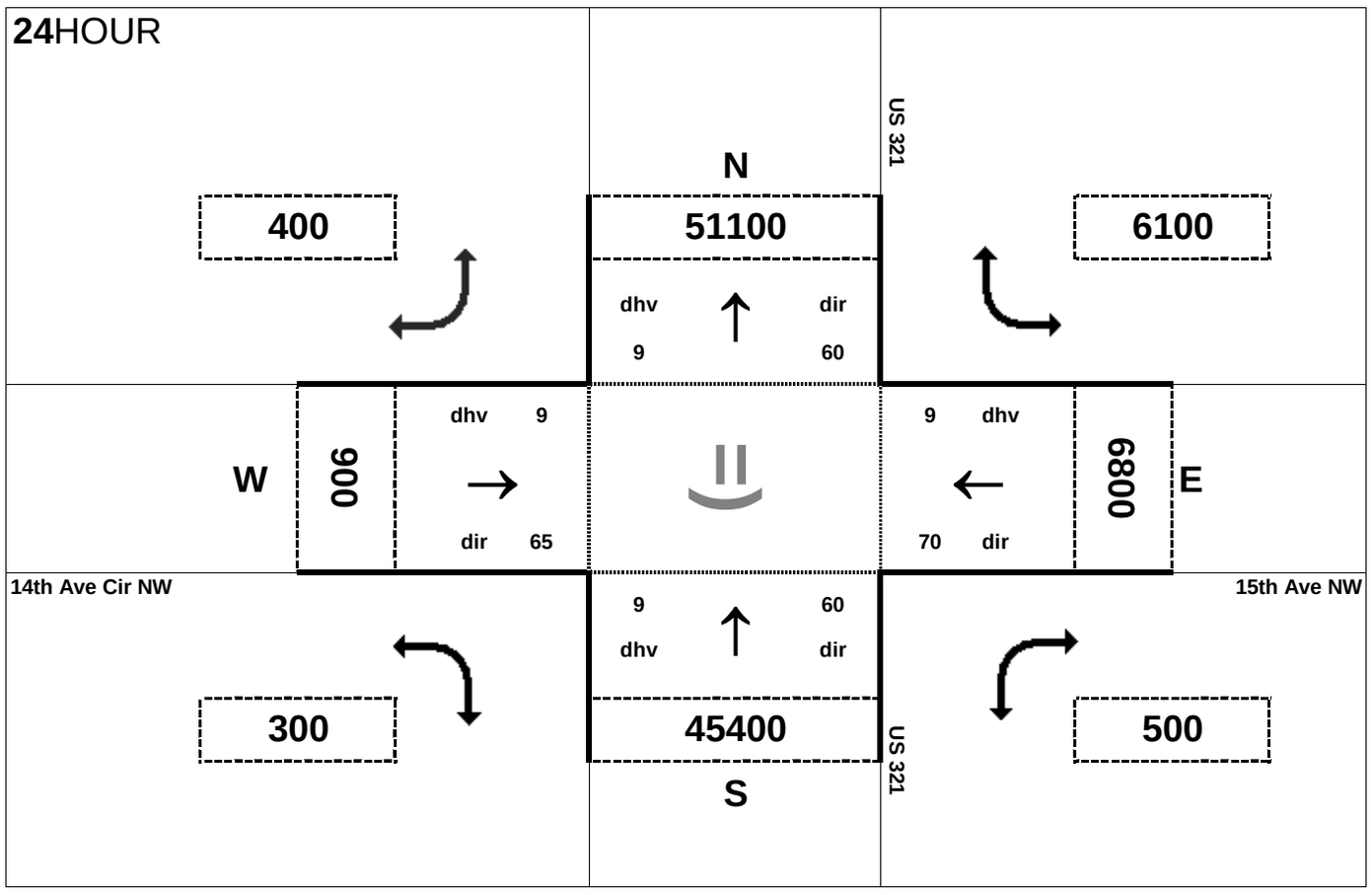
**Project:**
U-4700




*AM peak hour inflow is 3827 vehicles. AM peak hour outflow is 3827 vehicles.*




*PM peak hour inflow is 3827 vehicles. PM peak hour outflow is 3827 vehicles.*

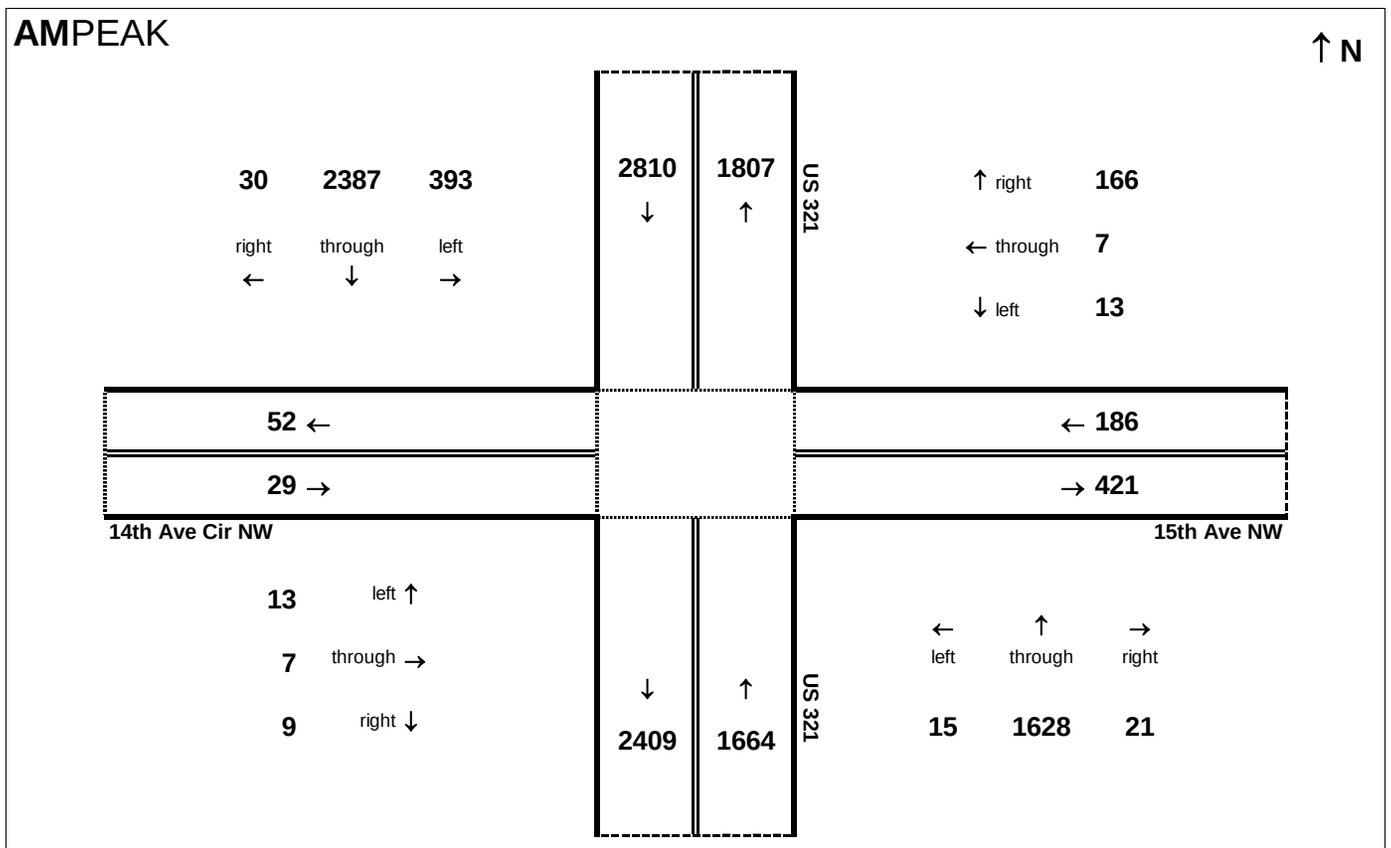



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and 15th Ave NW / 14th Ave Cir NW

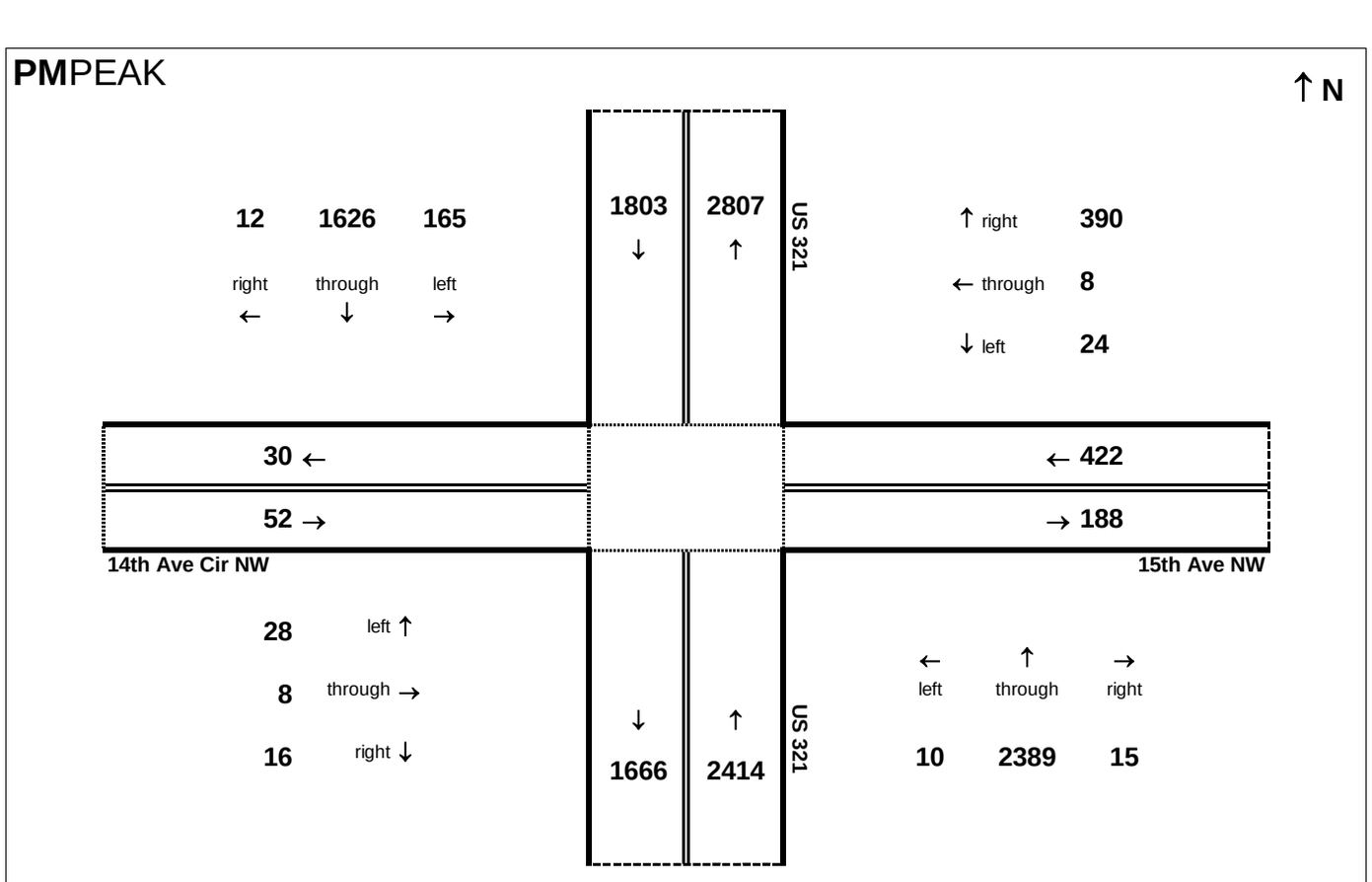
**Traffic Forecast Release Date:**
February-17

**Traffic Data Year:**
2040 No Build

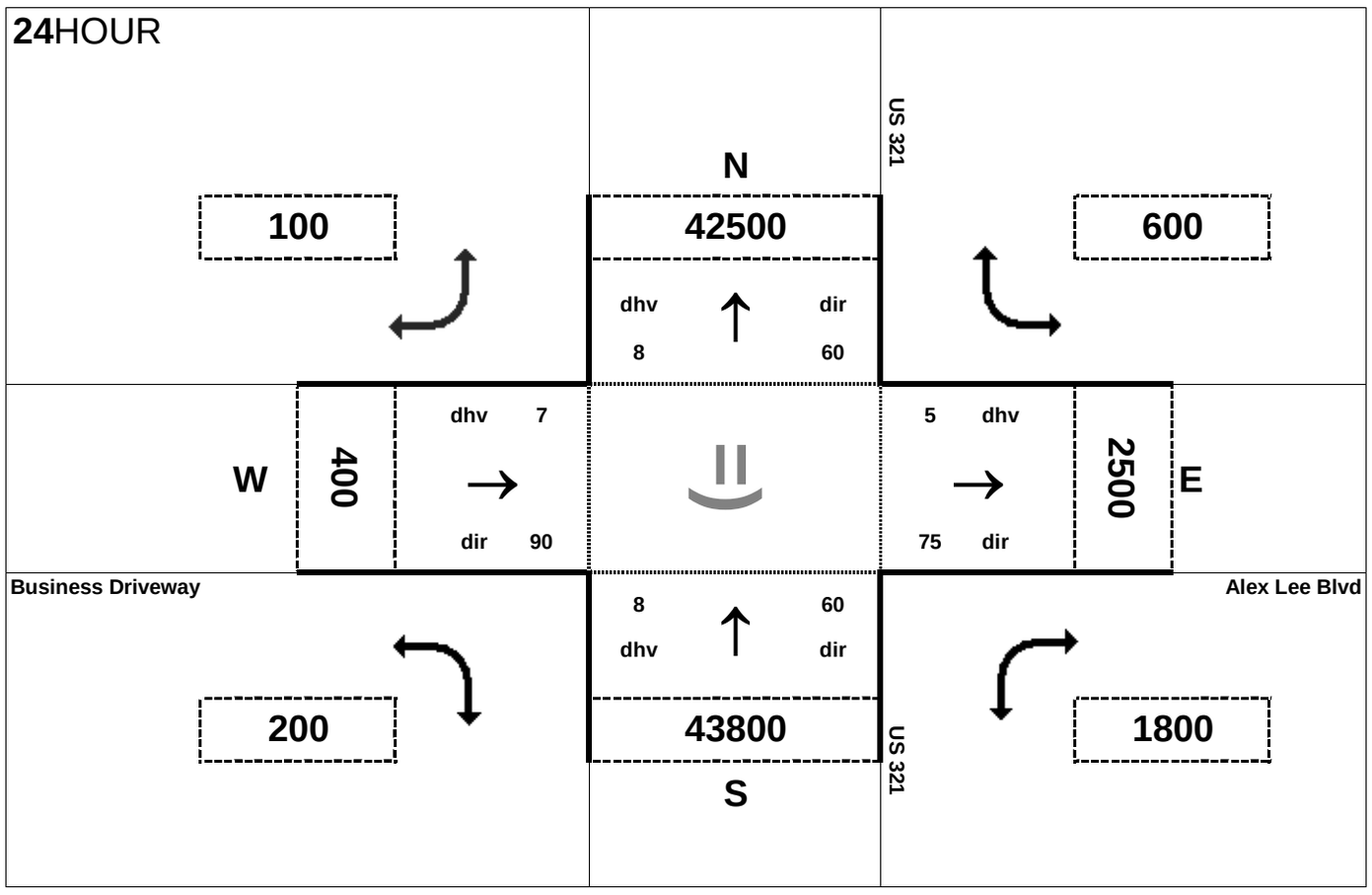
**Project:**
U-4700




*AM peak hour inflow is 4689 vehicles. AM peak hour outflow is 4689 vehicles.*




*PM peak hour inflow is 4690 vehicles. PM peak hour outflow is 4689 vehicles.*

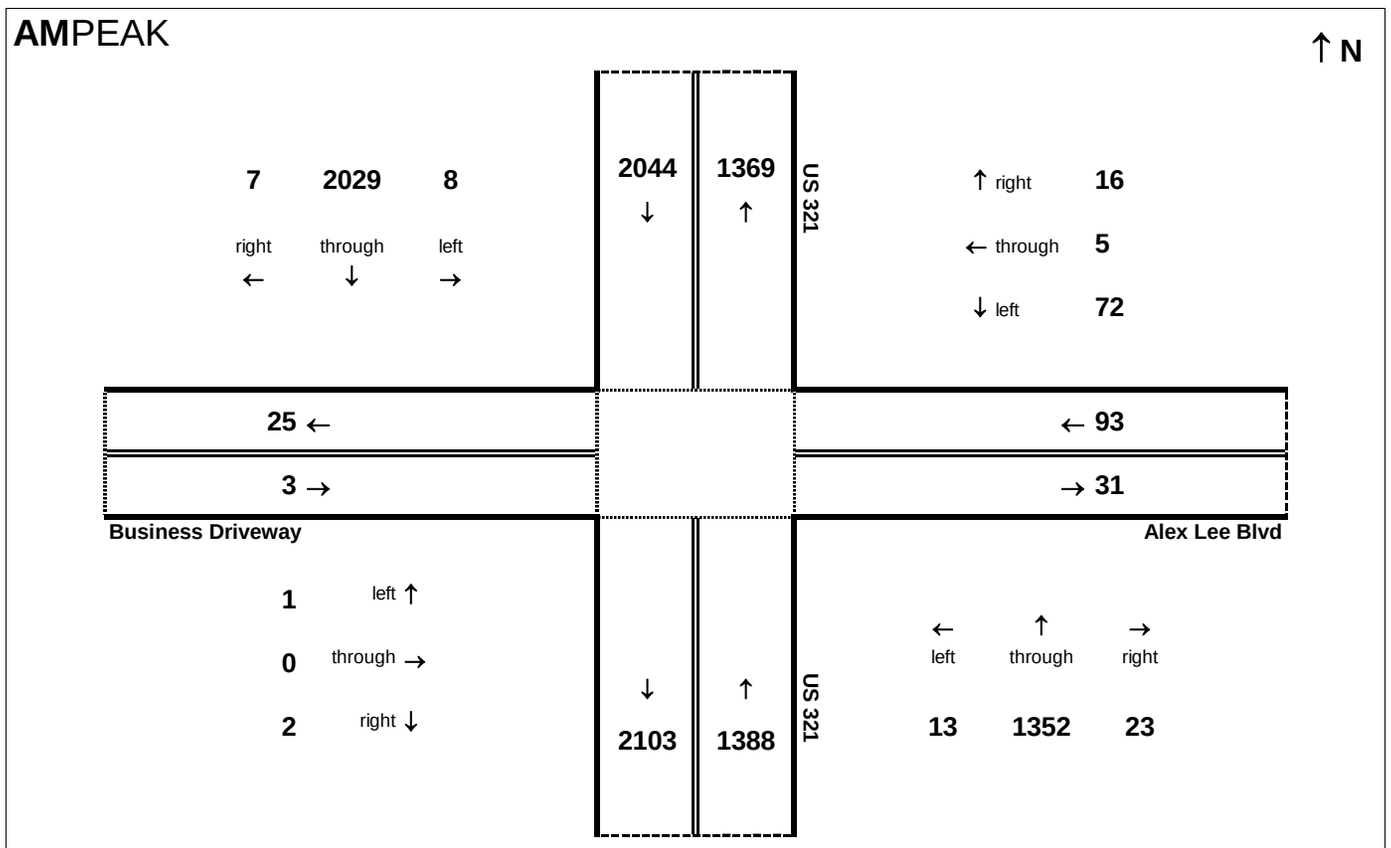



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and Alex Lee Blvd

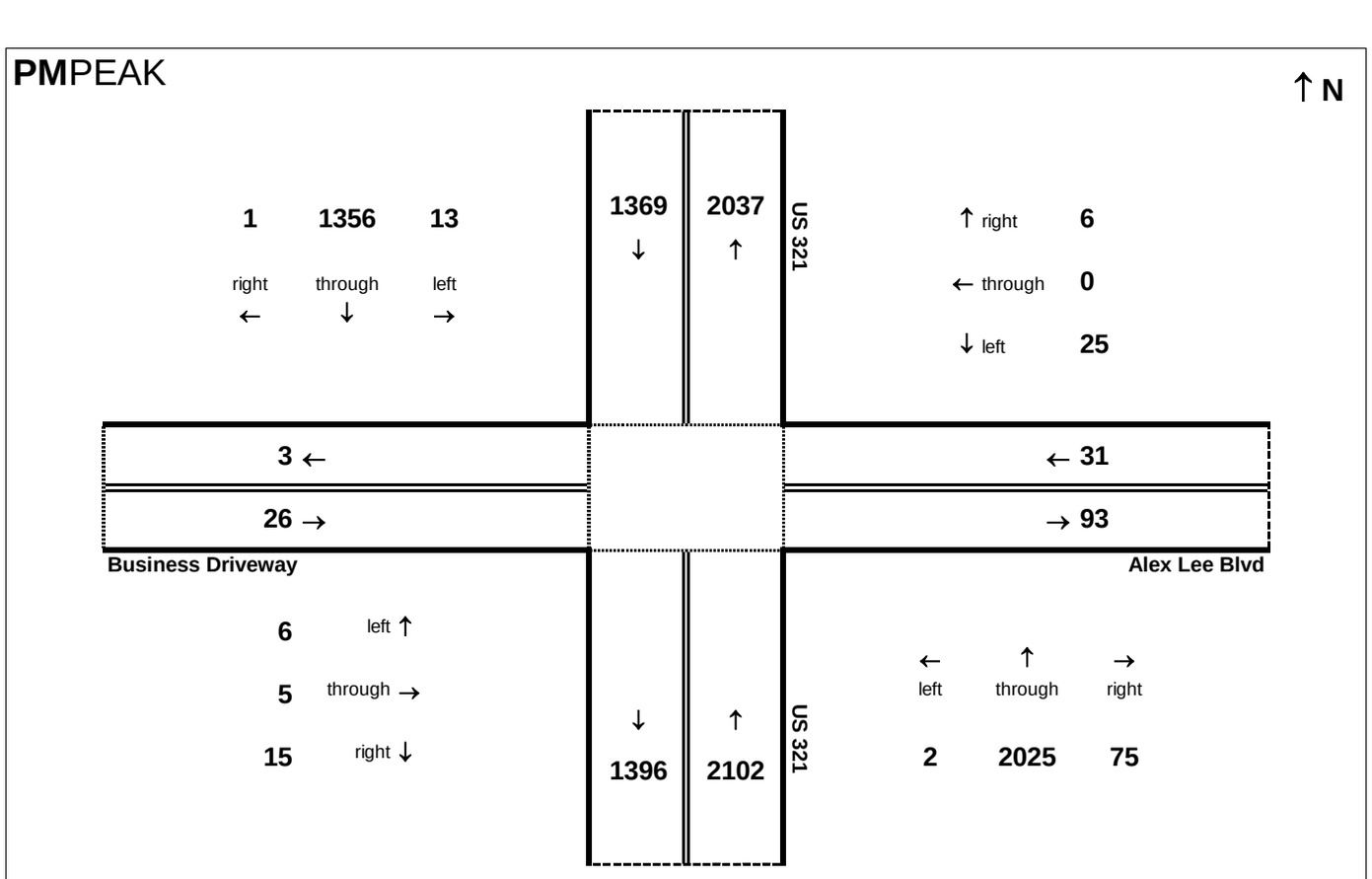
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 No Build

**Project:**
U-4700




*AM peak hour inflow is 3529 vehicles. AM peak hour outflow is 3528 vehicles.*



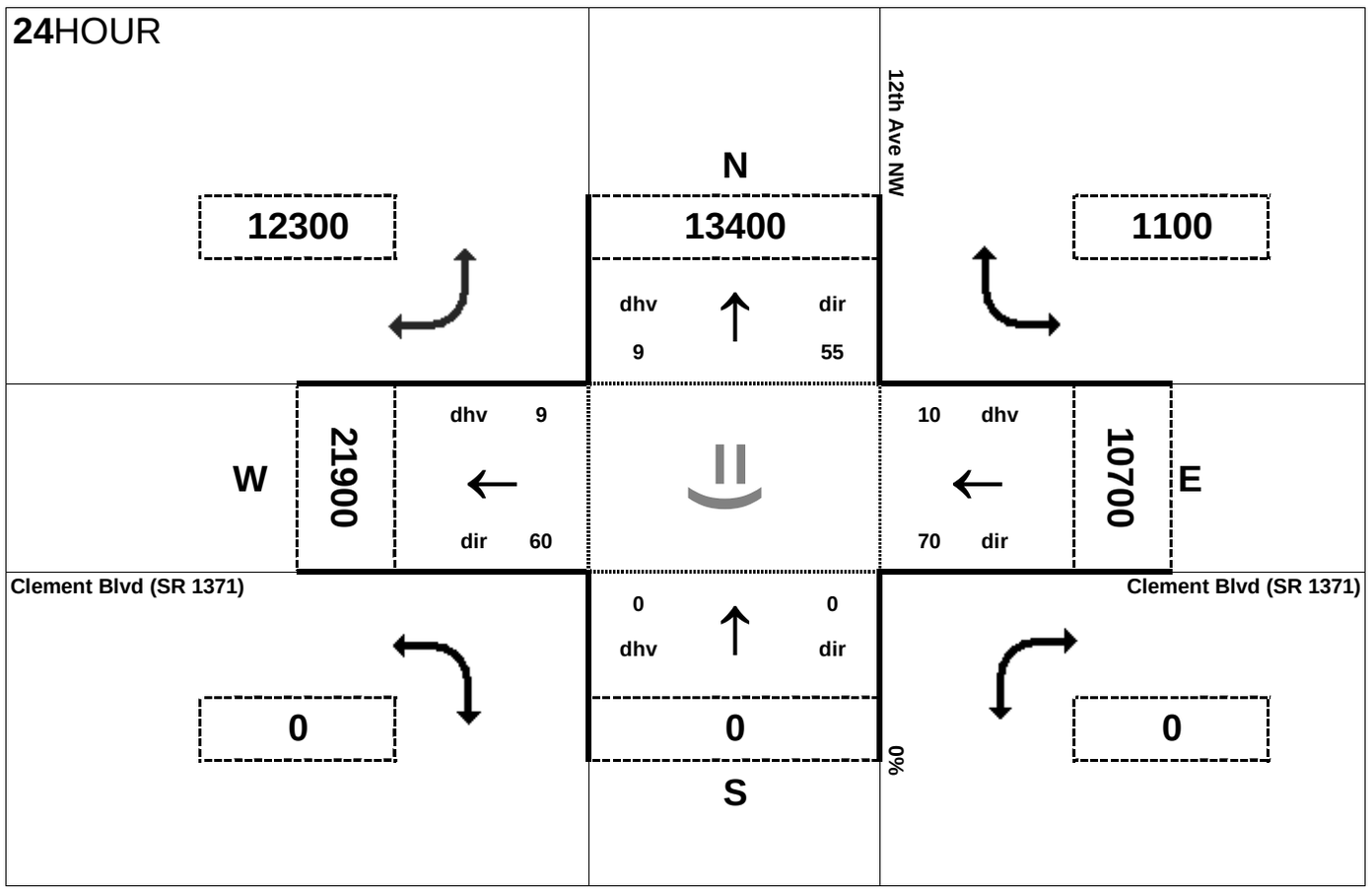

*PM peak hour inflow is 3527 vehicles. PM peak hour outflow is 3529 vehicles.*

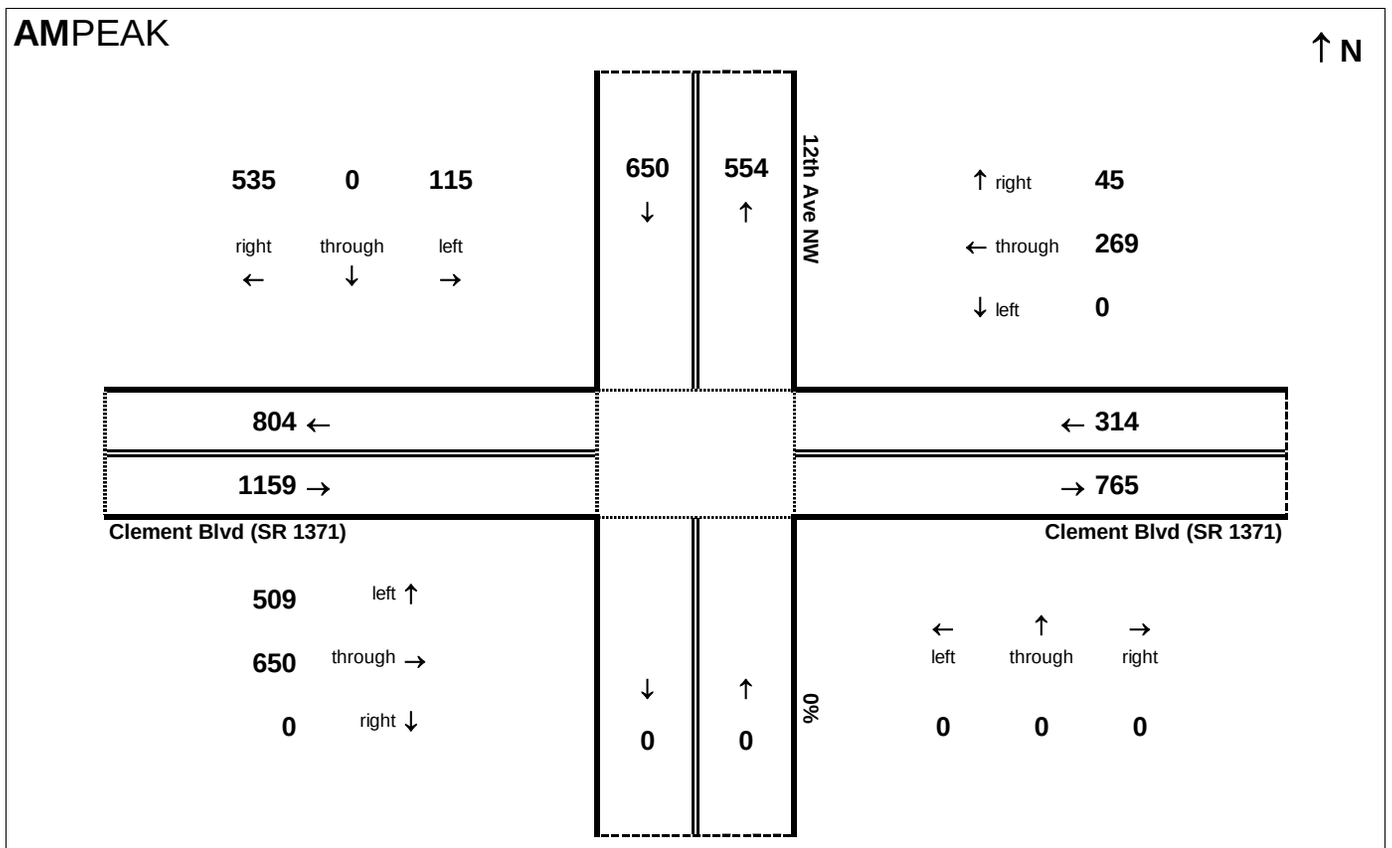
**Peak Hour Volume Breakouts Report:**
Intersection of Clement Blvd and 12th Ave NW

**Traffic Forecast Release Date:**
December-16

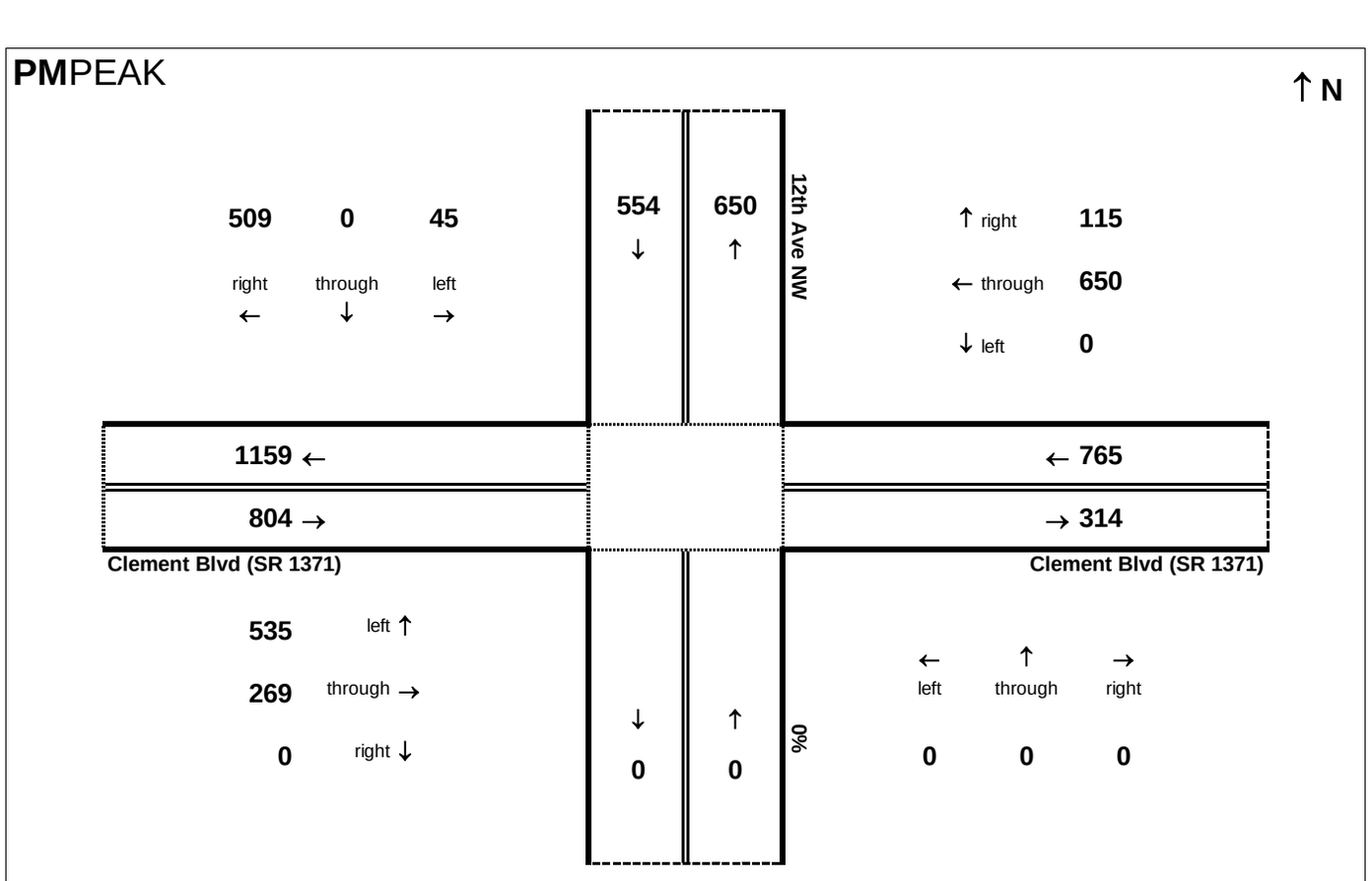
**Traffic Data Year:**
2040 No Build

**Project:**
U-4700

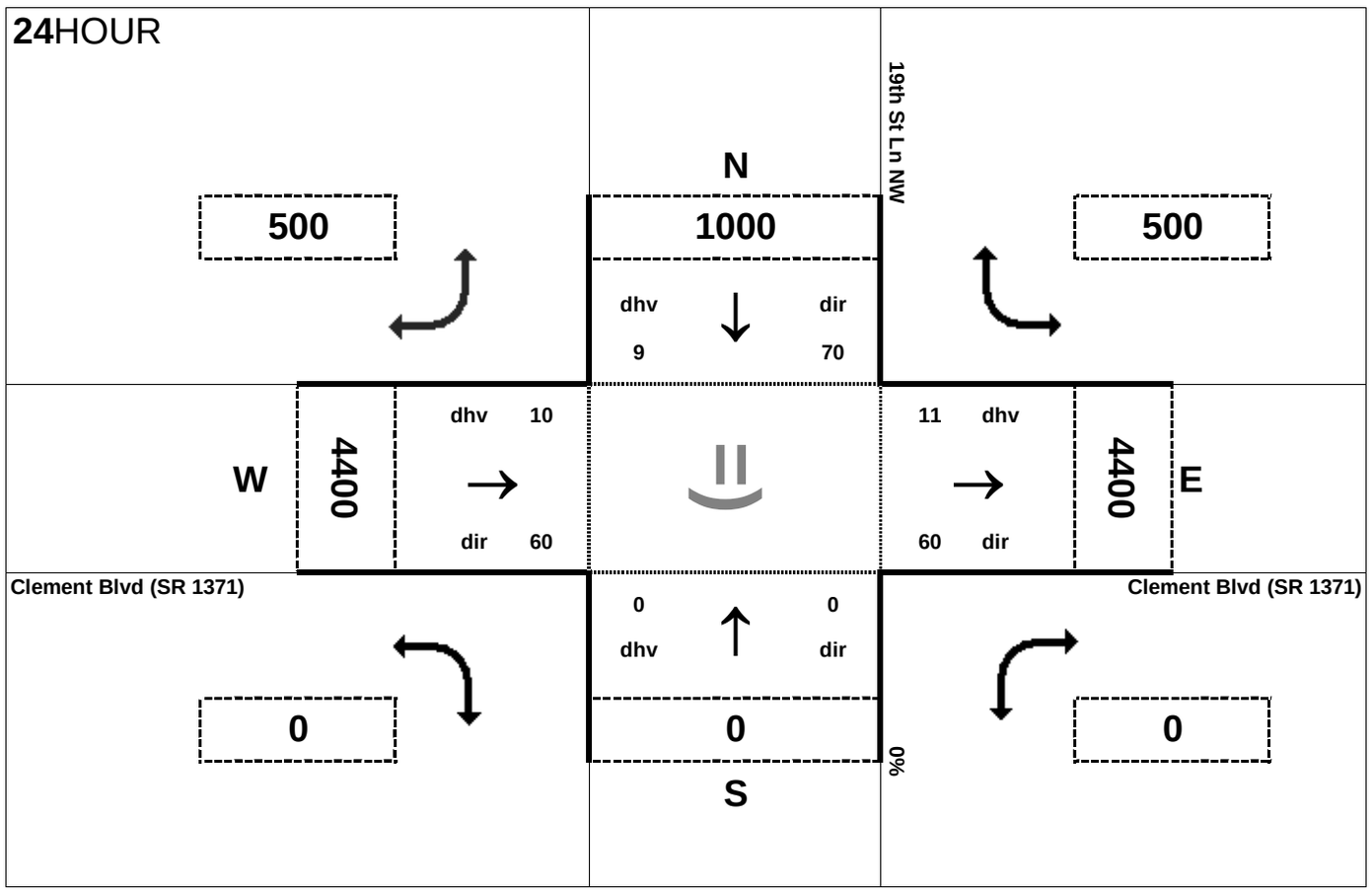



*AM peak hour inflow is 2124 vehicles. AM peak hour outflow is 2124 vehicles.*




*PM peak hour inflow is 2124 vehicles. PM peak hour outflow is 2124 vehicles.*

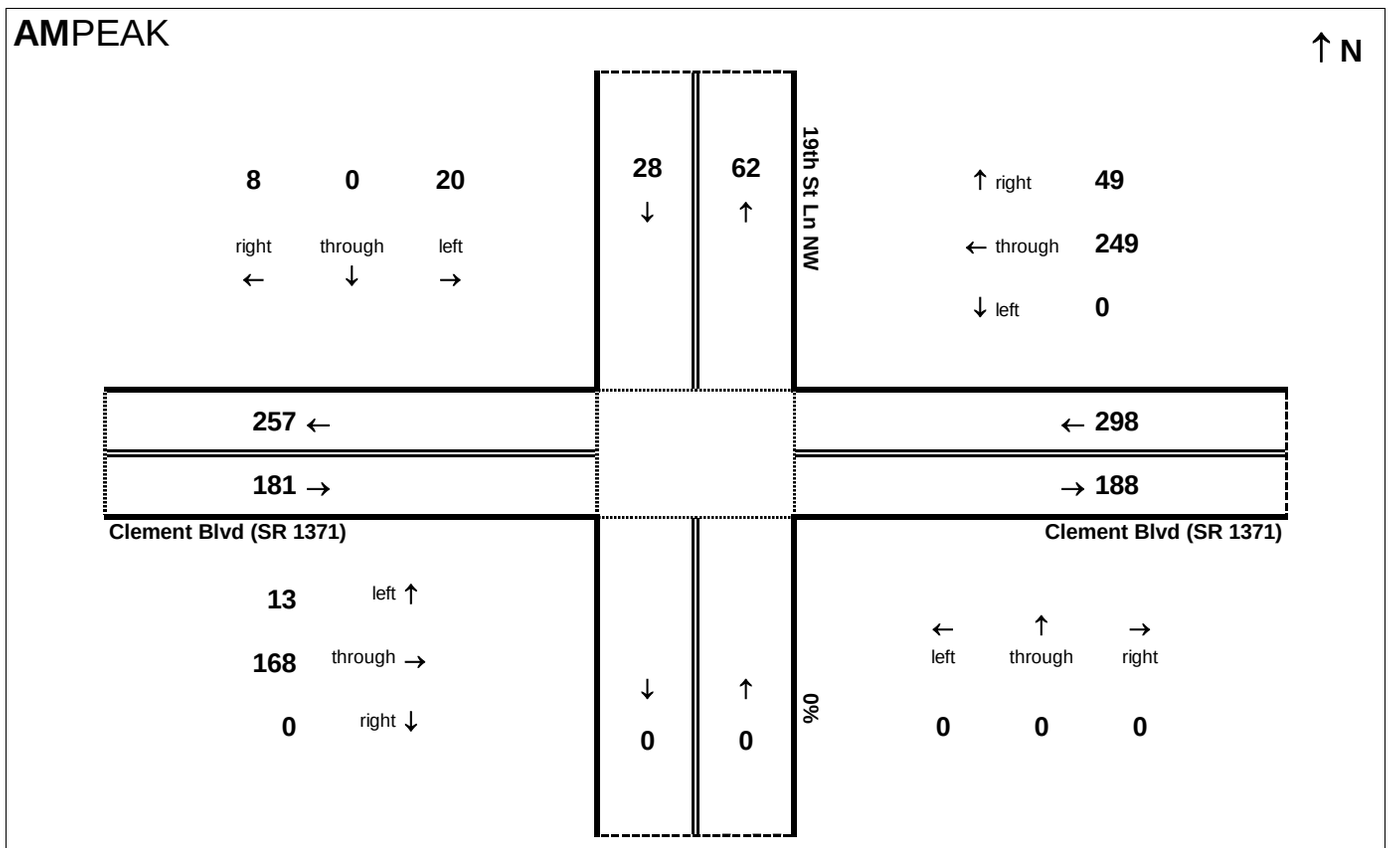



**Peak Hour Volume Breakouts Report:**
Intersection of Clement Blvd and 19th St Ln NW

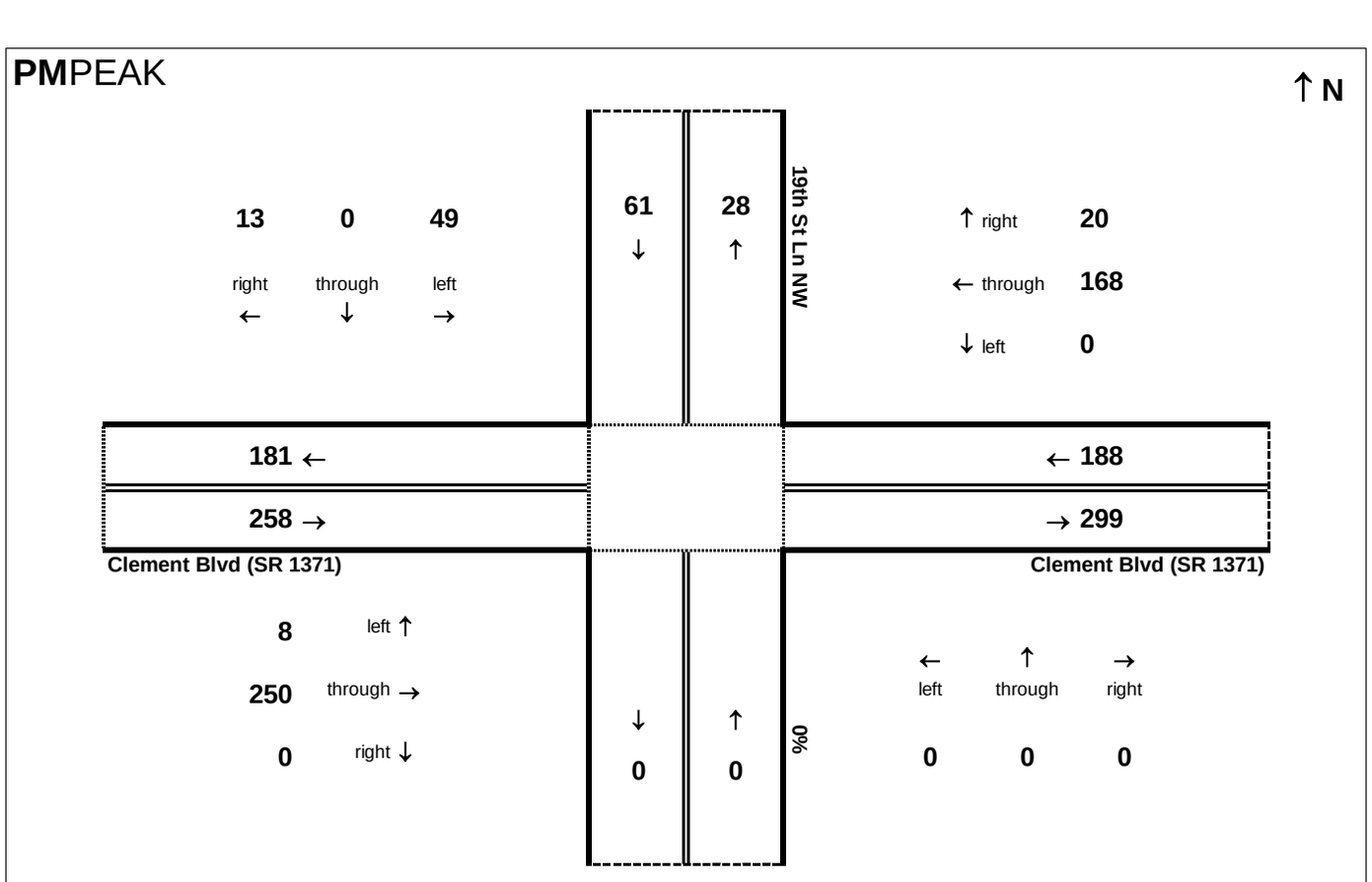
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 No Build

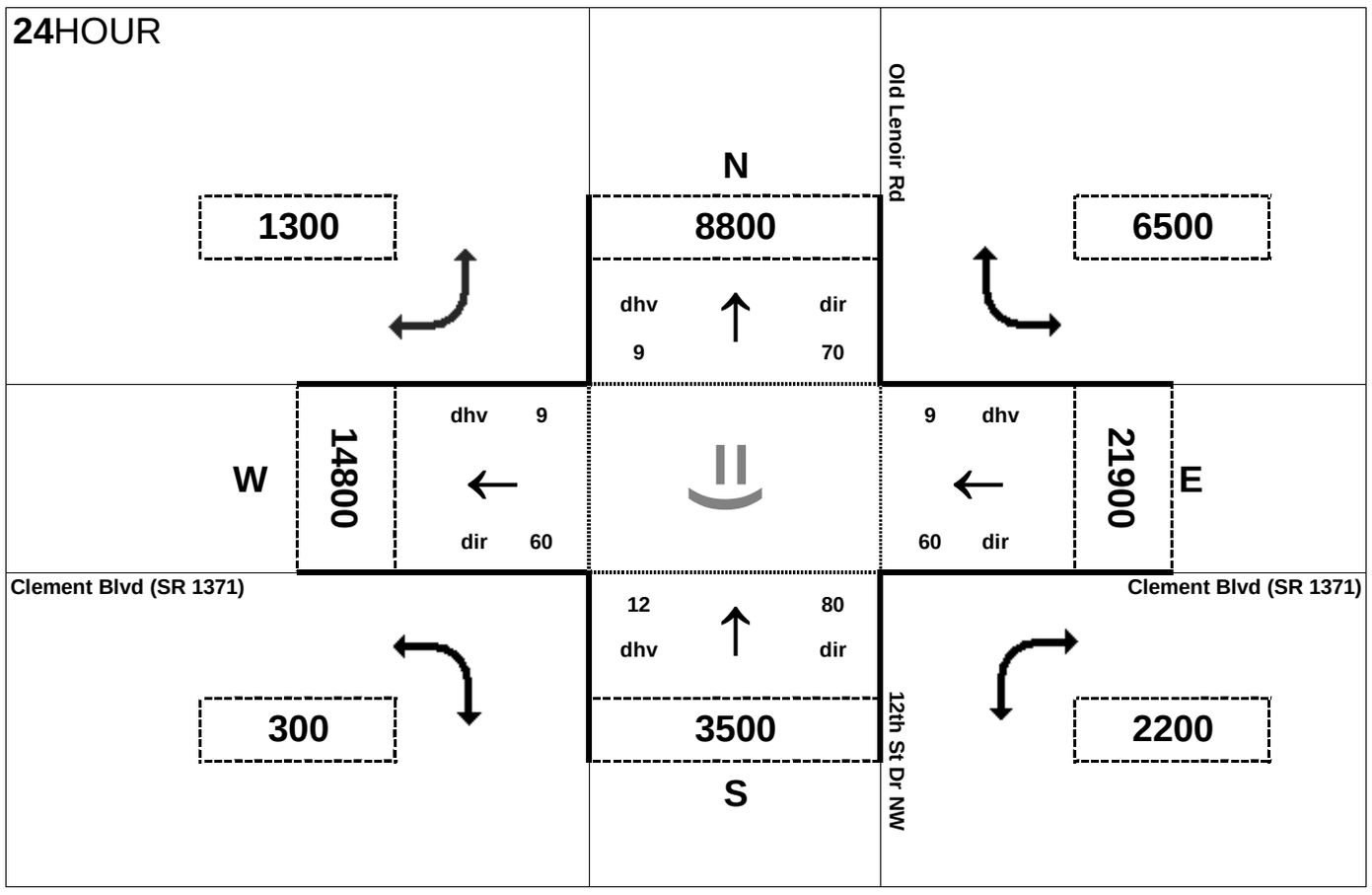
**Project:**
U-4700




*AM peak hour inflow is 507 vehicles. AM peak hour outflow is 507 vehicles.*




*PM peak hour inflow is 506 vehicles. PM peak hour outflow is 507 vehicles.*

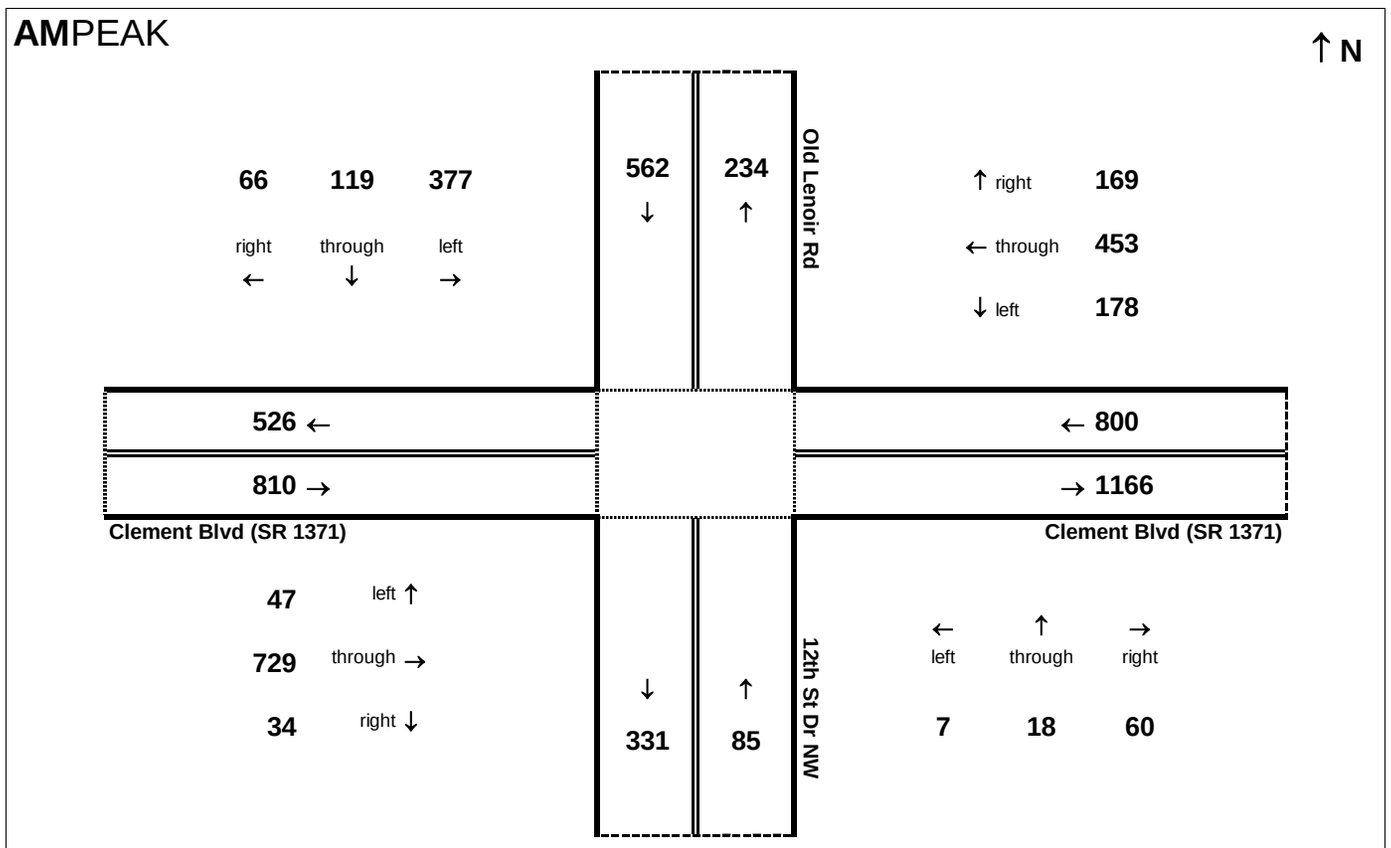



**Peak Hour Volume Breakouts Report:**
Intersection of Clement Blvd and Old Lenoir Rd

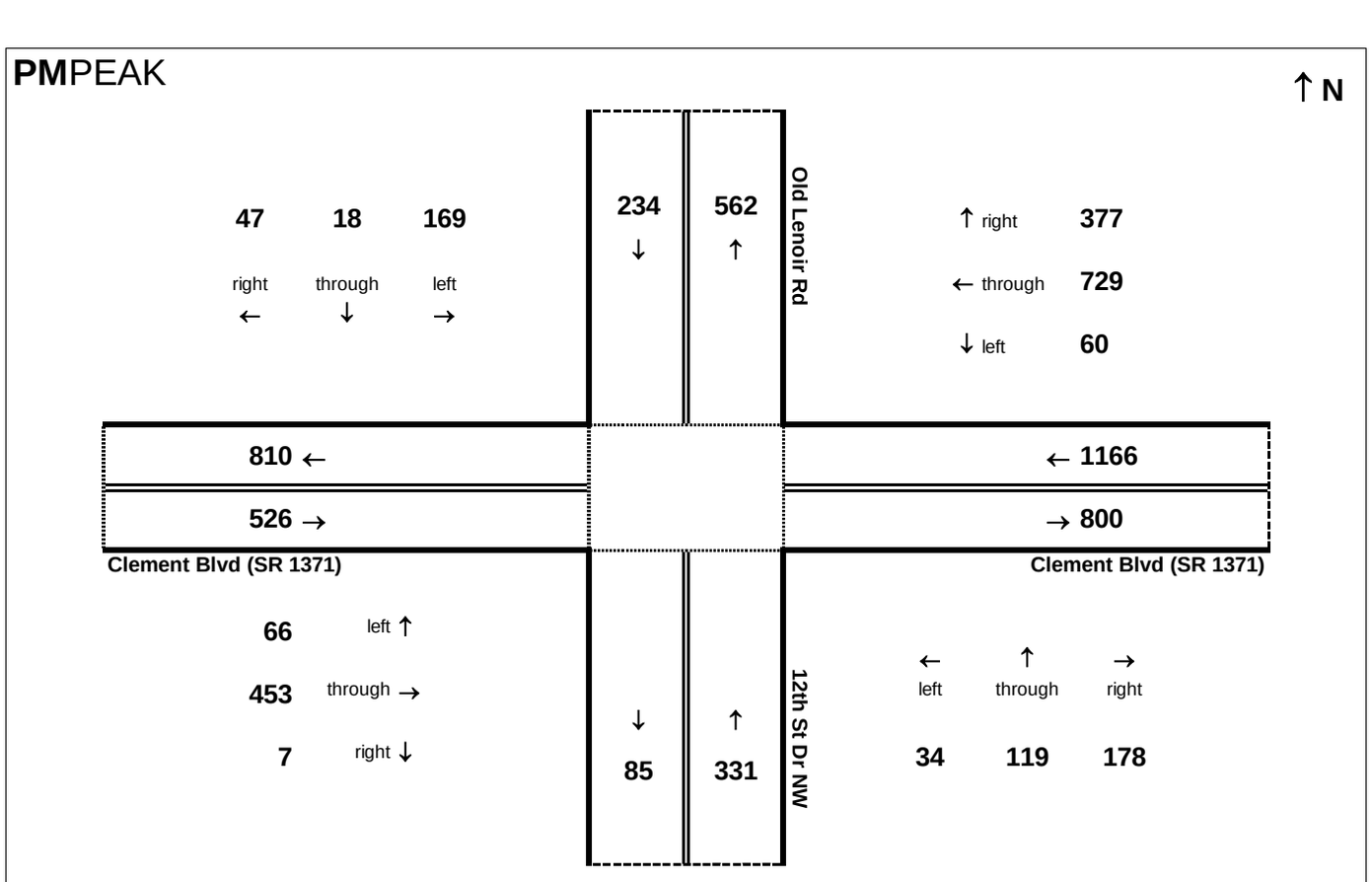
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 No Build

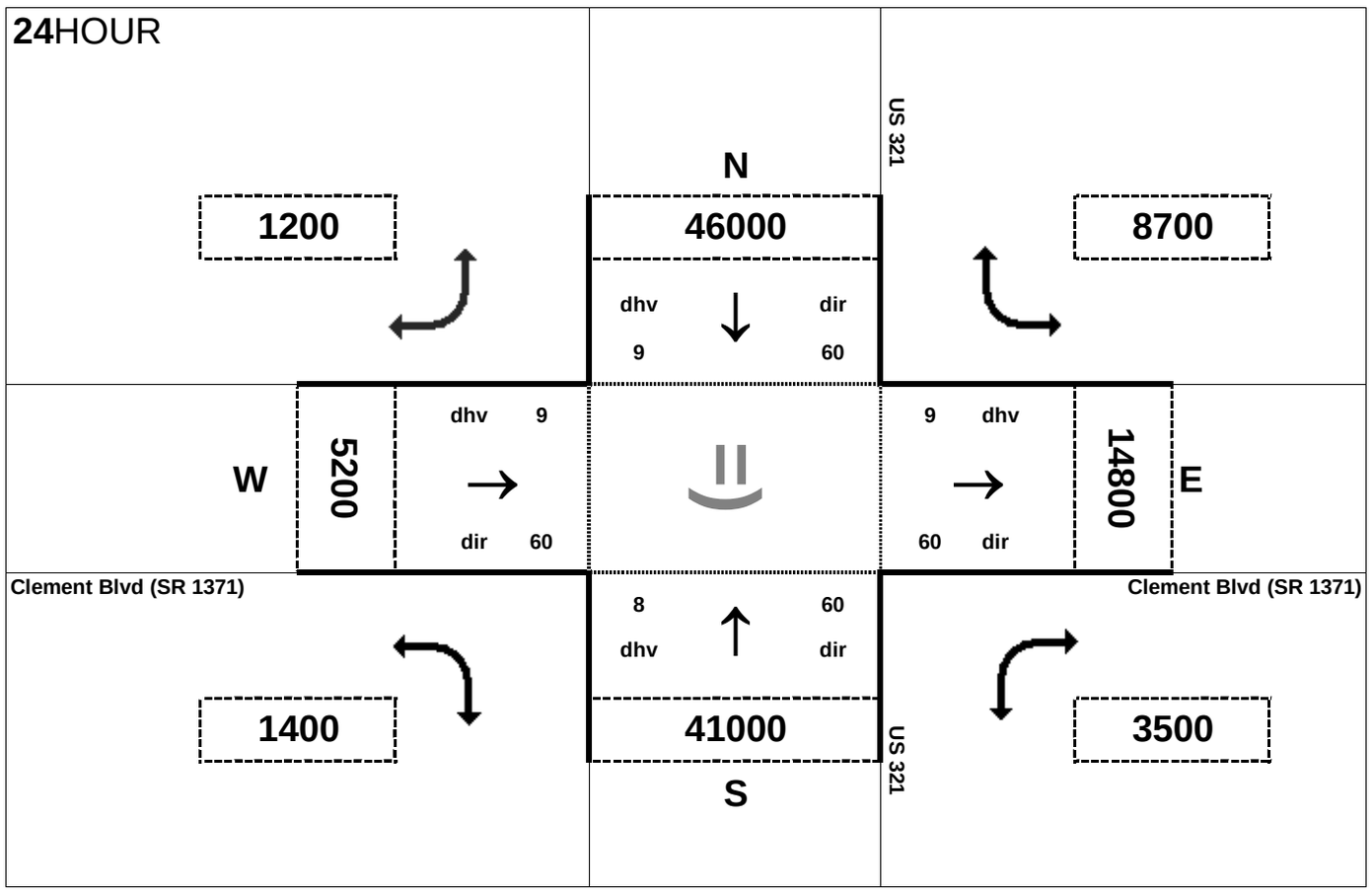
**Project:**
U-4700




*AM peak hour inflow is 2258 vehicles. AM peak hour outflow is 2256 vehicles.*




*PM peak hour inflow is 2256 vehicles. PM peak hour outflow is 2258 vehicles.*

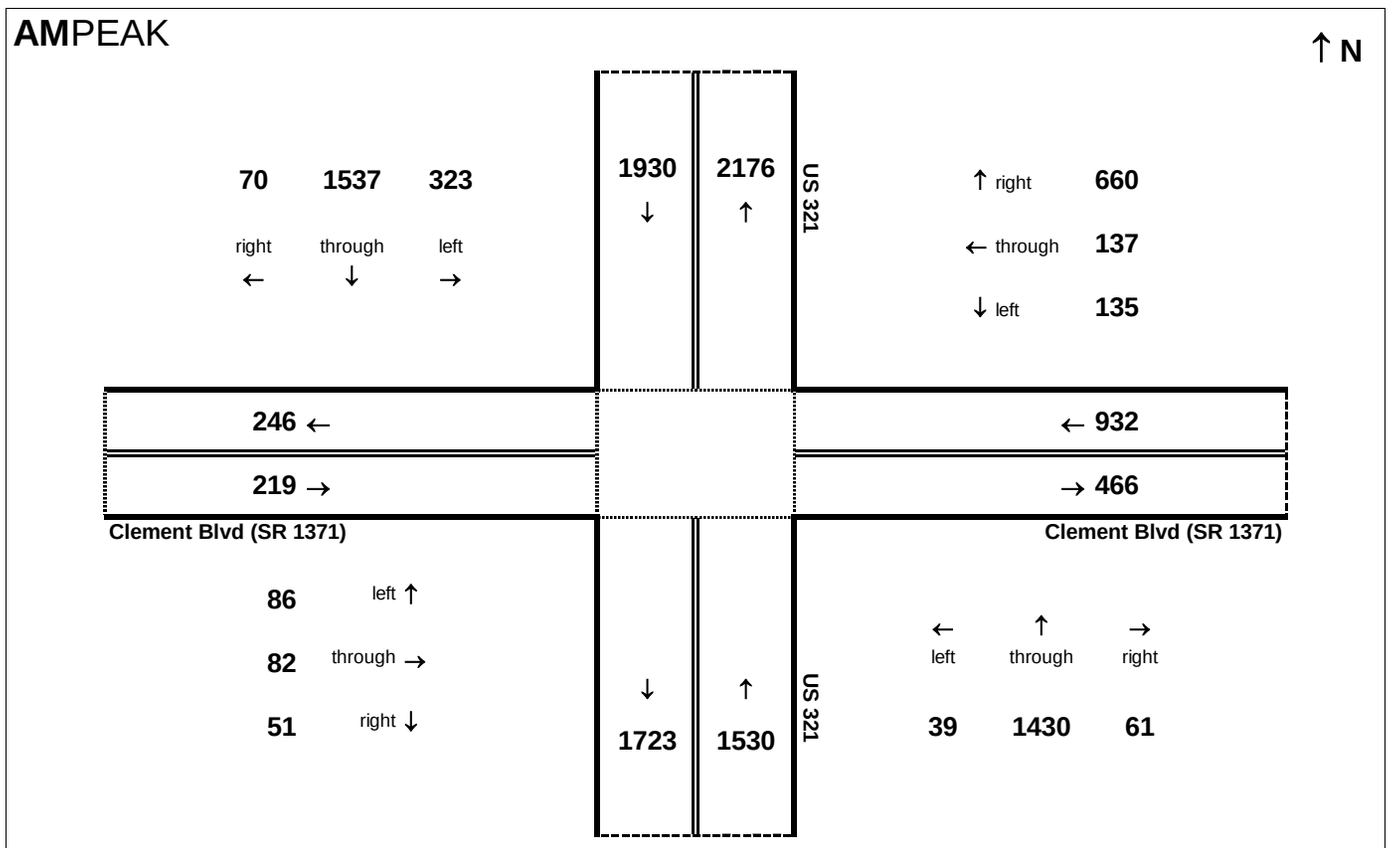



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and Clement Blvd

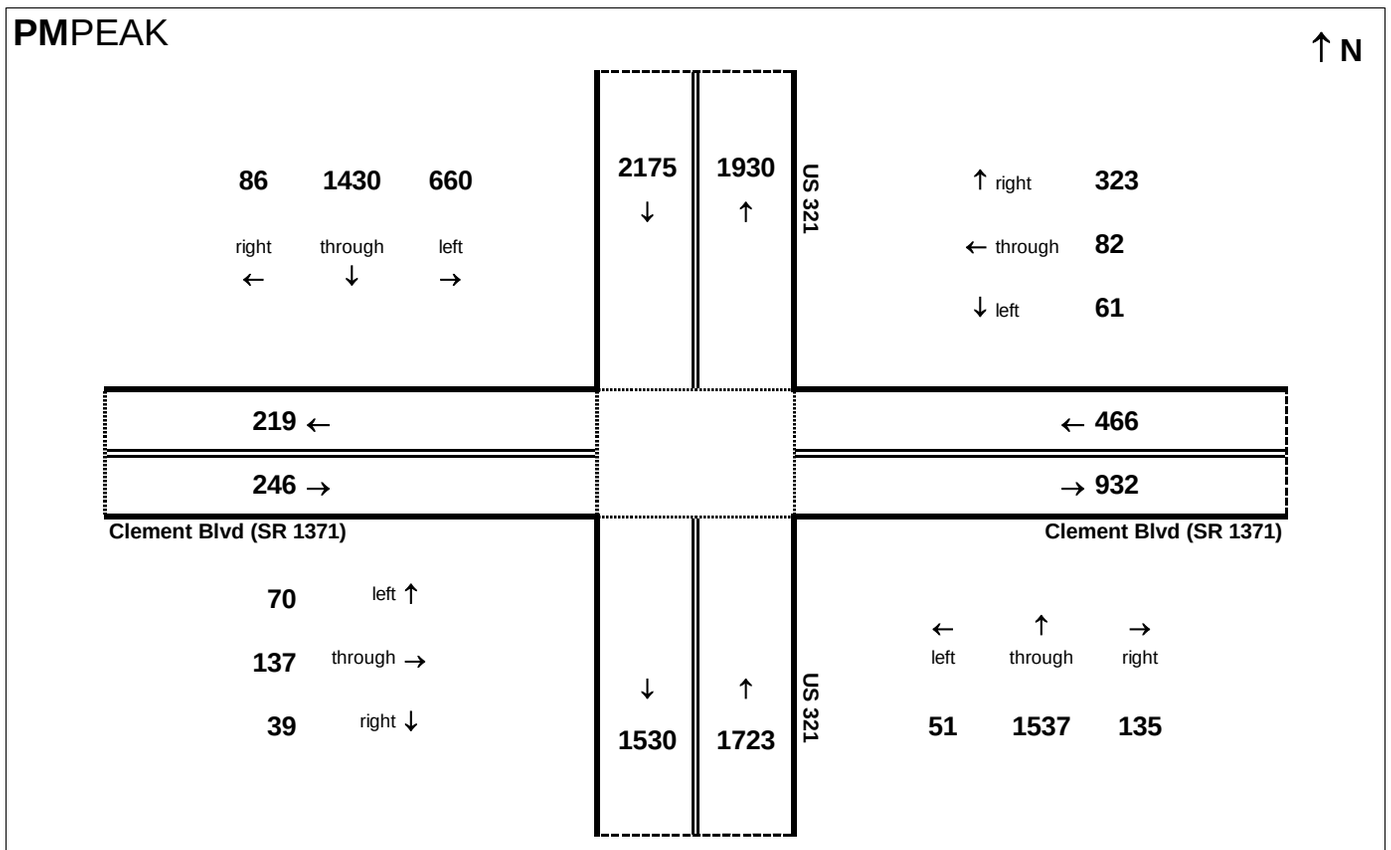
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 No Build

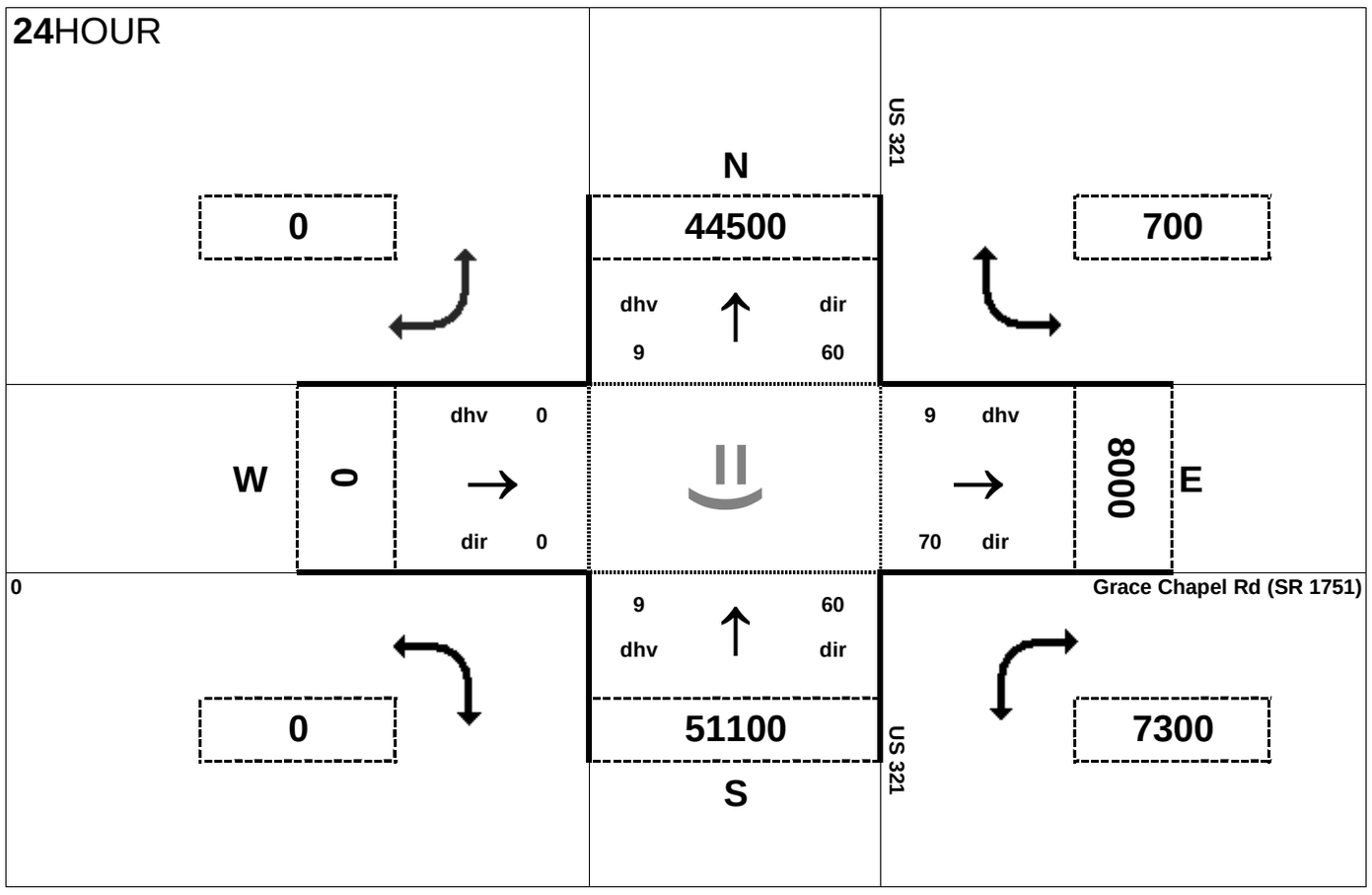
**Project:**
U-4700




*AM peak hour inflow is 4611 vehicles. AM peak hour outflow is 4610 vehicles.*




*PM peak hour inflow is 4610 vehicles. PM peak hour outflow is 4611 vehicles.*

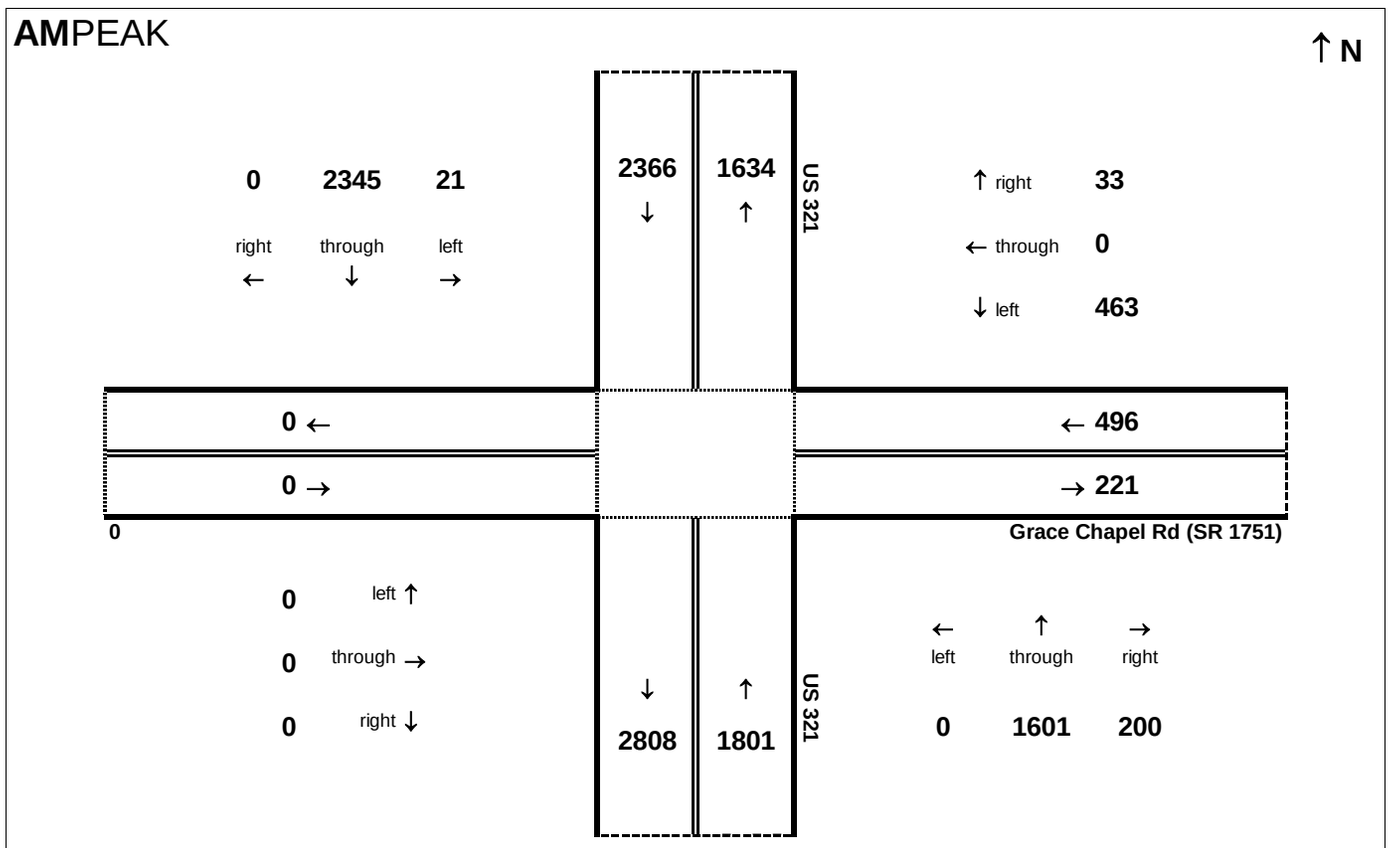



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and Grace Chapel Rd

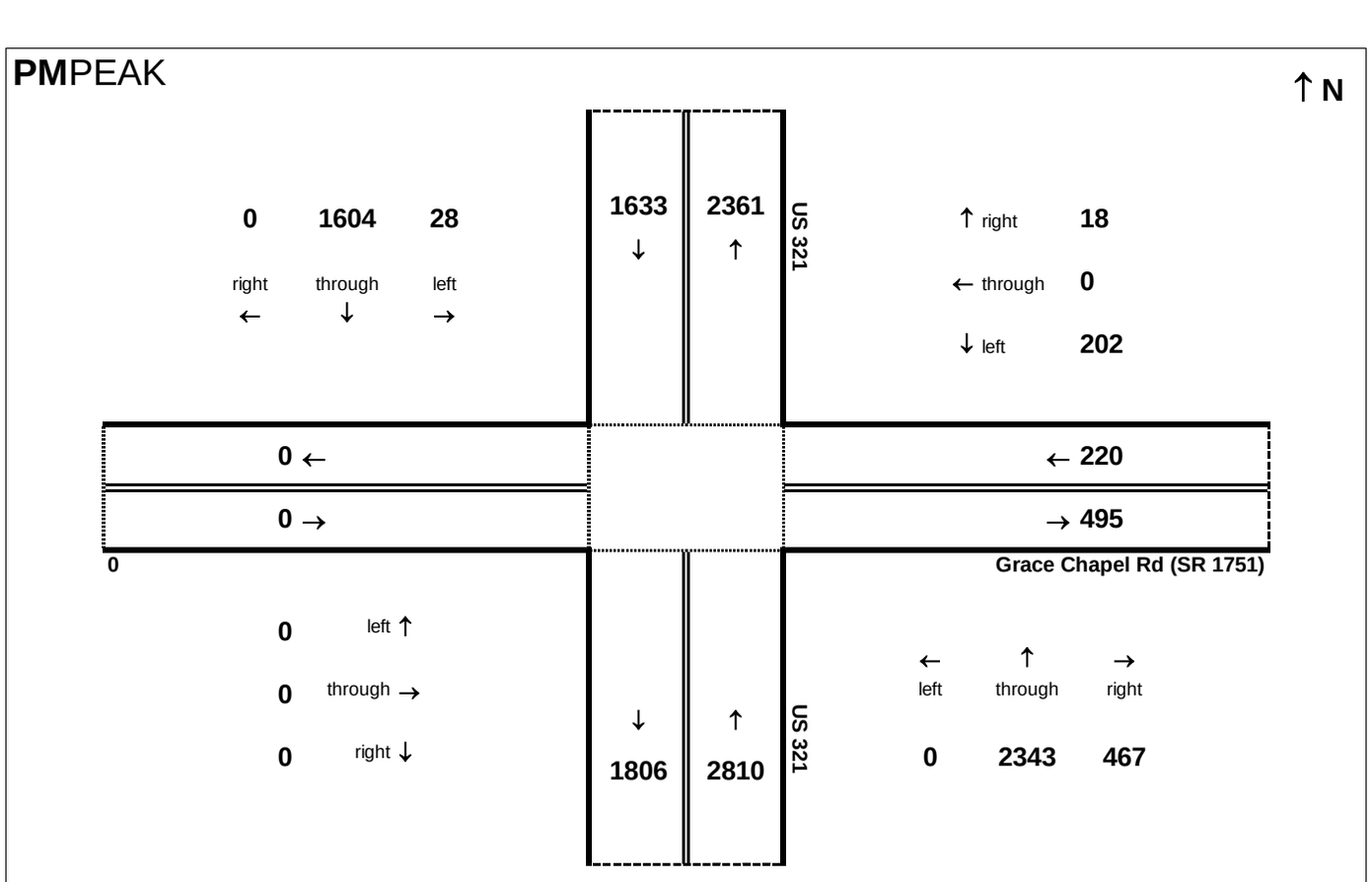
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 No Build

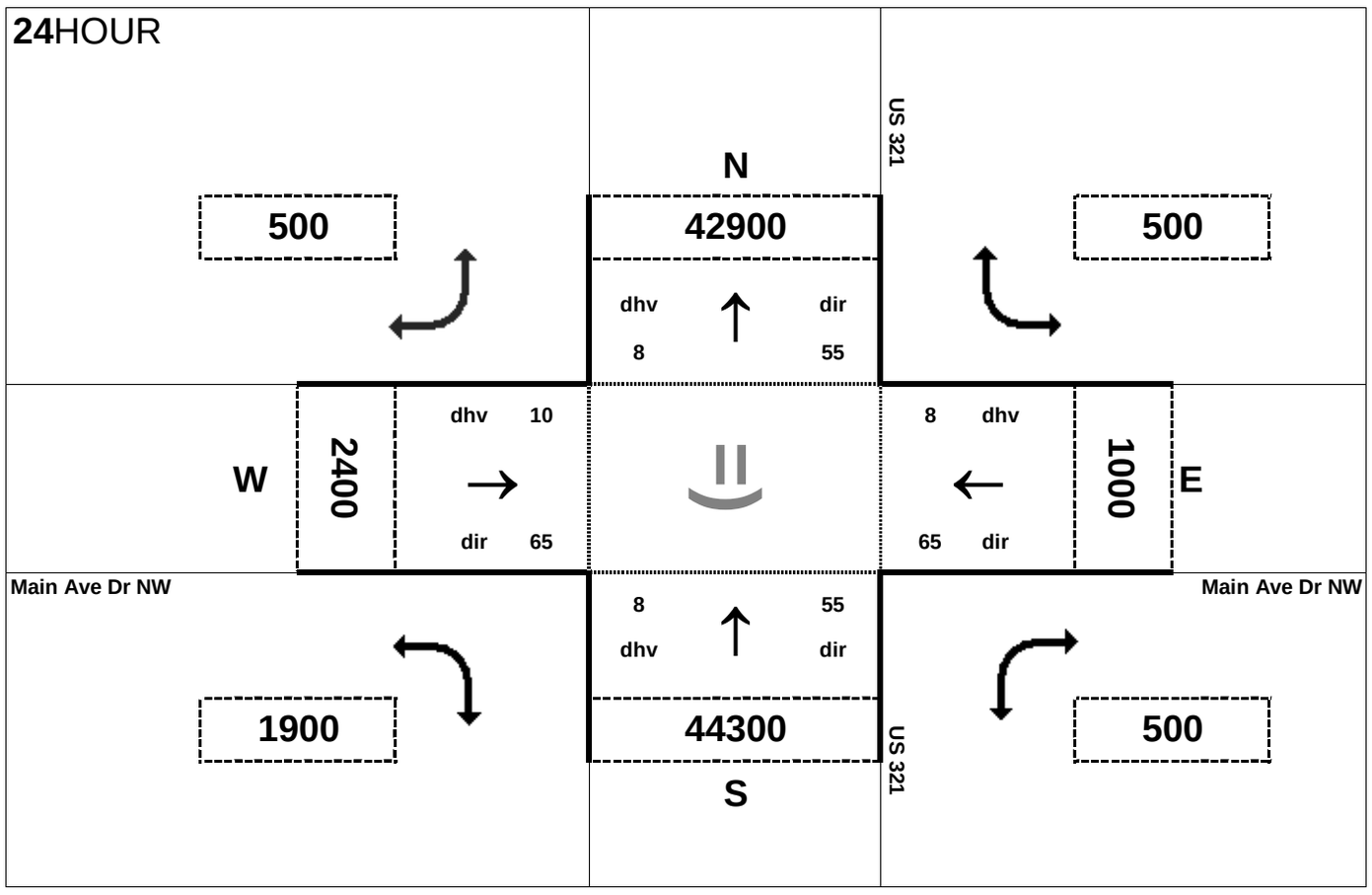
**Project:**
U-4700

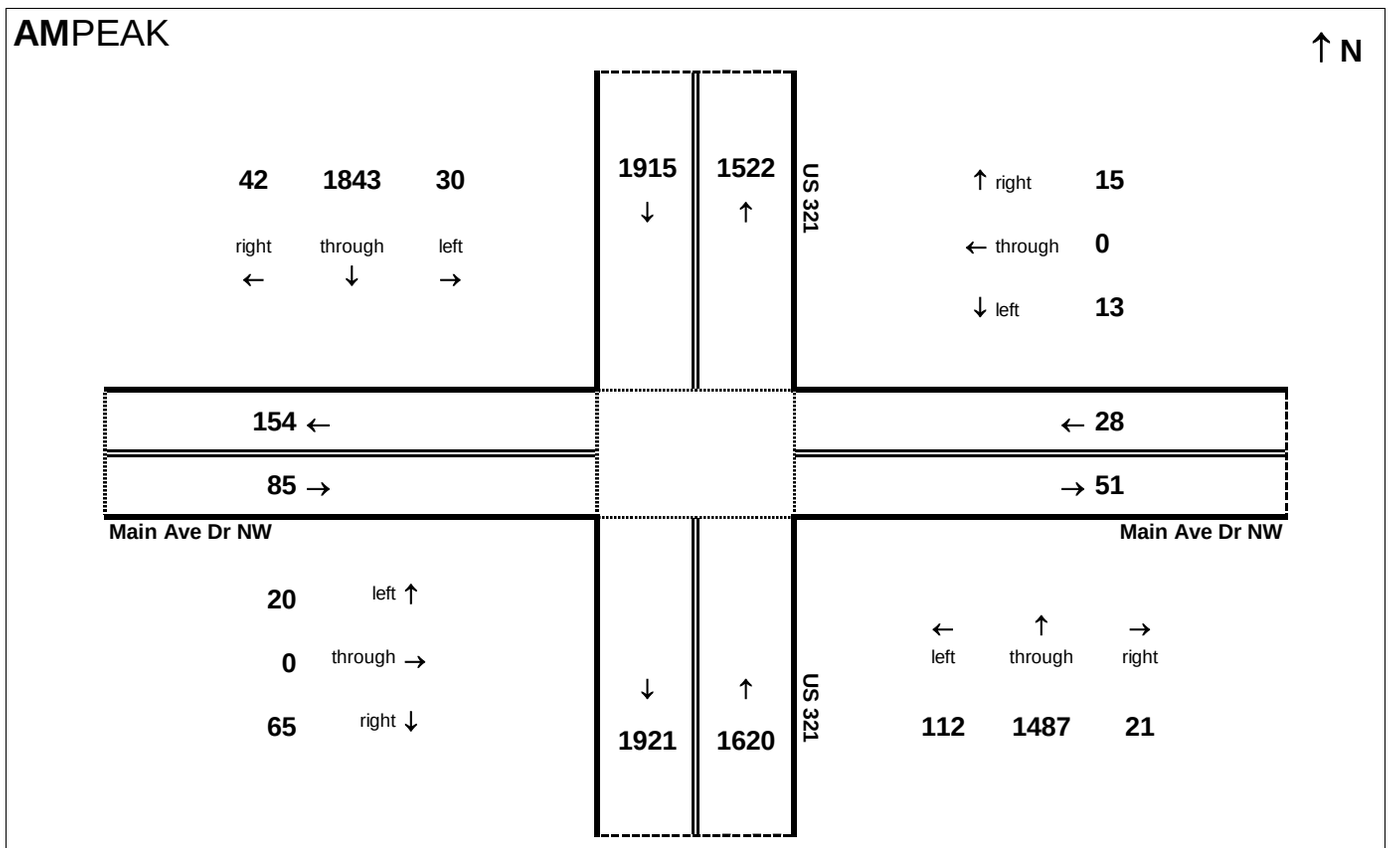



*AM peak hour inflow is 4662 vehicles. AM peak hour outflow is 4662 vehicles.*

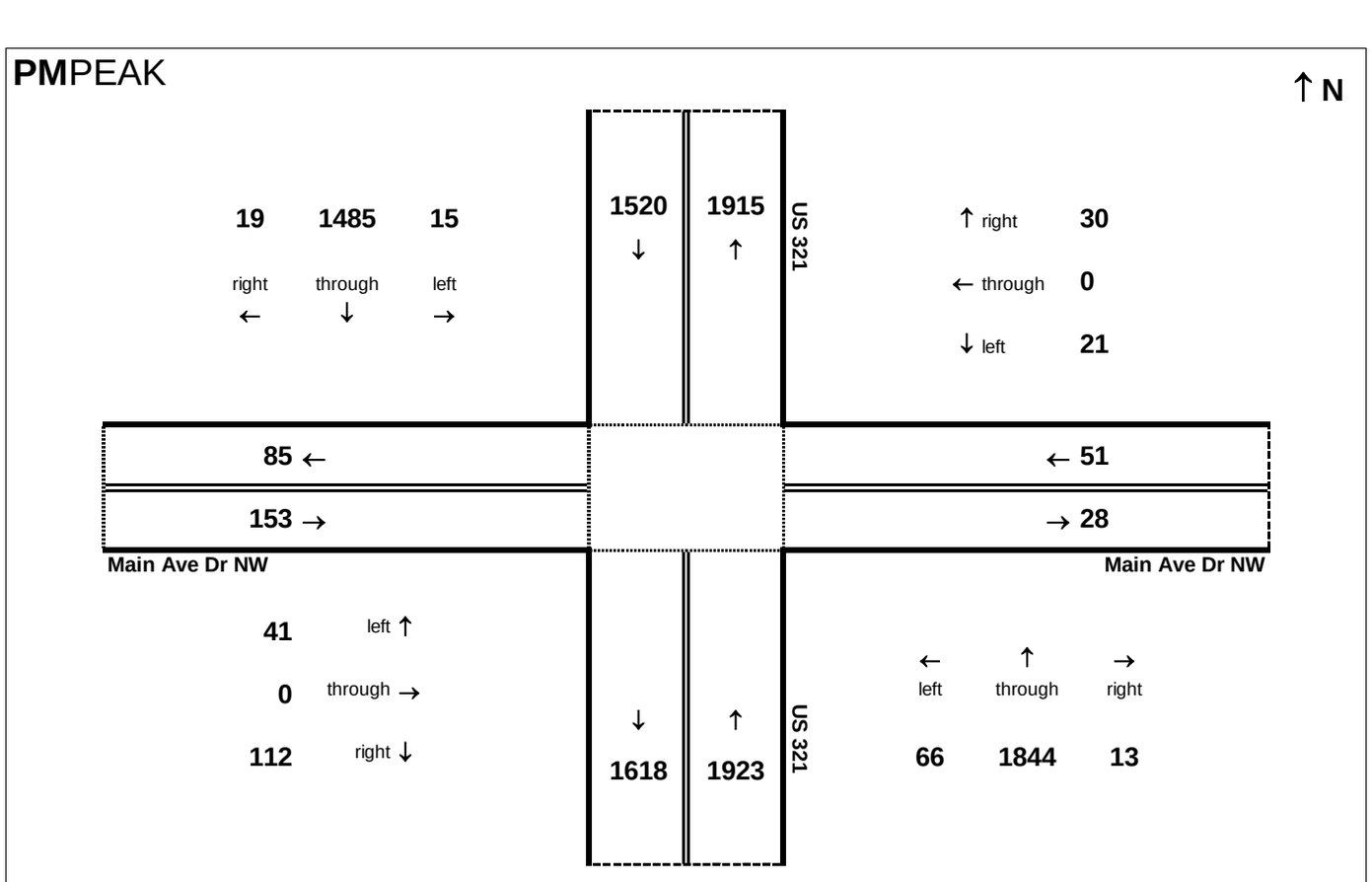



*PM peak hour inflow is 4662 vehicles. PM peak hour outflow is 4662 vehicles.*




*AM peak hour inflow is 3648 vehicles. AM peak hour outflow is 3648 vehicles.*



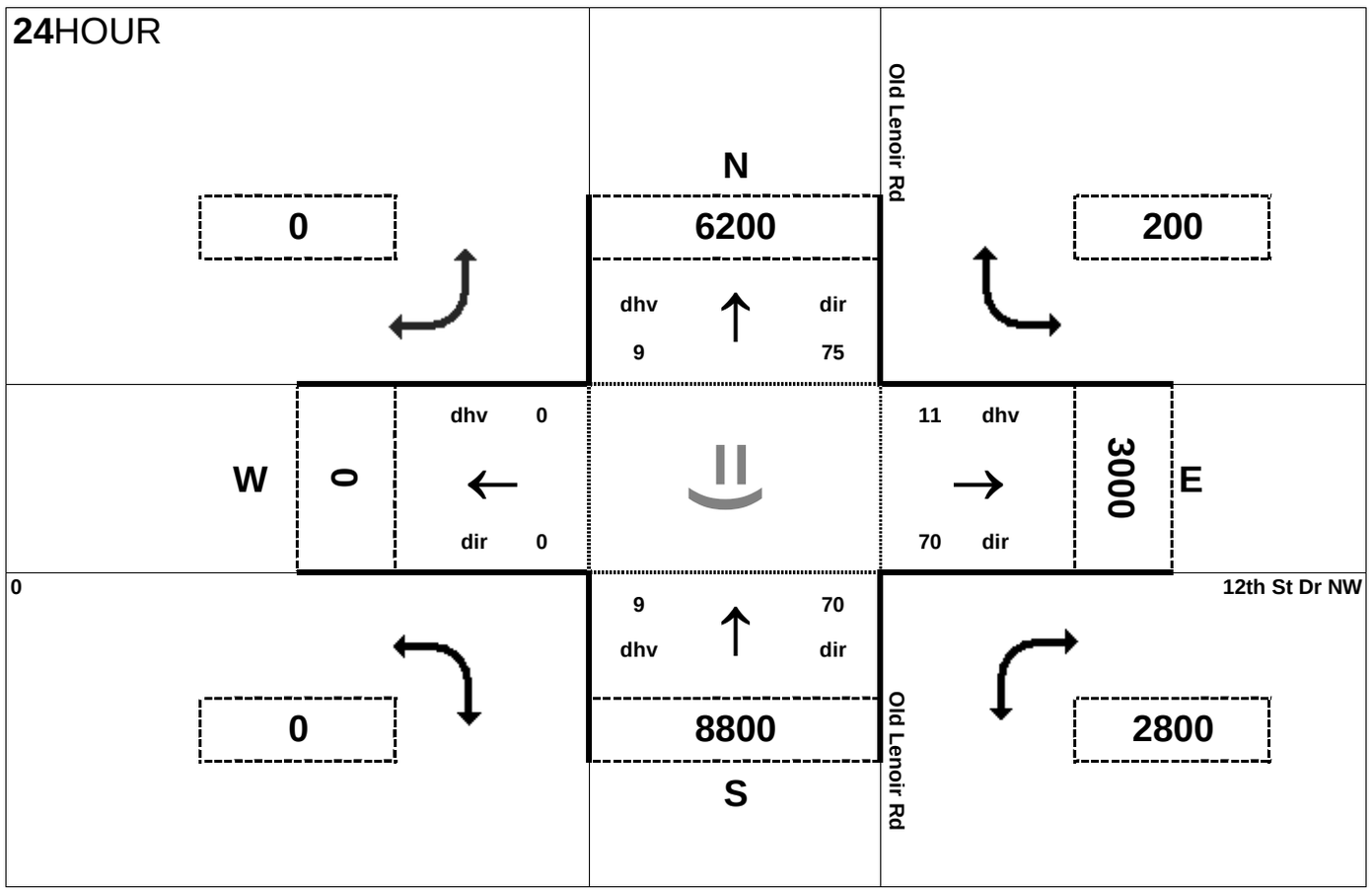

*PM peak hour inflow is 3648 vehicles. PM peak hour outflow is 3647 vehicles.*

**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and Main Ave Dr NW

**Traffic Forecast Release Date:**
February-17

**Traffic Data Year:**
2040 No Build

**Project:**
U-4700

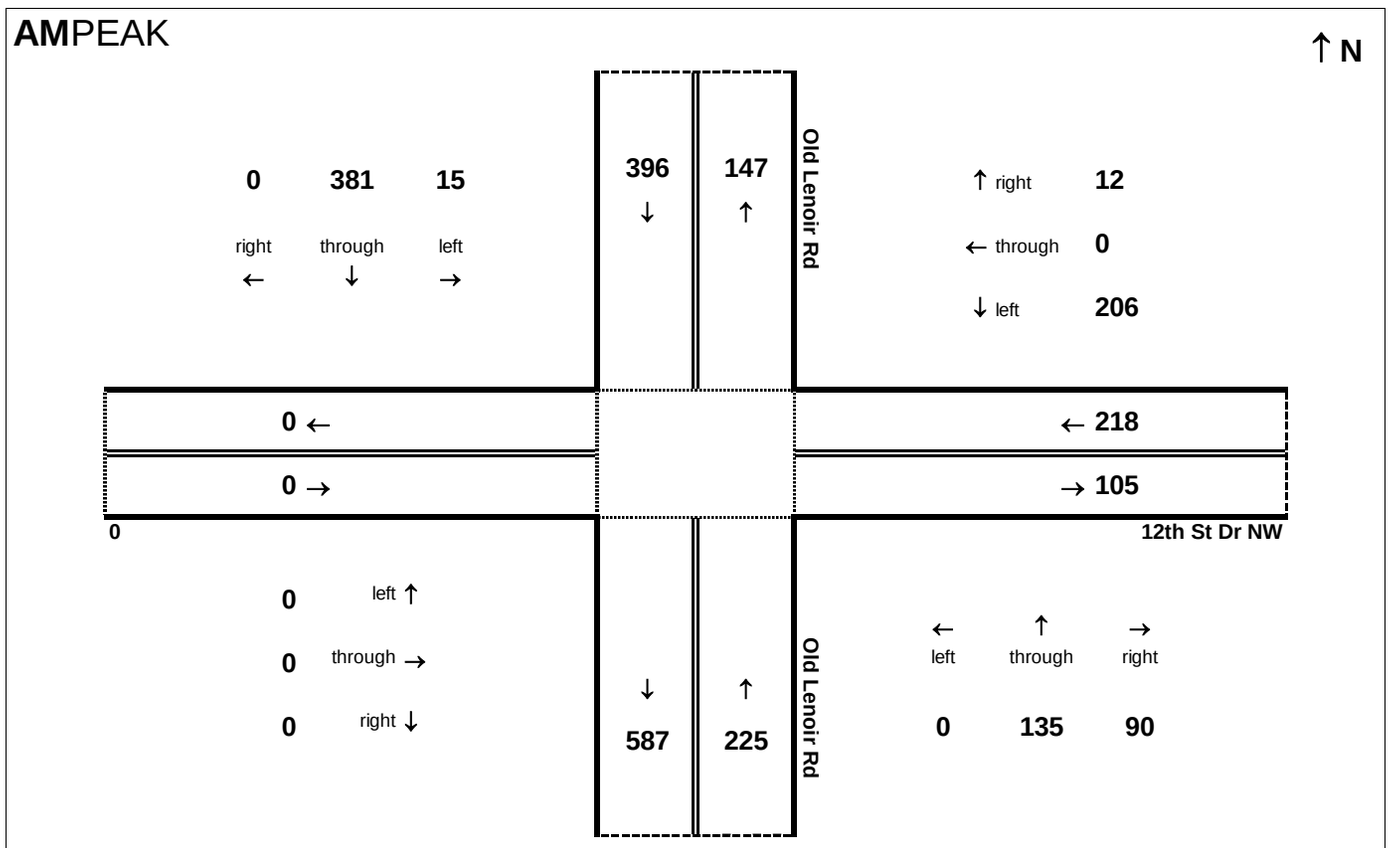



**Peak Hour Volume Breakouts Report:**
Intersection of Old Lenoir Rd and 12th St Dr NW

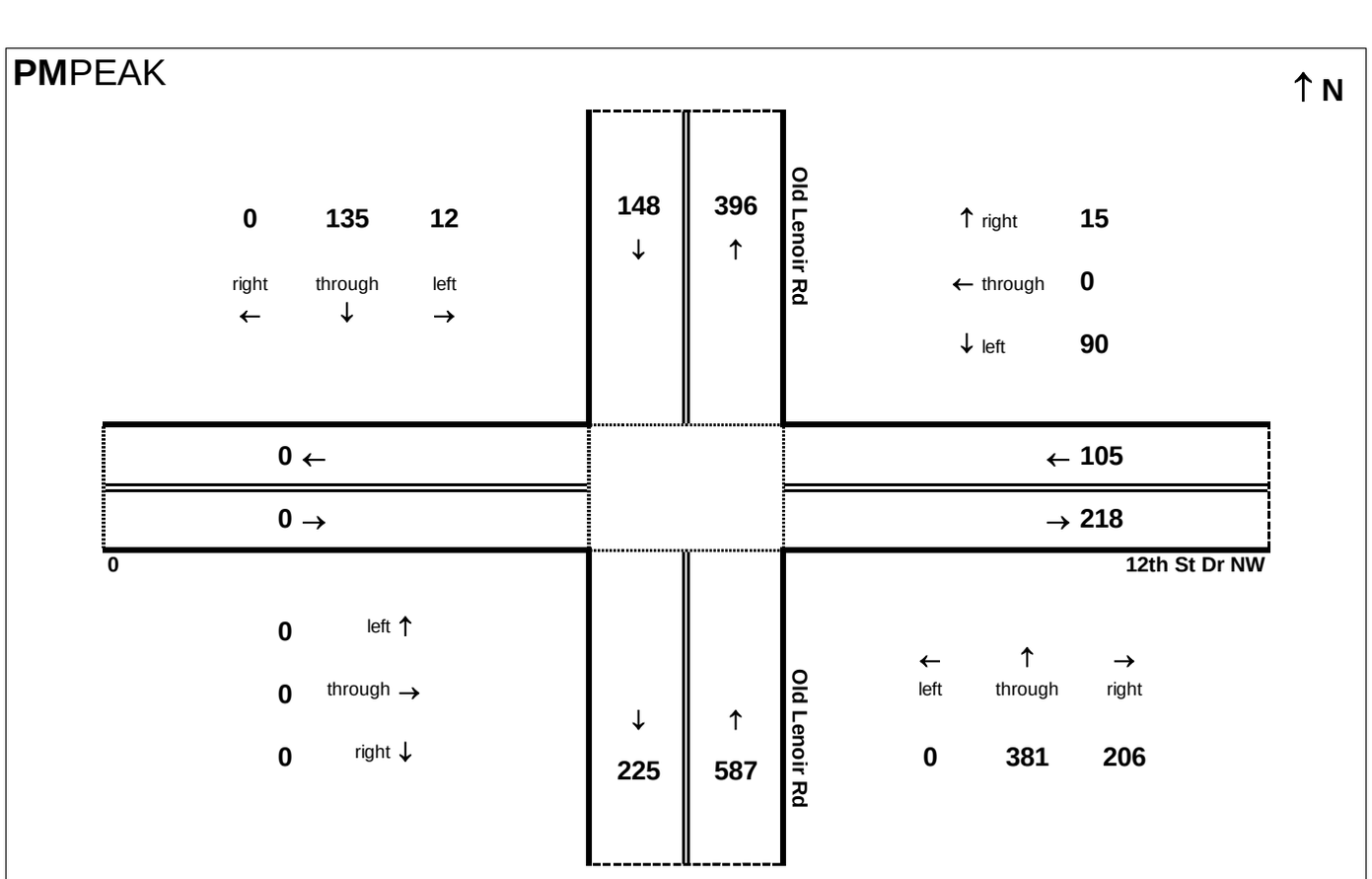
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 No Build

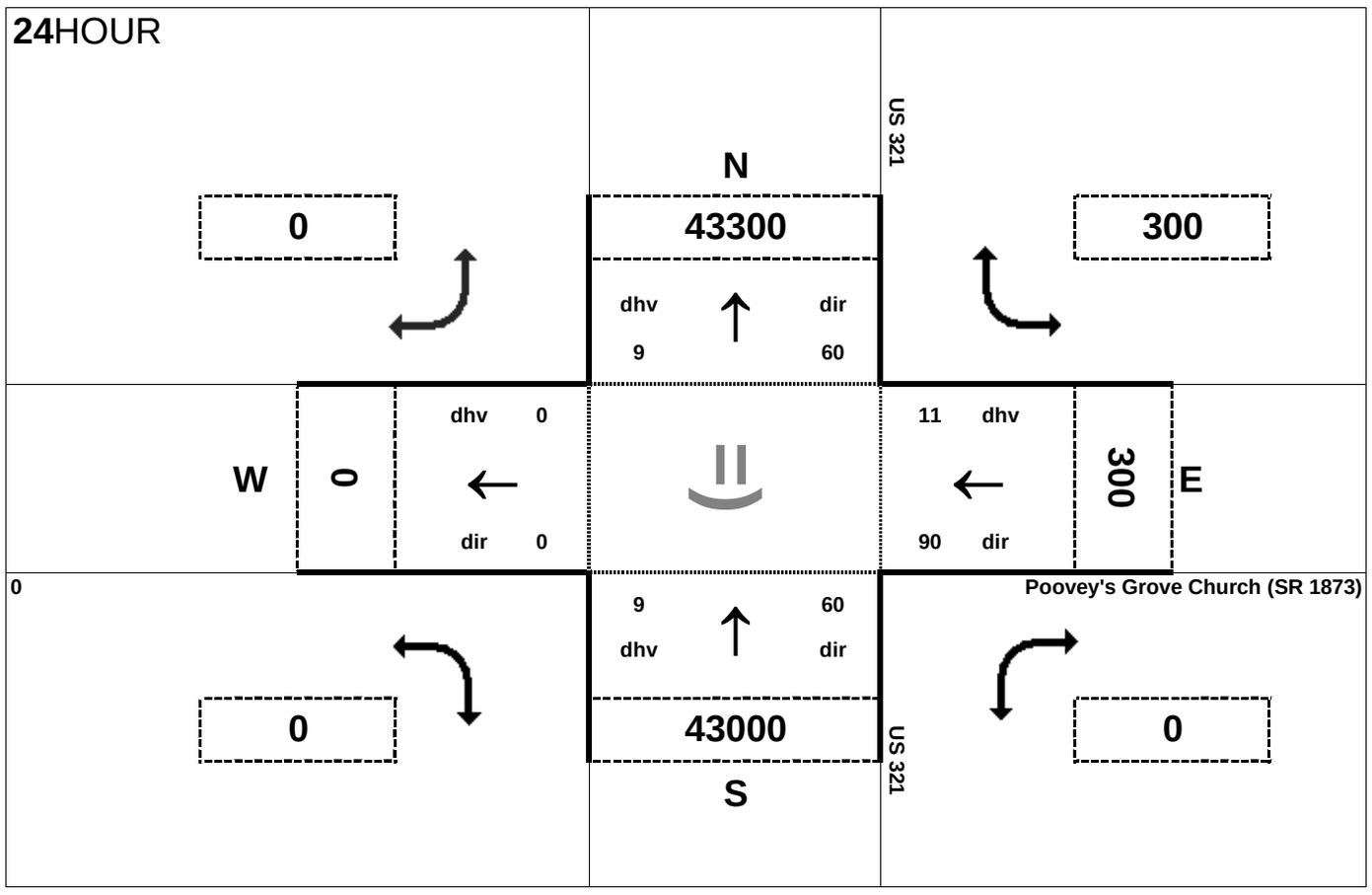
**Project:**
U-4700




*AM peak hour inflow is 840 vehicles. AM peak hour outflow is 840 vehicles.*




*PM peak hour inflow is 840 vehicles. PM peak hour outflow is 840 vehicles.*

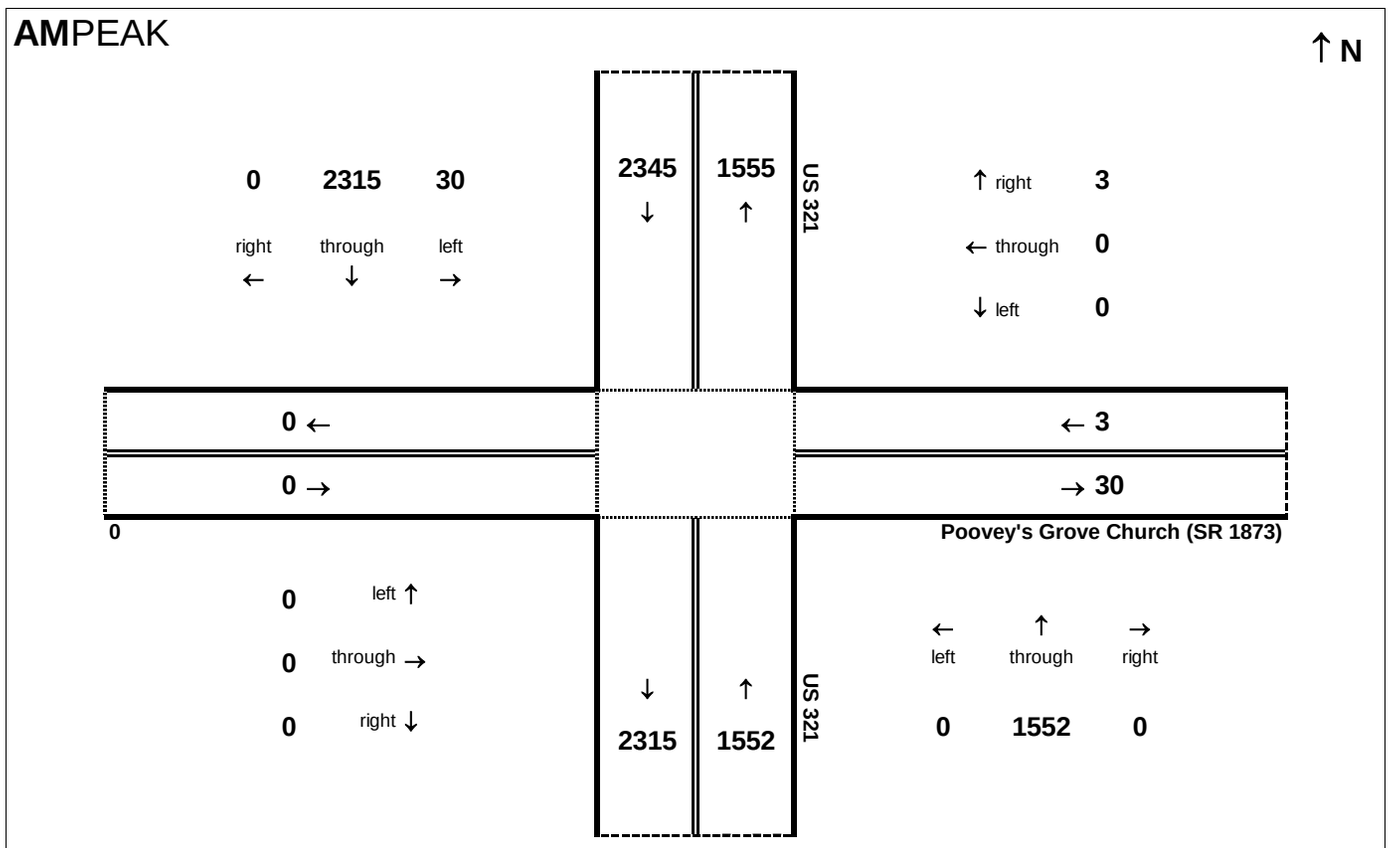



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and Poovey's Grove Church

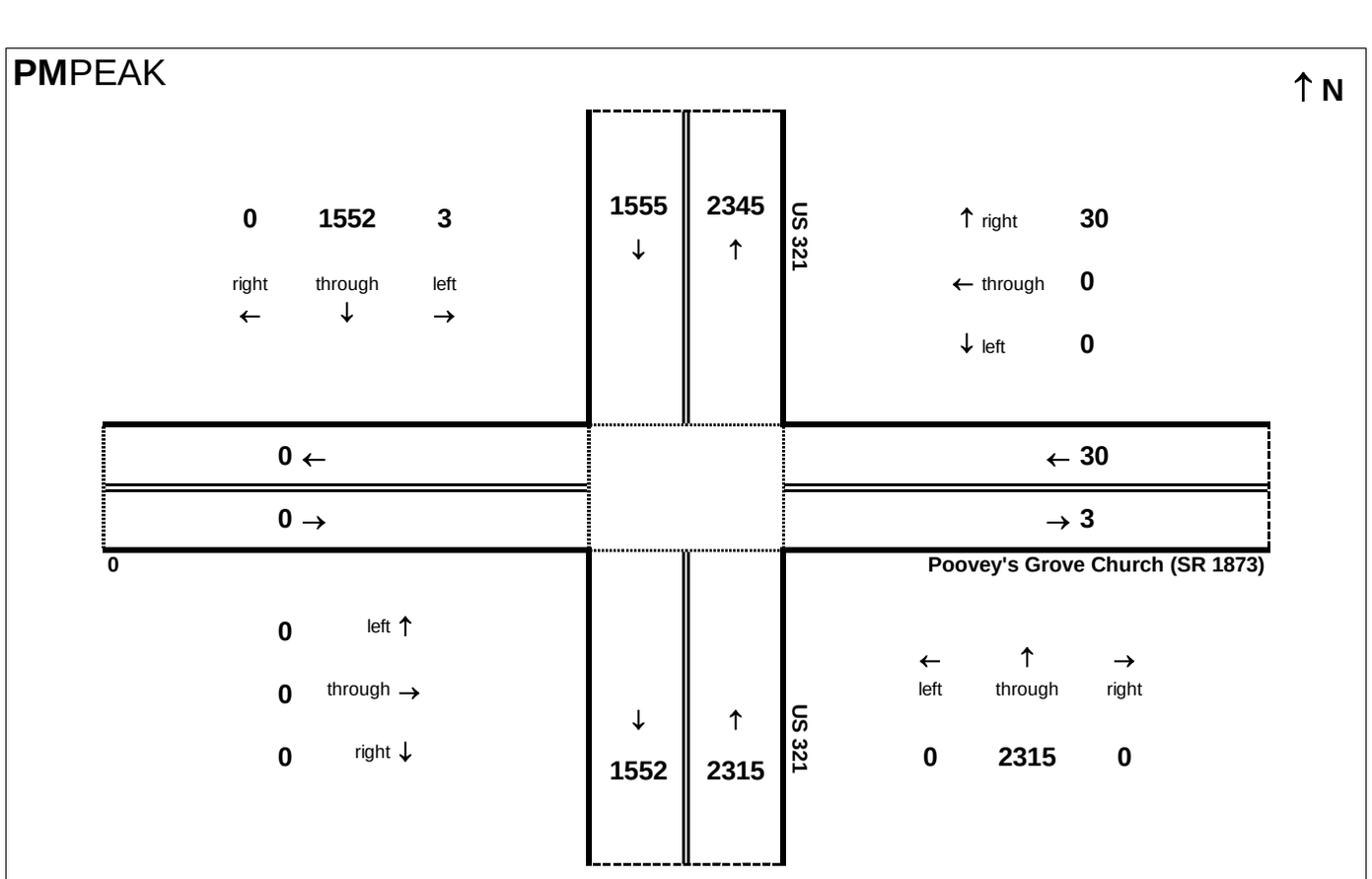
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 No Build

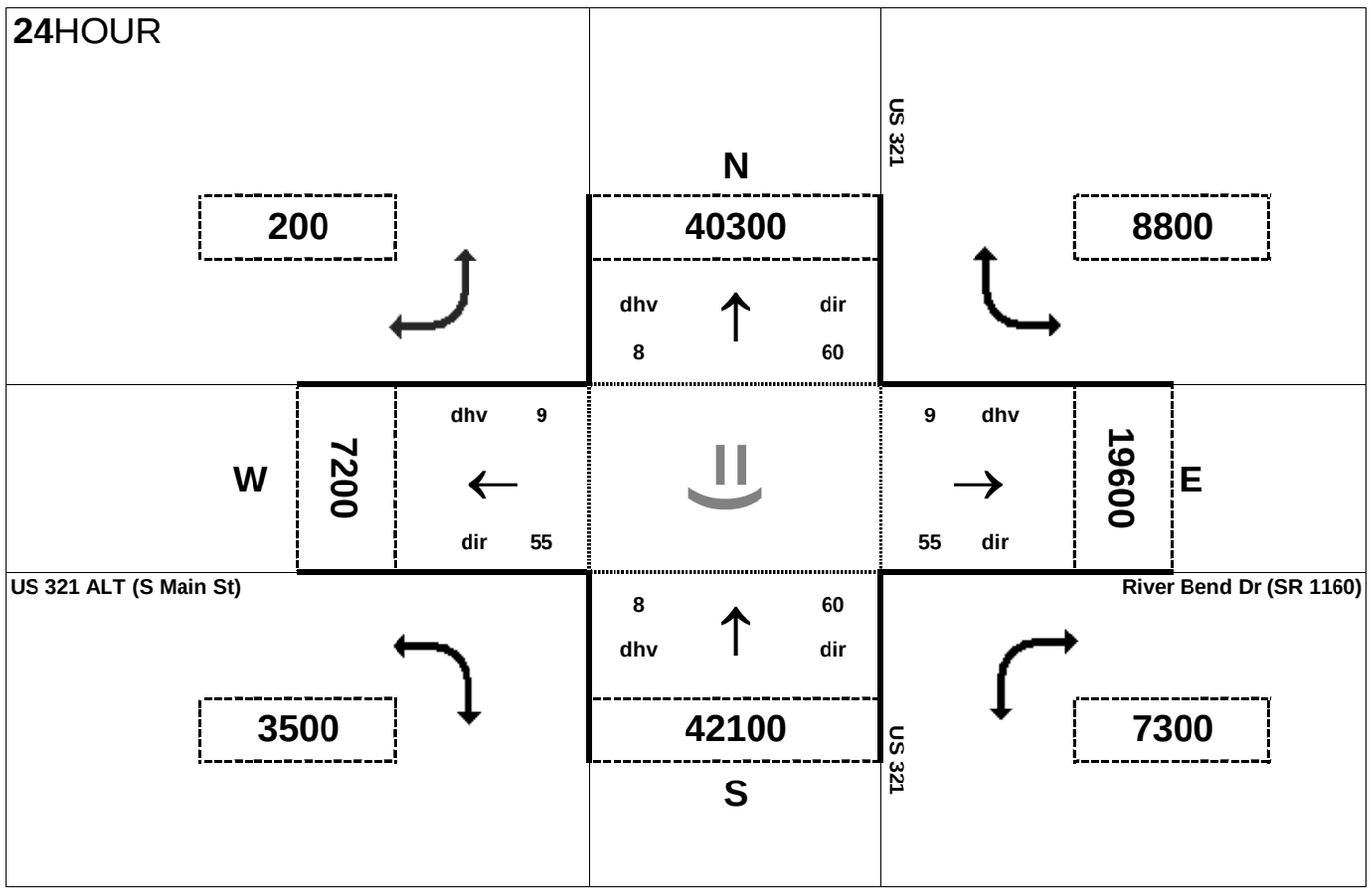
**Project:**
U-4700




*AM peak hour inflow is 3900 vehicles. AM peak hour outflow is 3900 vehicles.*




*PM peak hour inflow is 3900 vehicles. PM peak hour outflow is 3900 vehicles.*

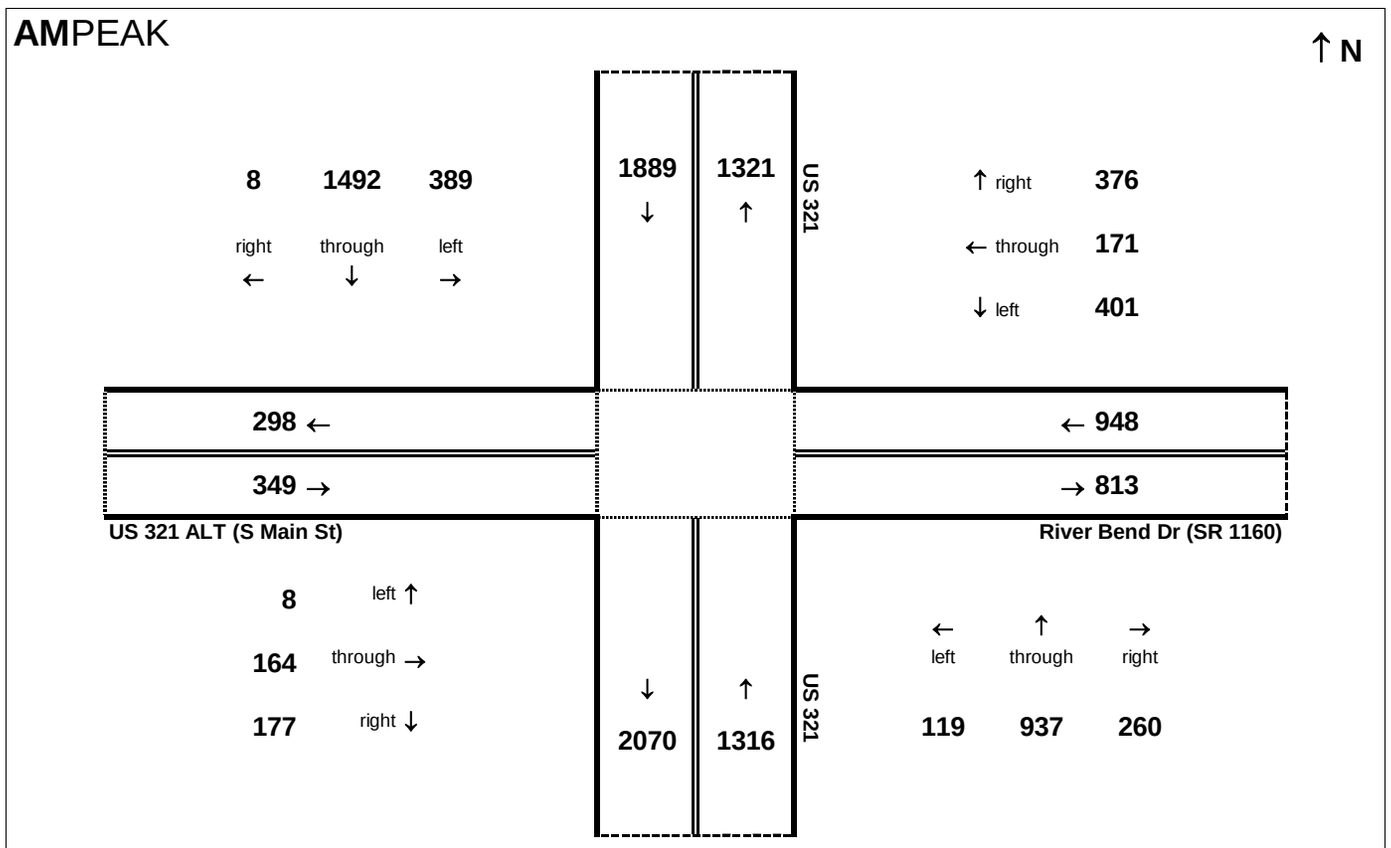



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and US 321 ALT

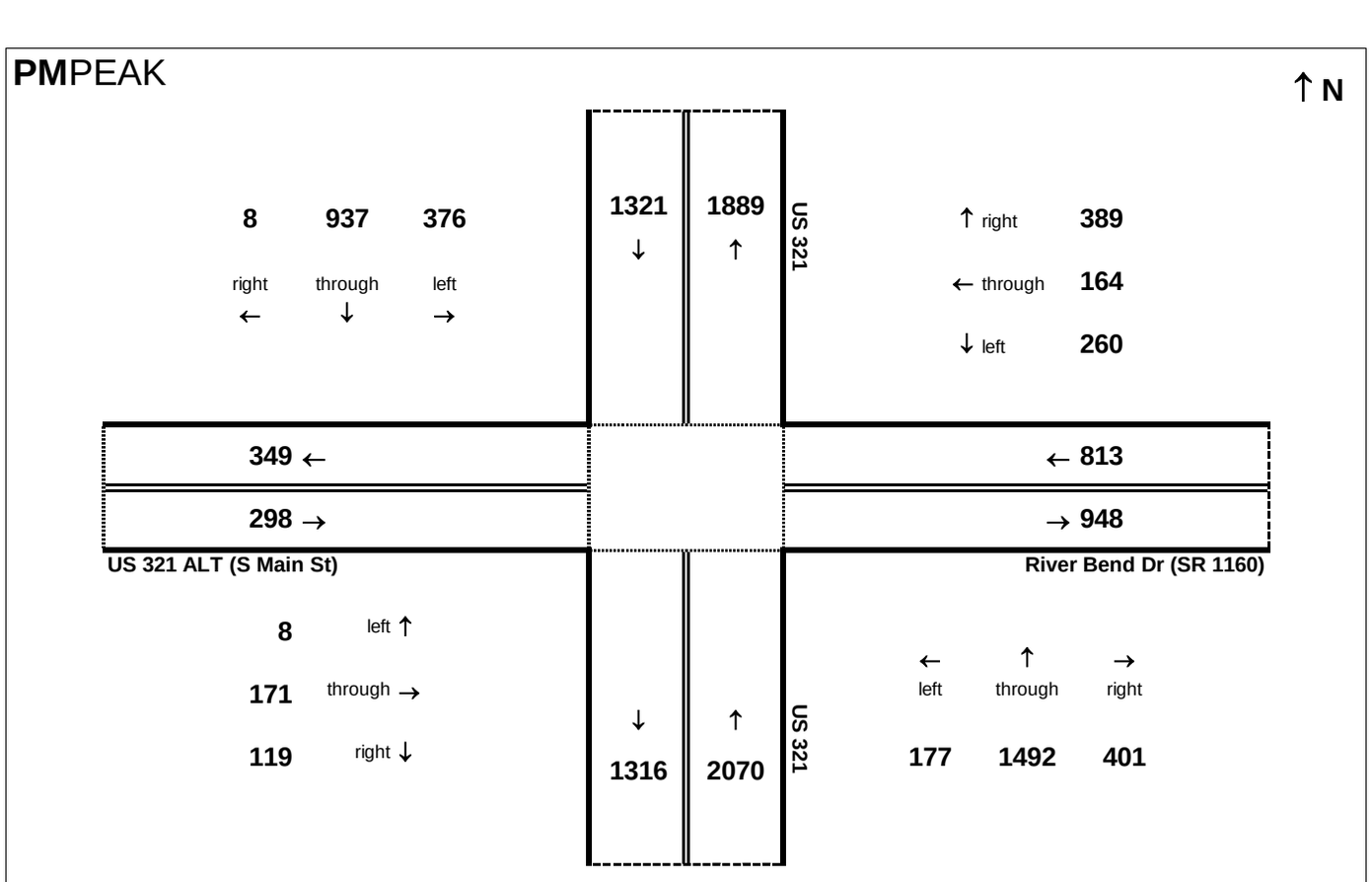
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 No Build

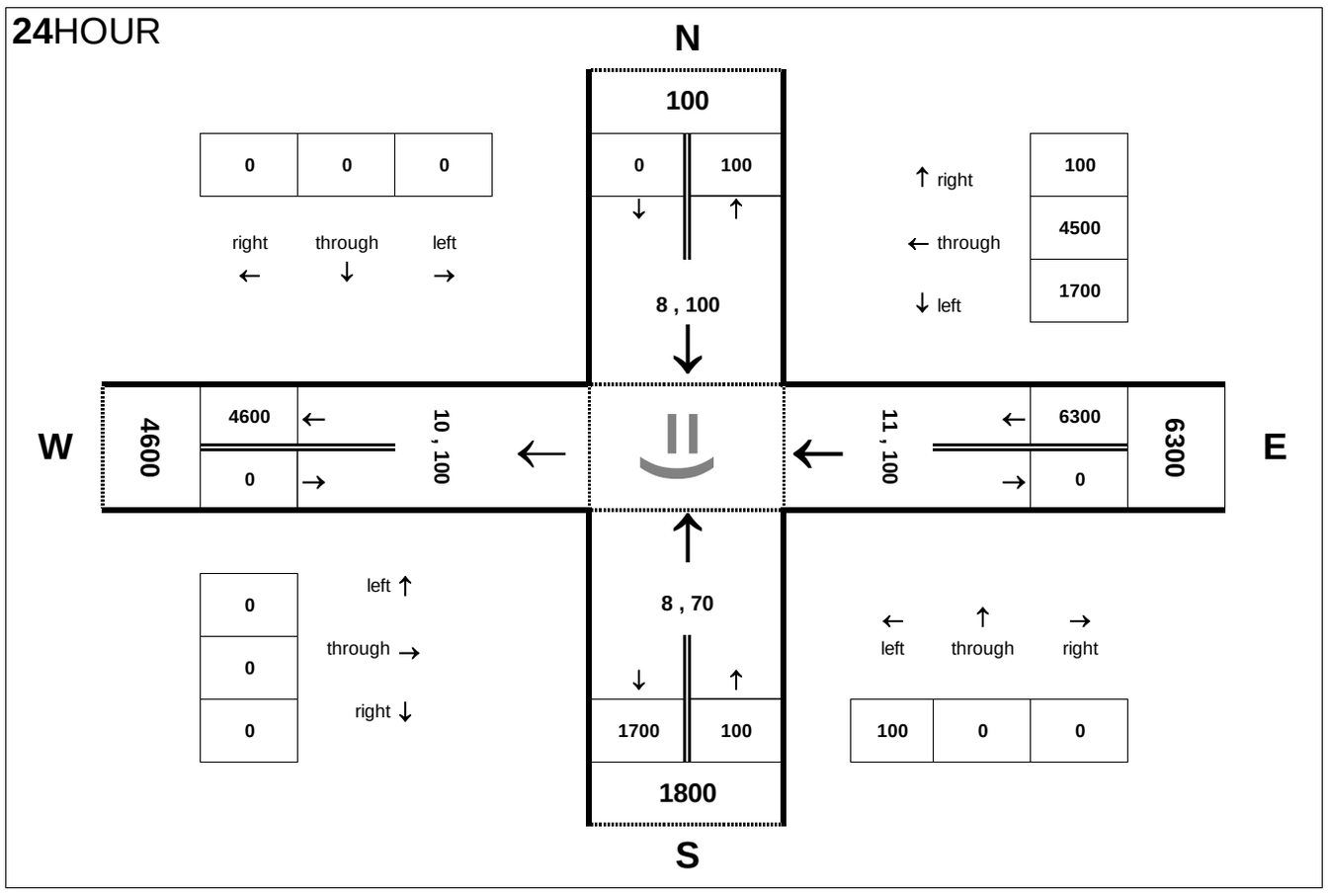
**Project:**
U-4700

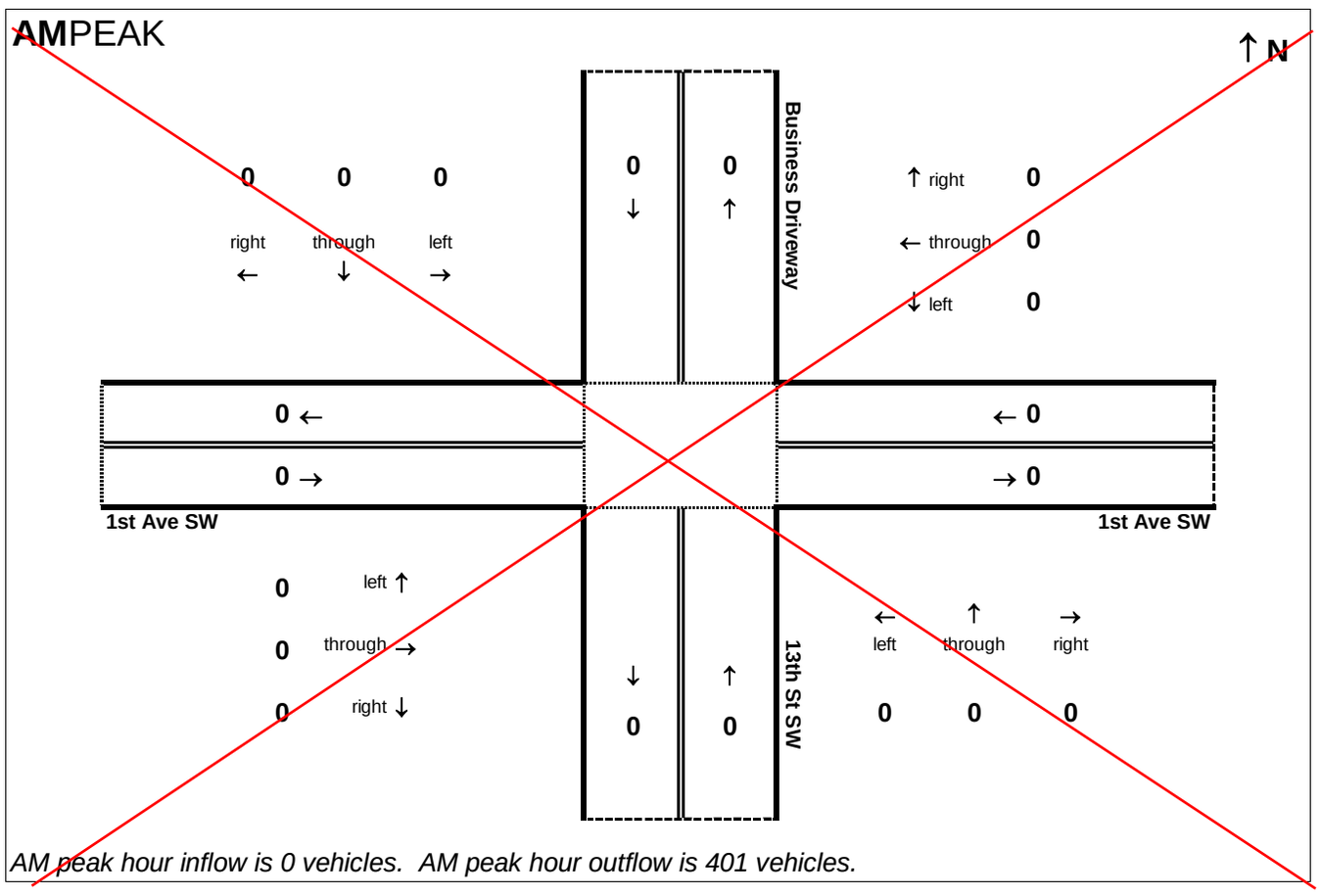



*AM peak hour inflow is 4502 vehicles. AM peak hour outflow is 4503 vehicles.*

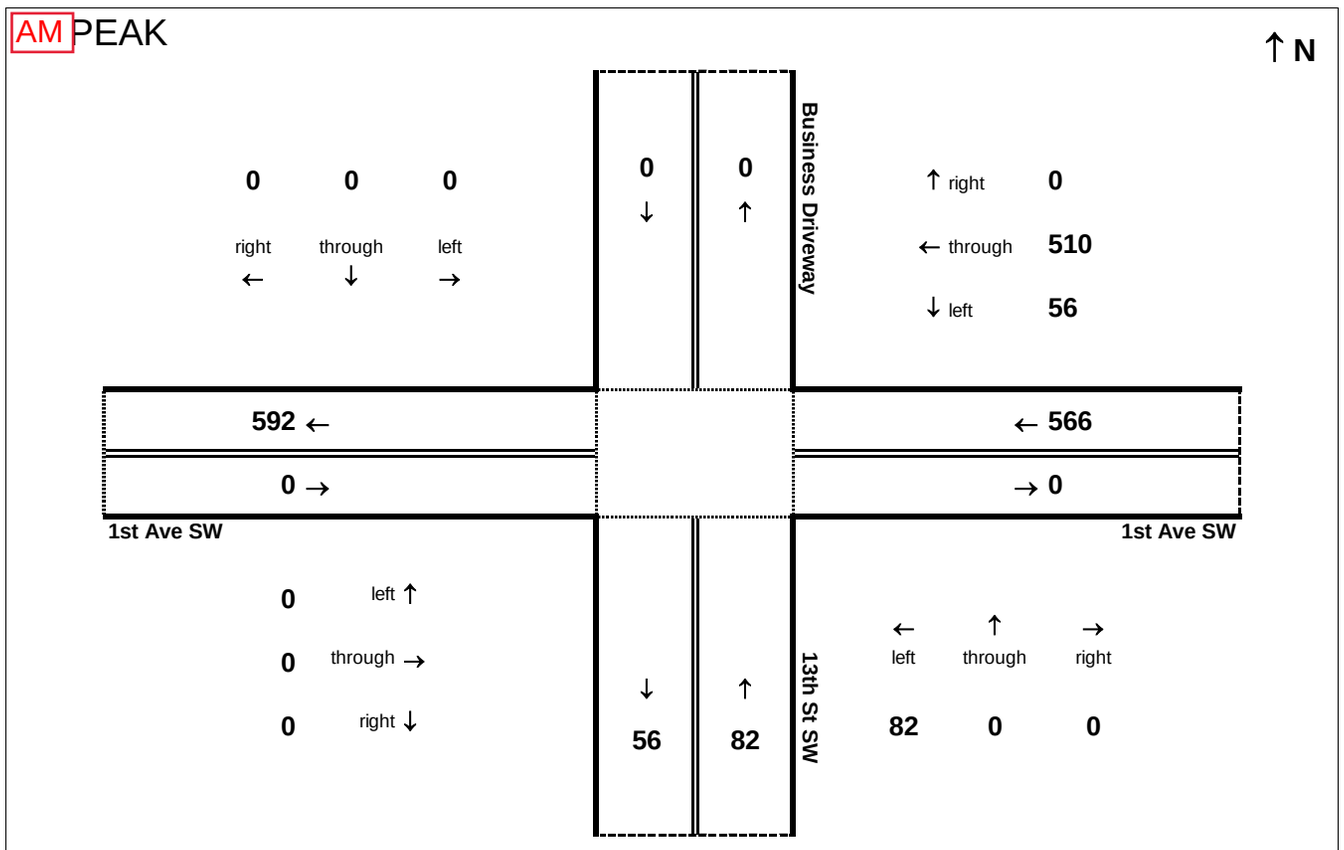



*PM peak hour inflow is 4503 vehicles. PM peak hour outflow is 4502 vehicles.*




*AM peak hour inflow is 0 vehicles. AM peak hour outflow is 401 vehicles.*




*PM peak hour inflow is 648 vehicles. PM peak hour outflow is 649 vehicles.*

**Peak Hour Volume Breakouts Report:**
Intersection of 1st Ave SW and 13th St SW

**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 1

**Project:**
U-4700

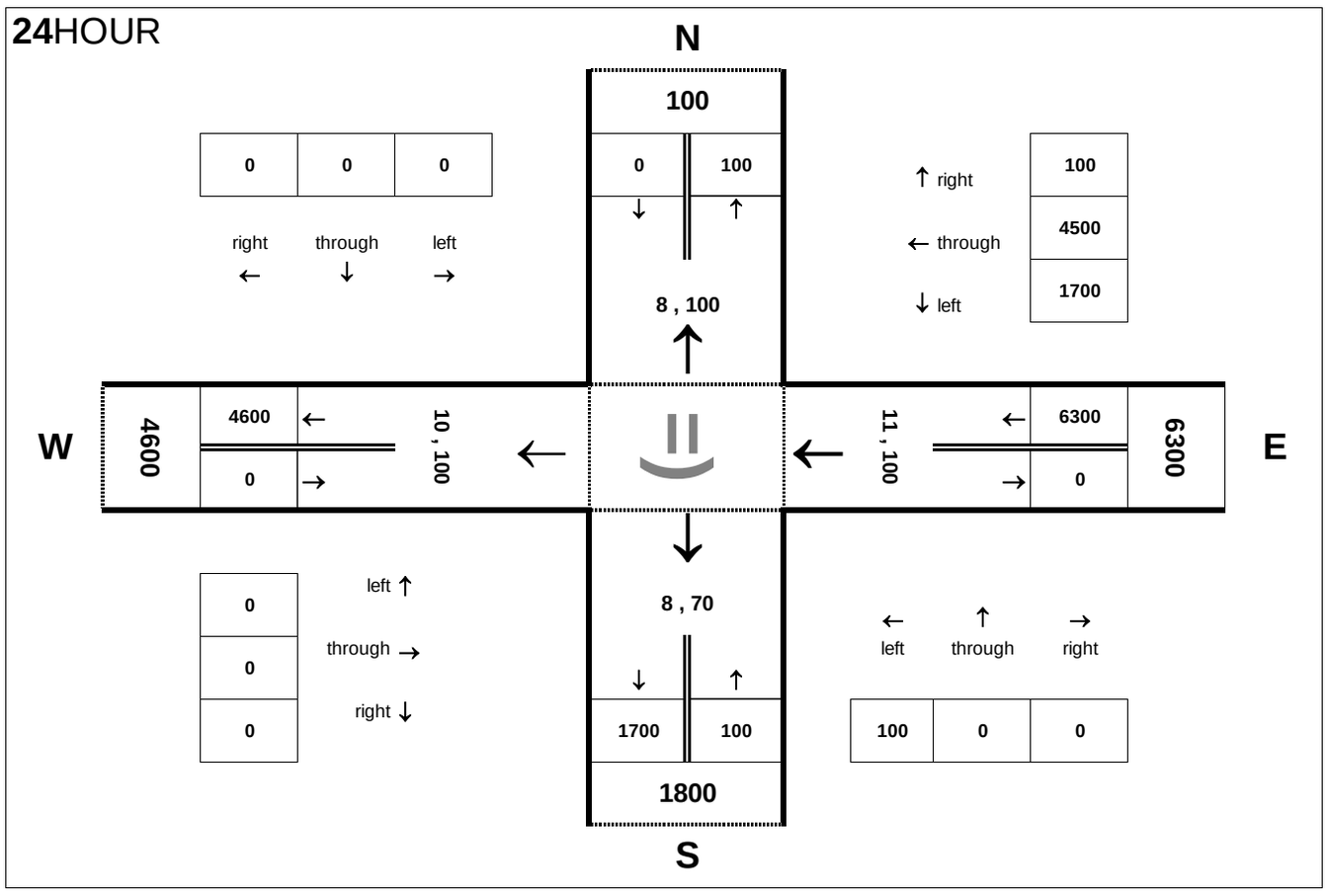
Note: In order to use the spreadsheet program, and use the 100% directional in the AM on the one-way street(s), the input directionals for the two way moves were reversed, and the pm output data was used for the am.

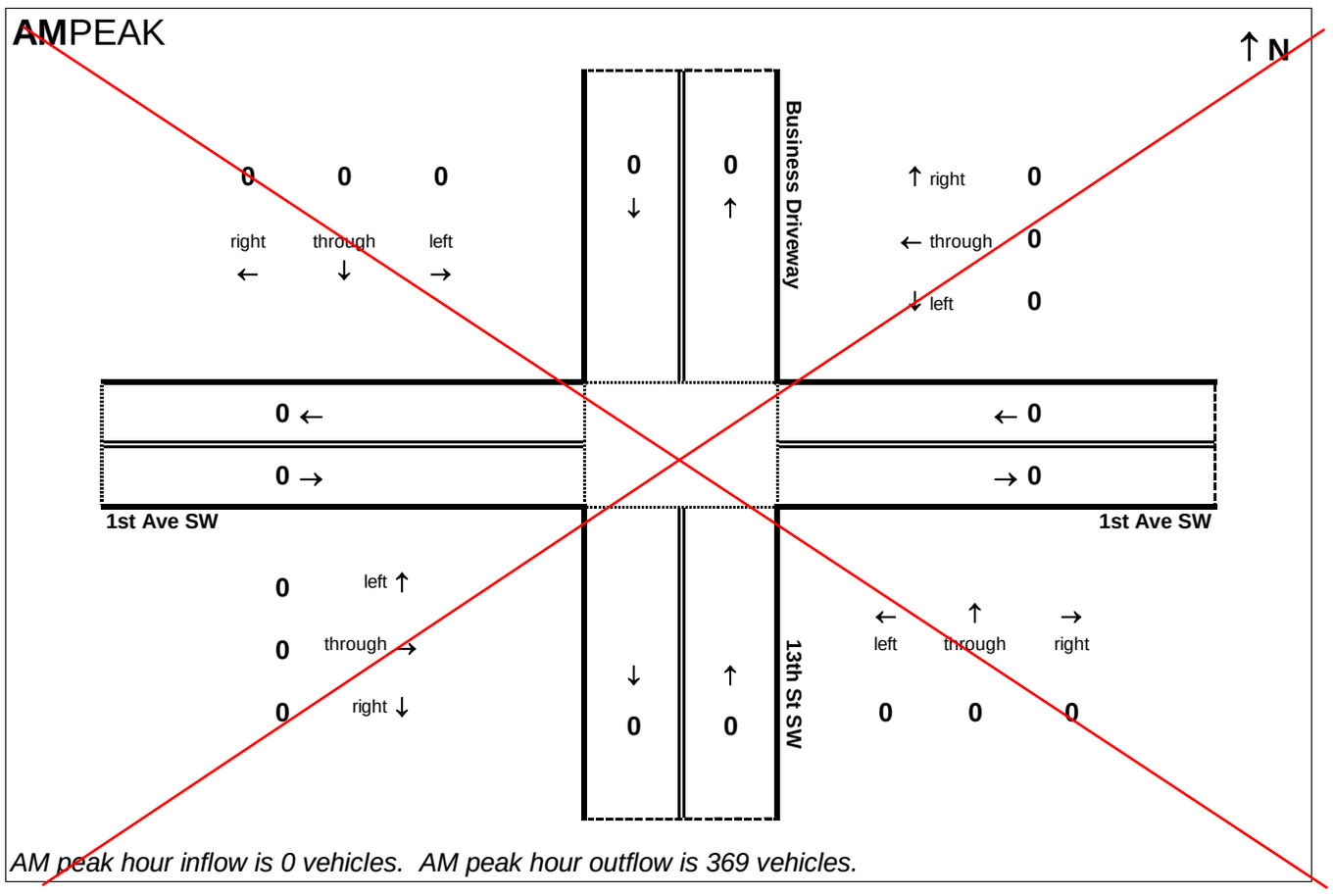
**Peak Hour Volume Breakouts Report:**
Intersection of 1st Ave SW and 13th St SW

**Traffic Forecast Release Date:**
December-16

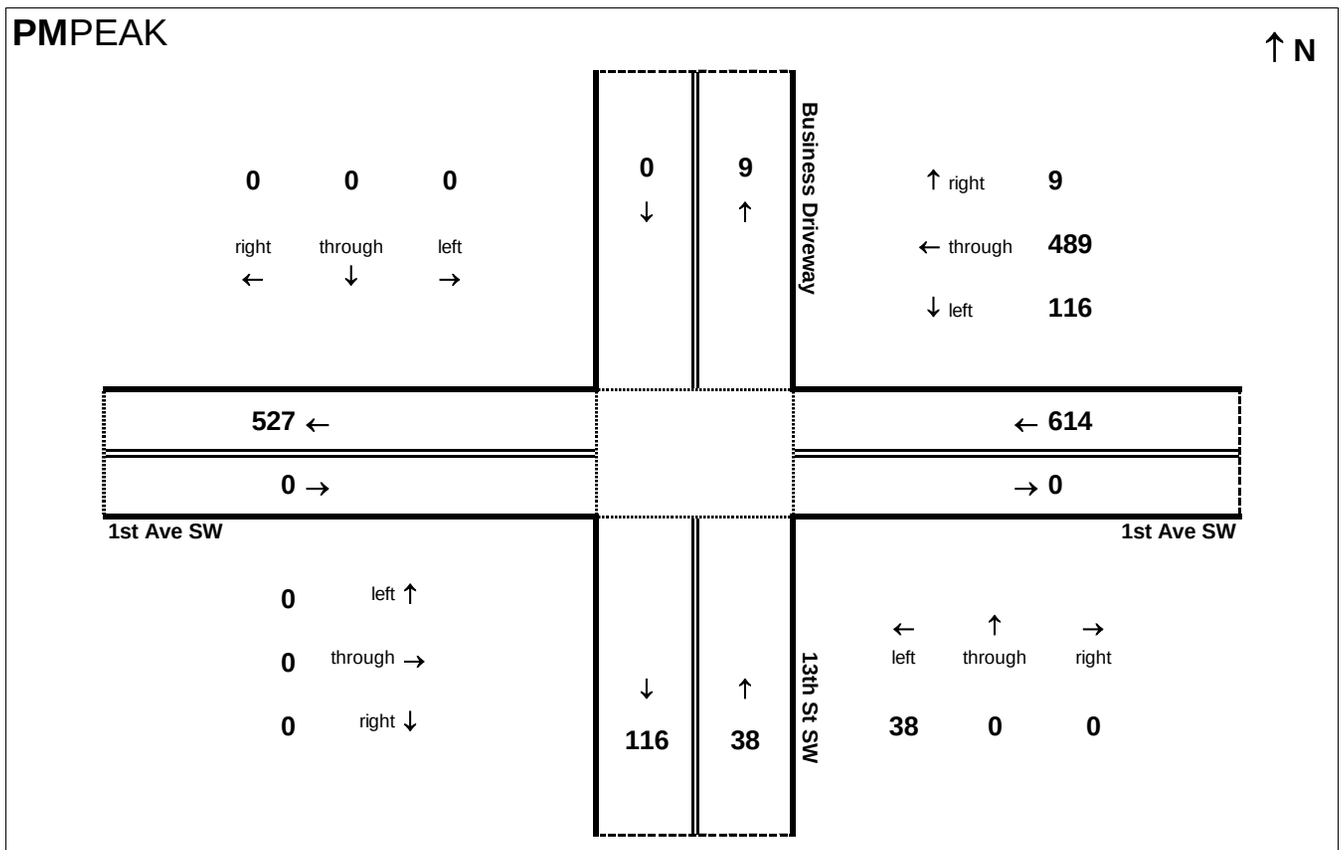
**Traffic Data Year:**
2040 Build 1

**Project:**
U-4700

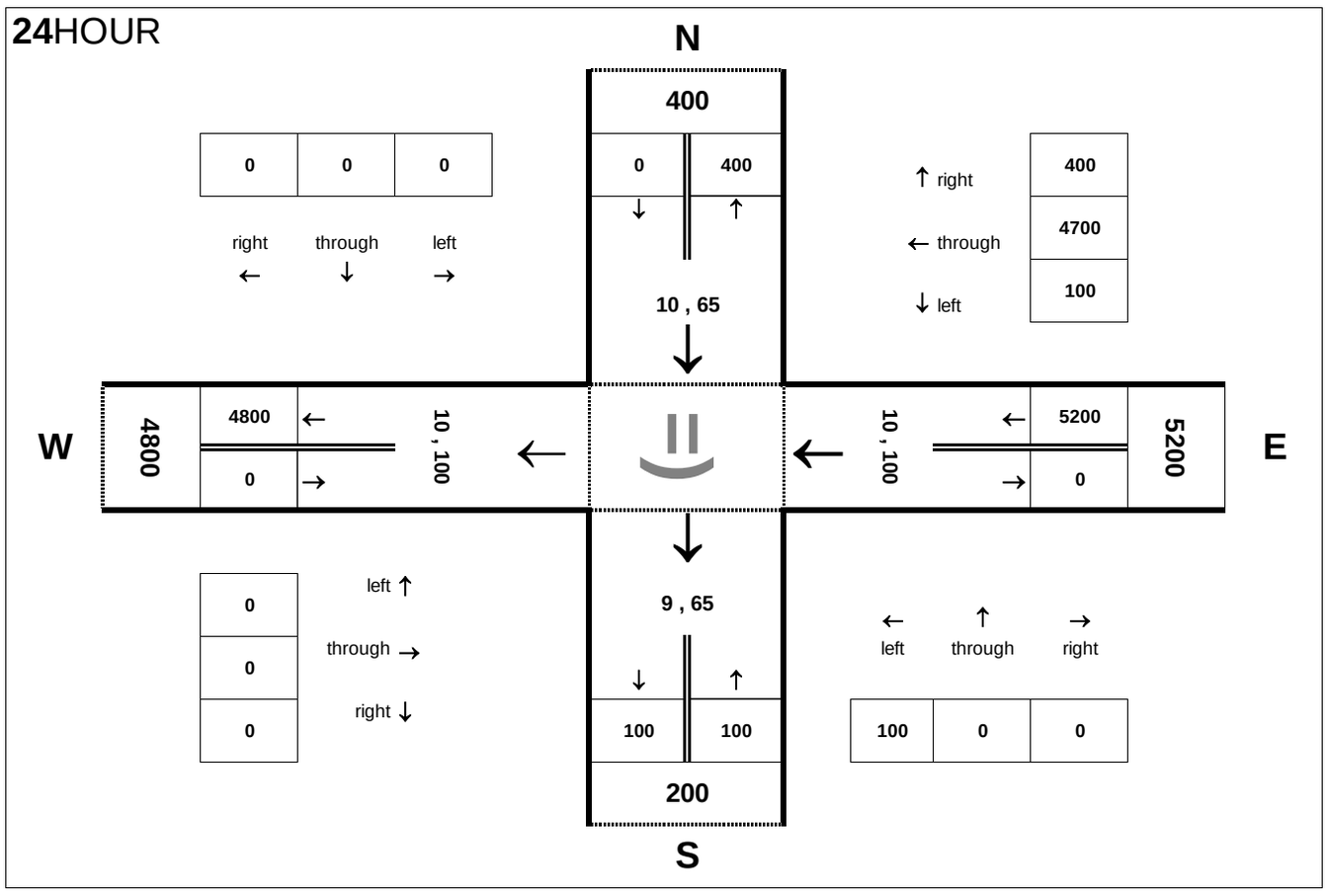


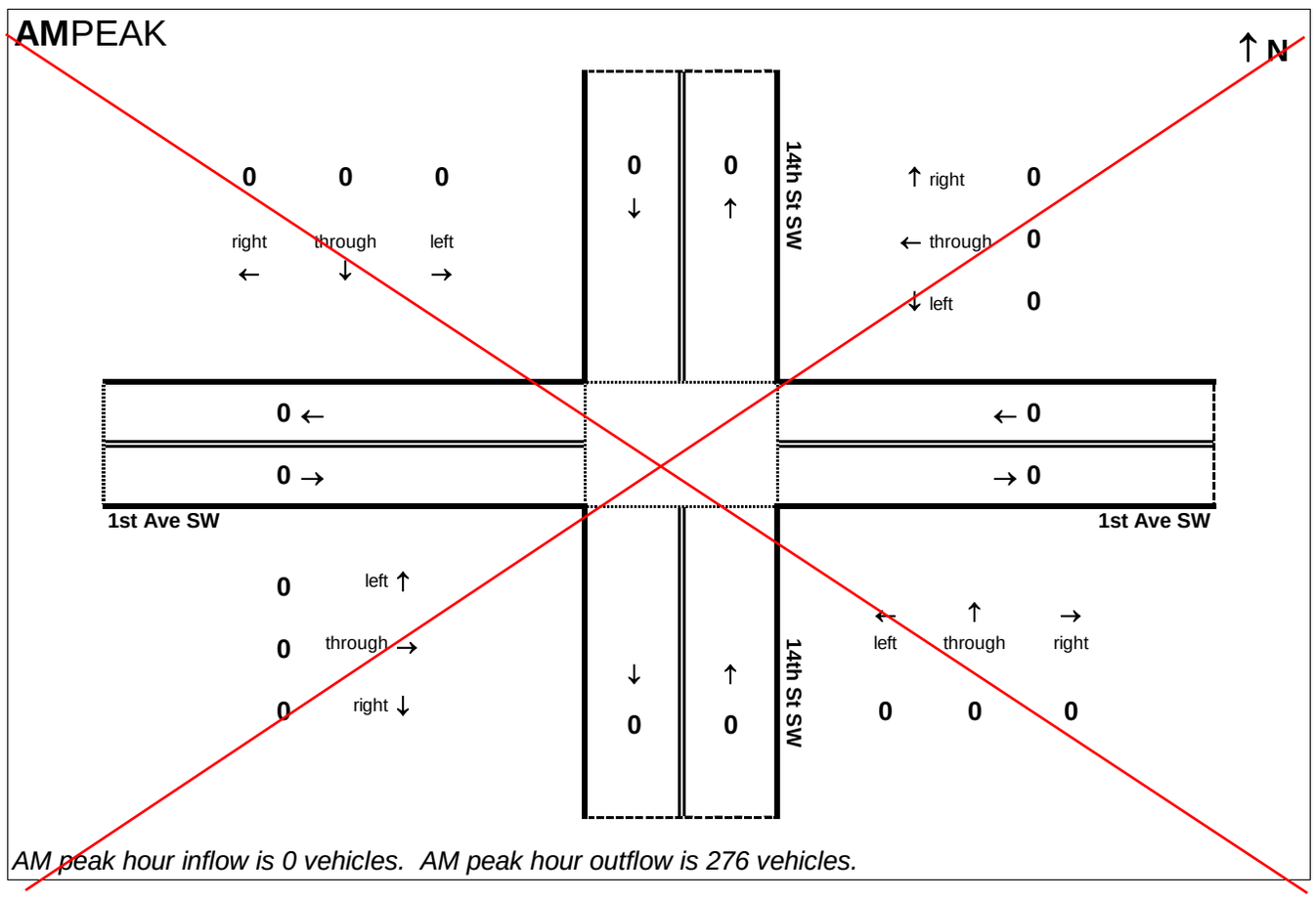




*AM peak hour inflow is 0 vehicles. AM peak hour outflow is 369 vehicles.*

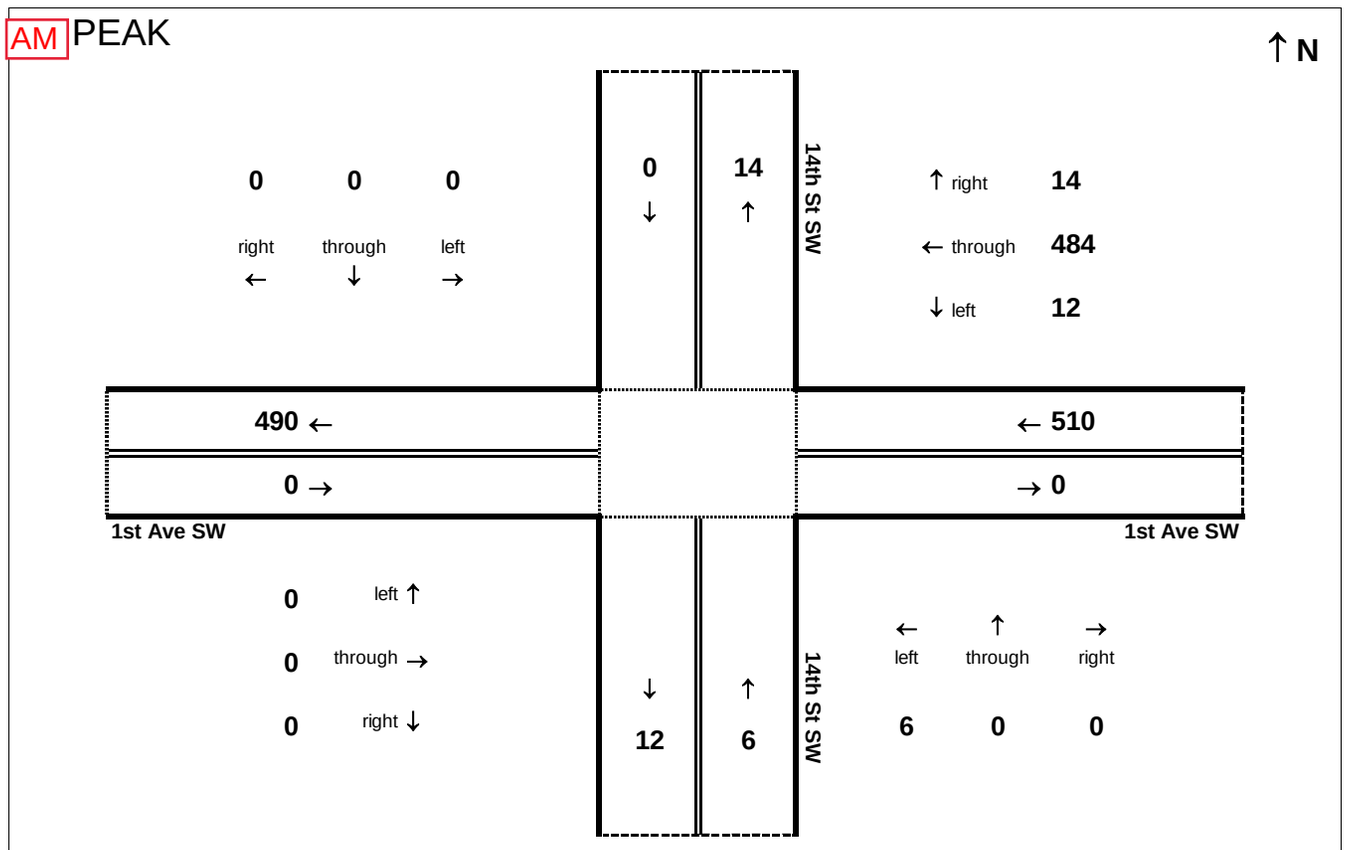



*PM peak hour inflow is 652 vehicles. PM peak hour outflow is 653 vehicles.*




*AM peak hour inflow is 0 vehicles. AM peak hour outflow is 276 vehicles.*




*PM peak hour inflow is 516 vehicles. PM peak hour outflow is 516 vehicles.*

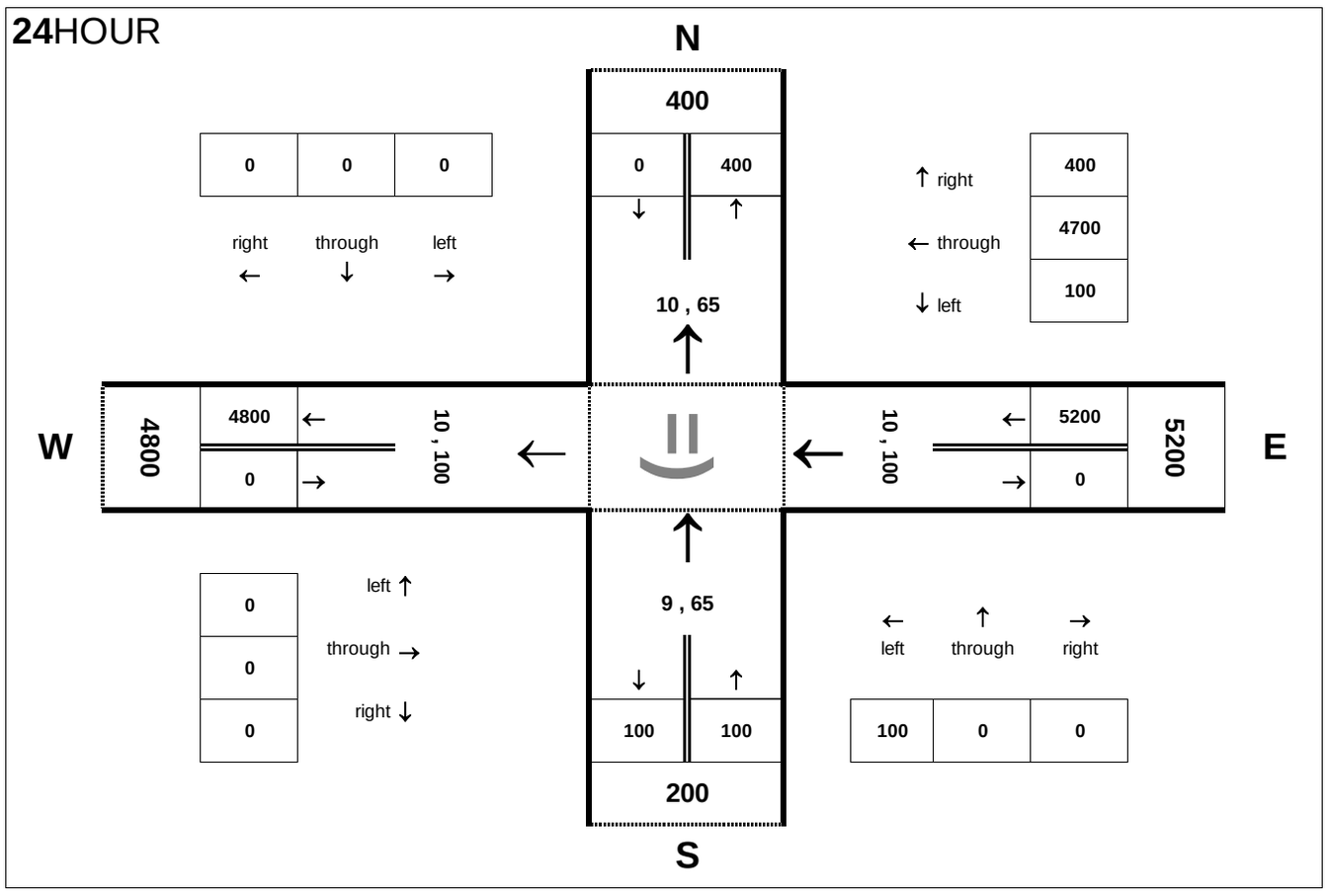
**Peak Hour Volume Breakouts Report:**
Intersection of 1st Ave SW and 14th St SW

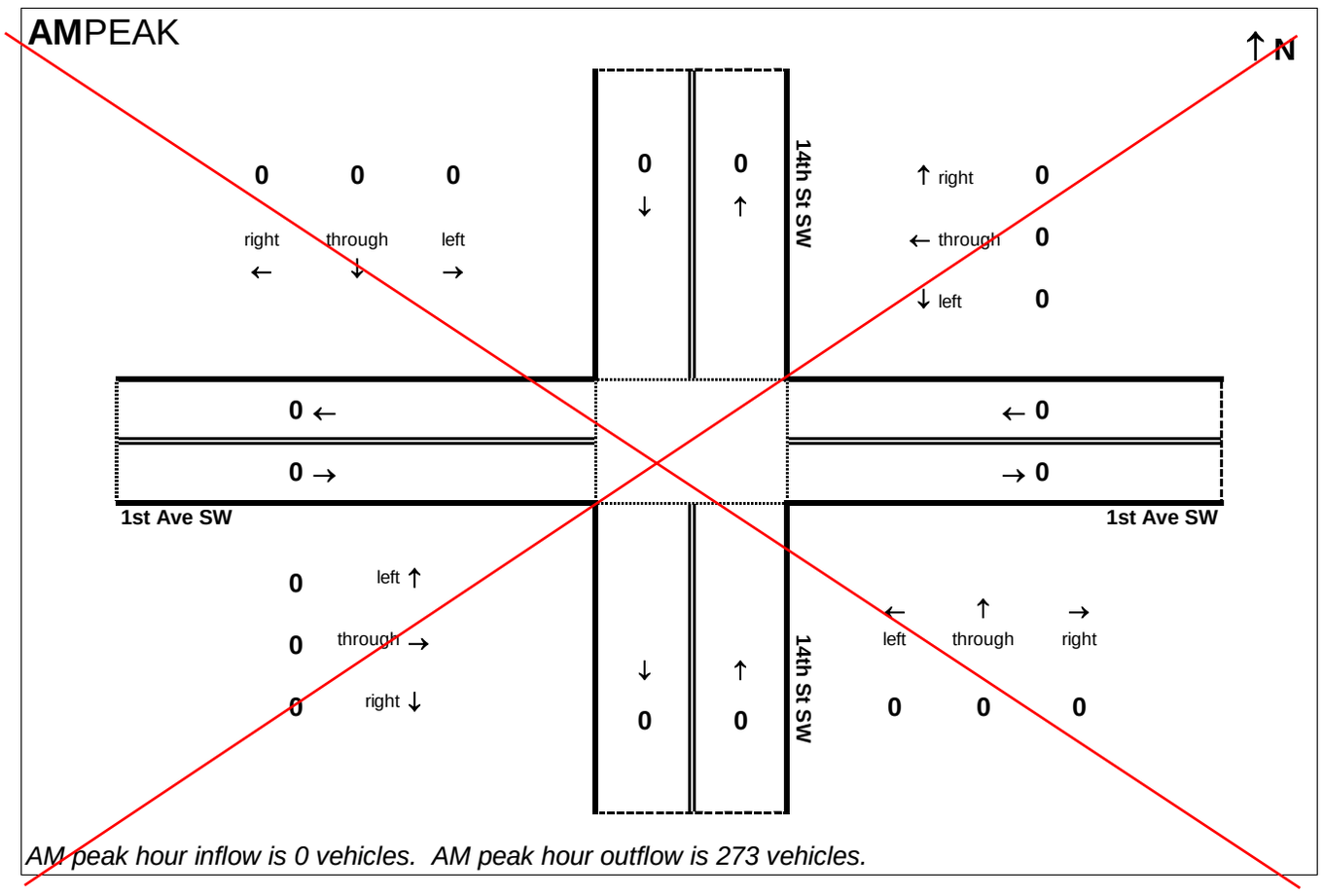
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 1

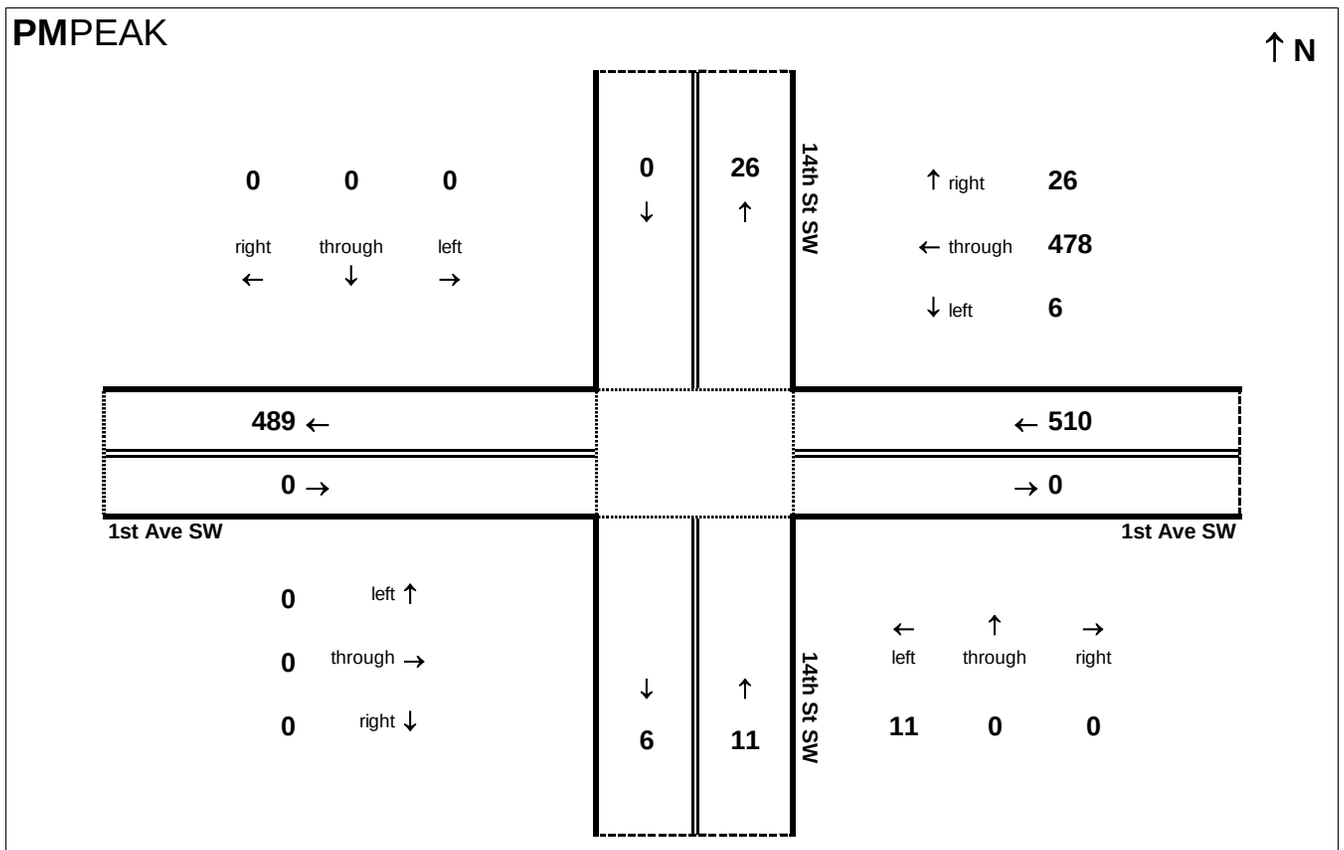
**Project:**
U-4700

Note: In order to use the spreadsheet program, and use the 100% directional in the AM on the one-way street(s), the input directionals for the two way moves were reversed, and the pm output data was used for the am.




*AM peak hour inflow is 0 vehicles. AM peak hour outflow is 273 vehicles.*



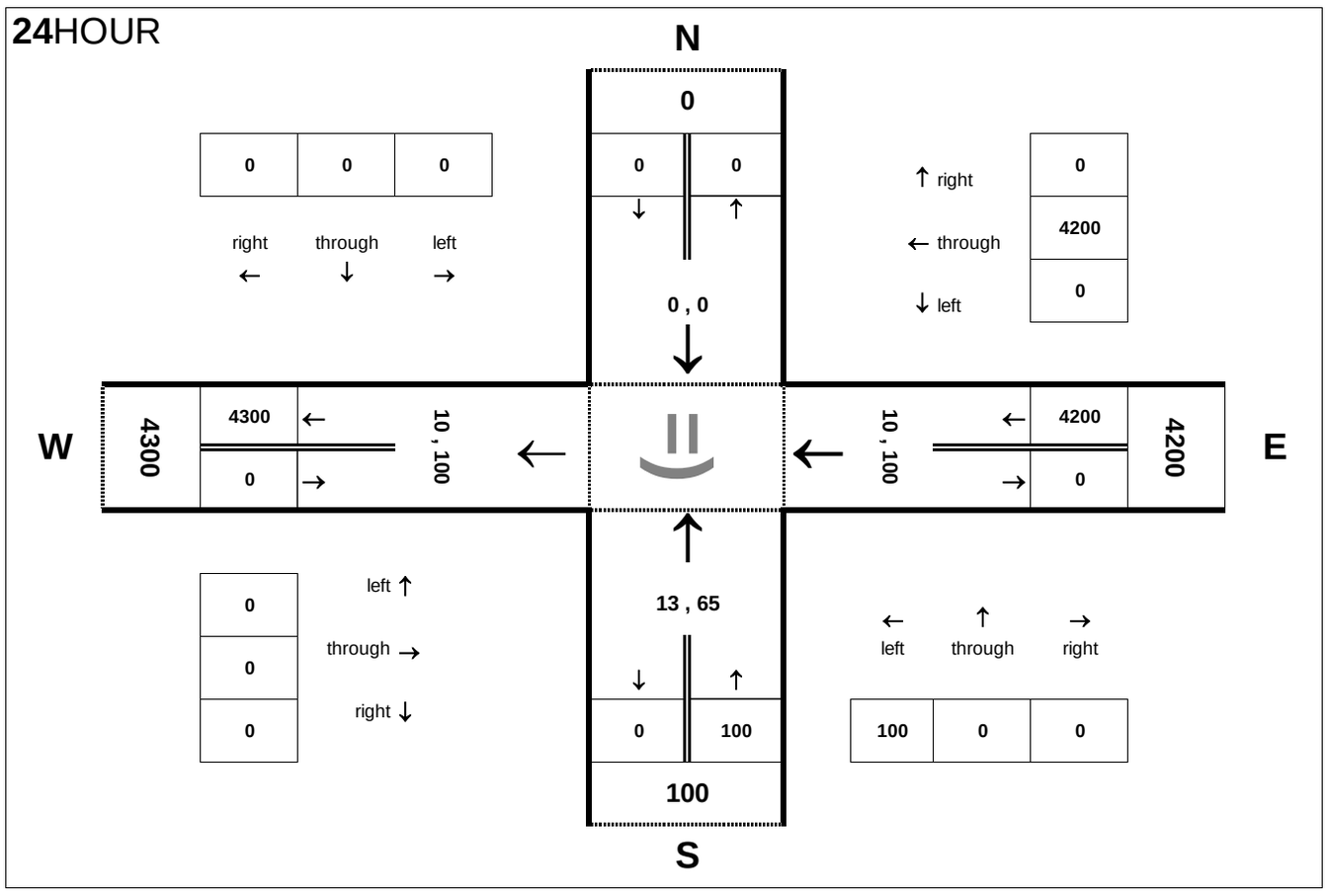

*PM peak hour inflow is 522 vehicles. PM peak hour outflow is 521 vehicles.*

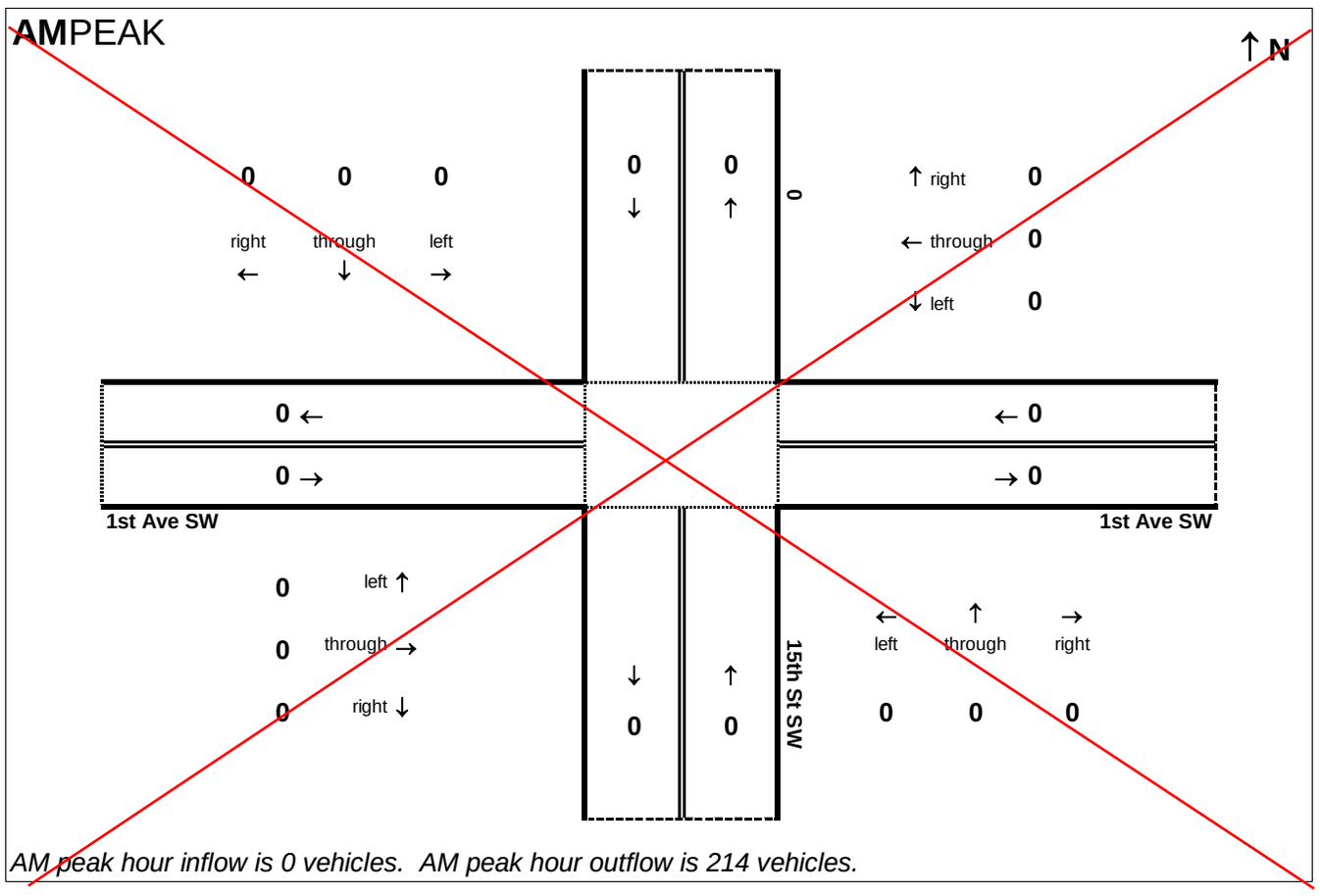
**Peak Hour Volume Breakouts Report:**
Intersection of 1st Ave SW and 14th St SW

**Traffic Forecast Release Date:**
December-16

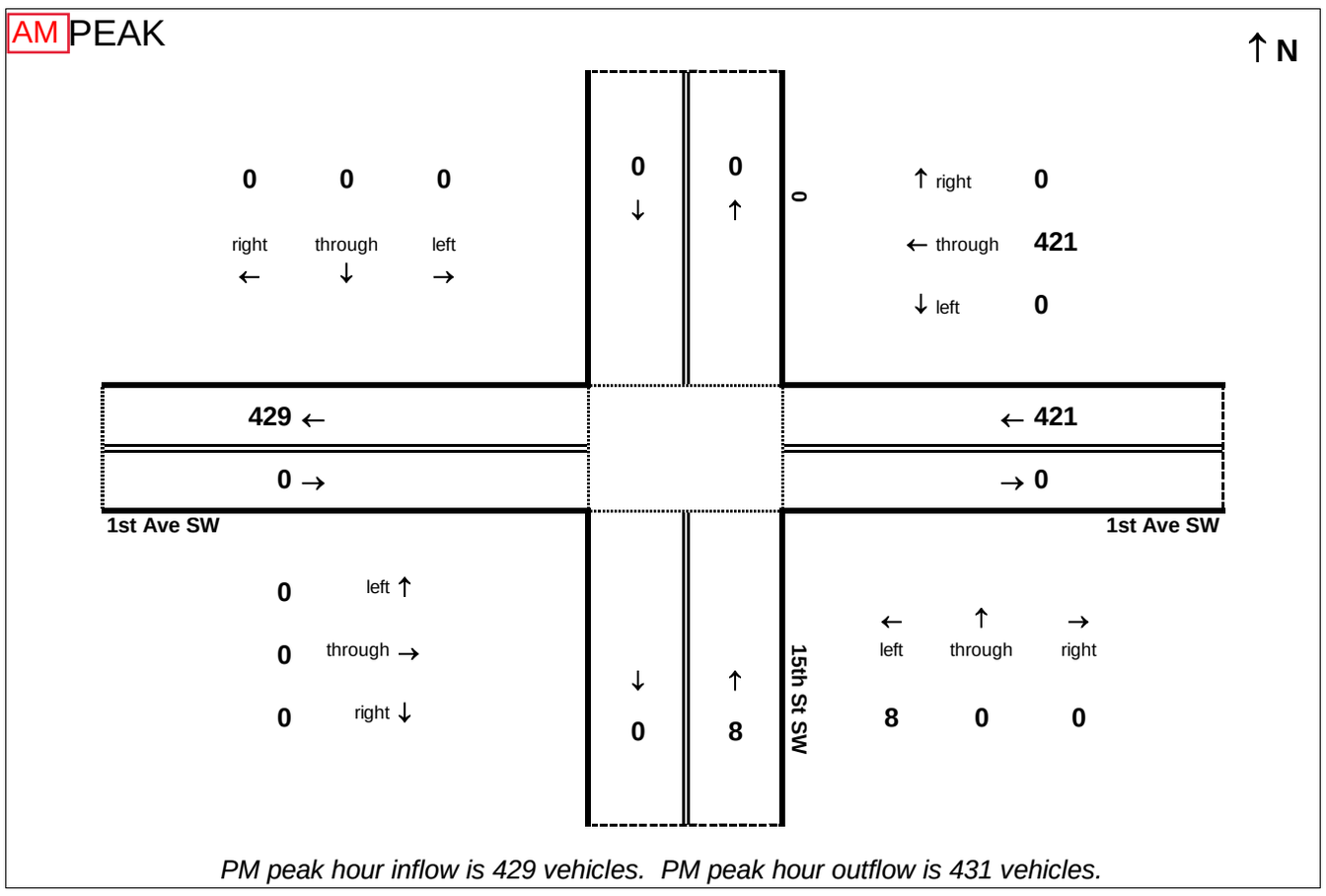
**Traffic Data Year:**
2040 Build 1

**Project:**
U-4700




*AM peak hour inflow is 0 vehicles. AM peak hour outflow is 214 vehicles.*




*PM peak hour inflow is 429 vehicles. PM peak hour outflow is 431 vehicles.*

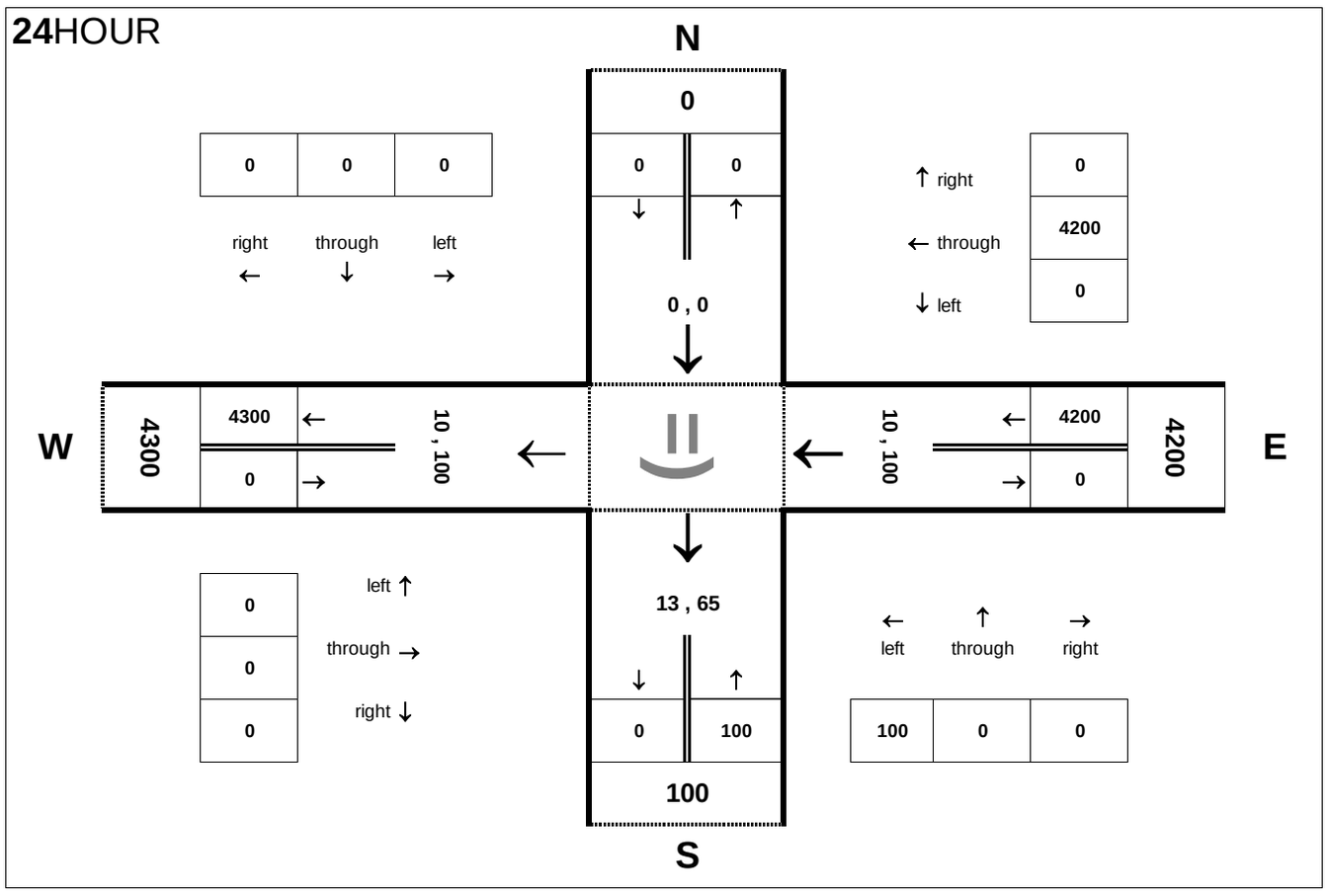
**Peak Hour Volume Breakouts Report:**
Intersection of 1st Ave SW and 15th St SW

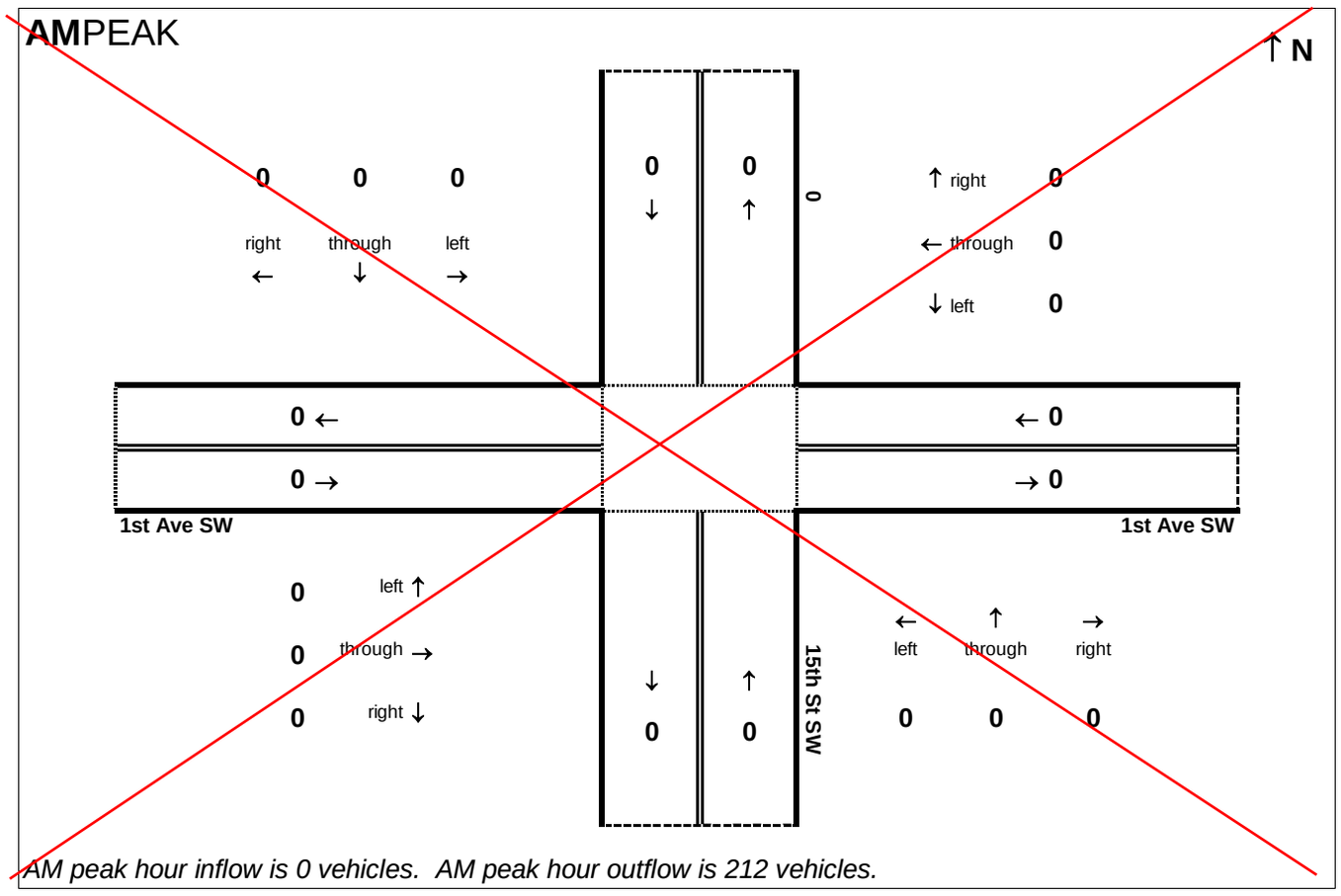
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 1

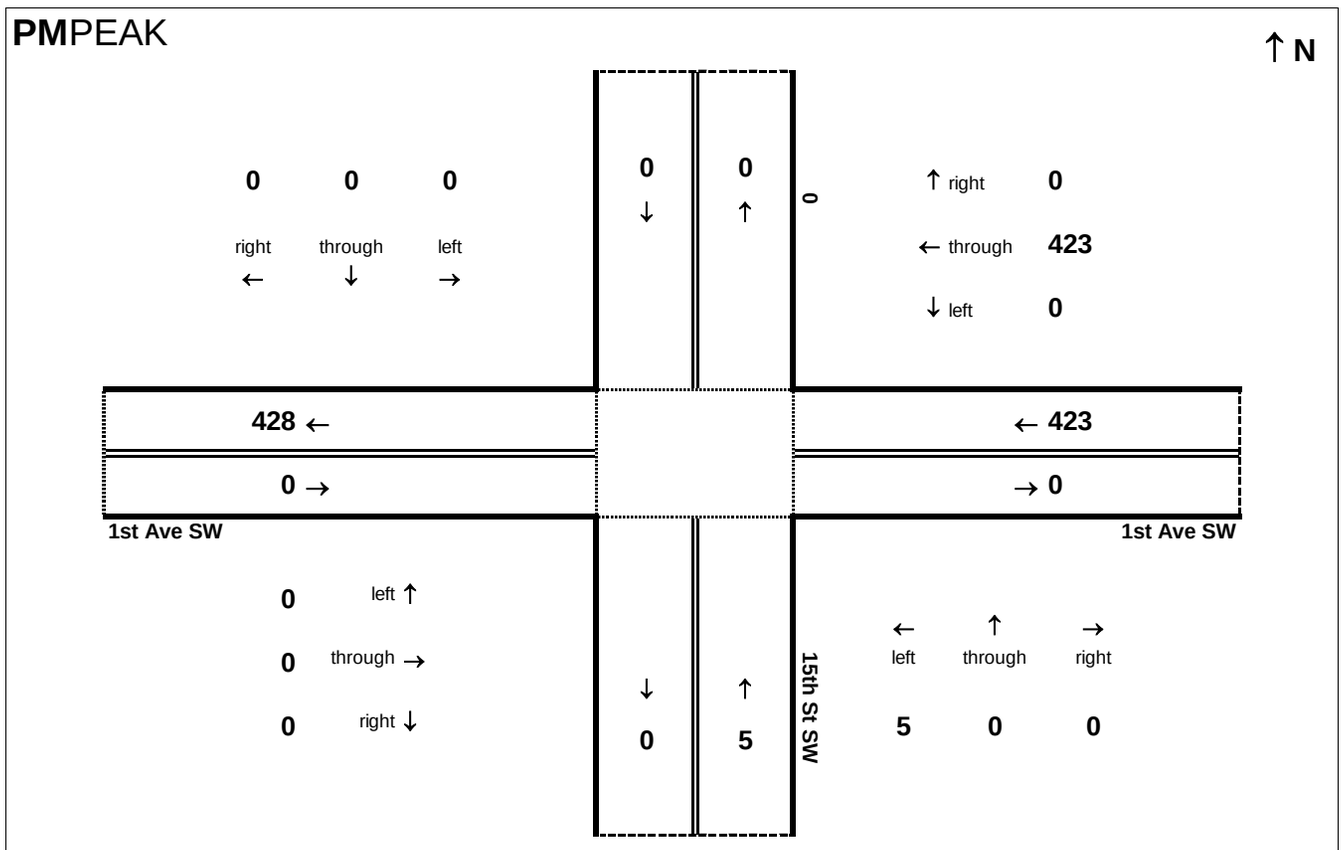
**Project:**
U-4700

Note: In order to use the spreadsheet program, and use the 100% directional in the AM on the one-way street(s), the input directionals for the two way moves were reversed, and the pm output data was used for the am.




*AM peak hour inflow is 0 vehicles. AM peak hour outflow is 212 vehicles.*



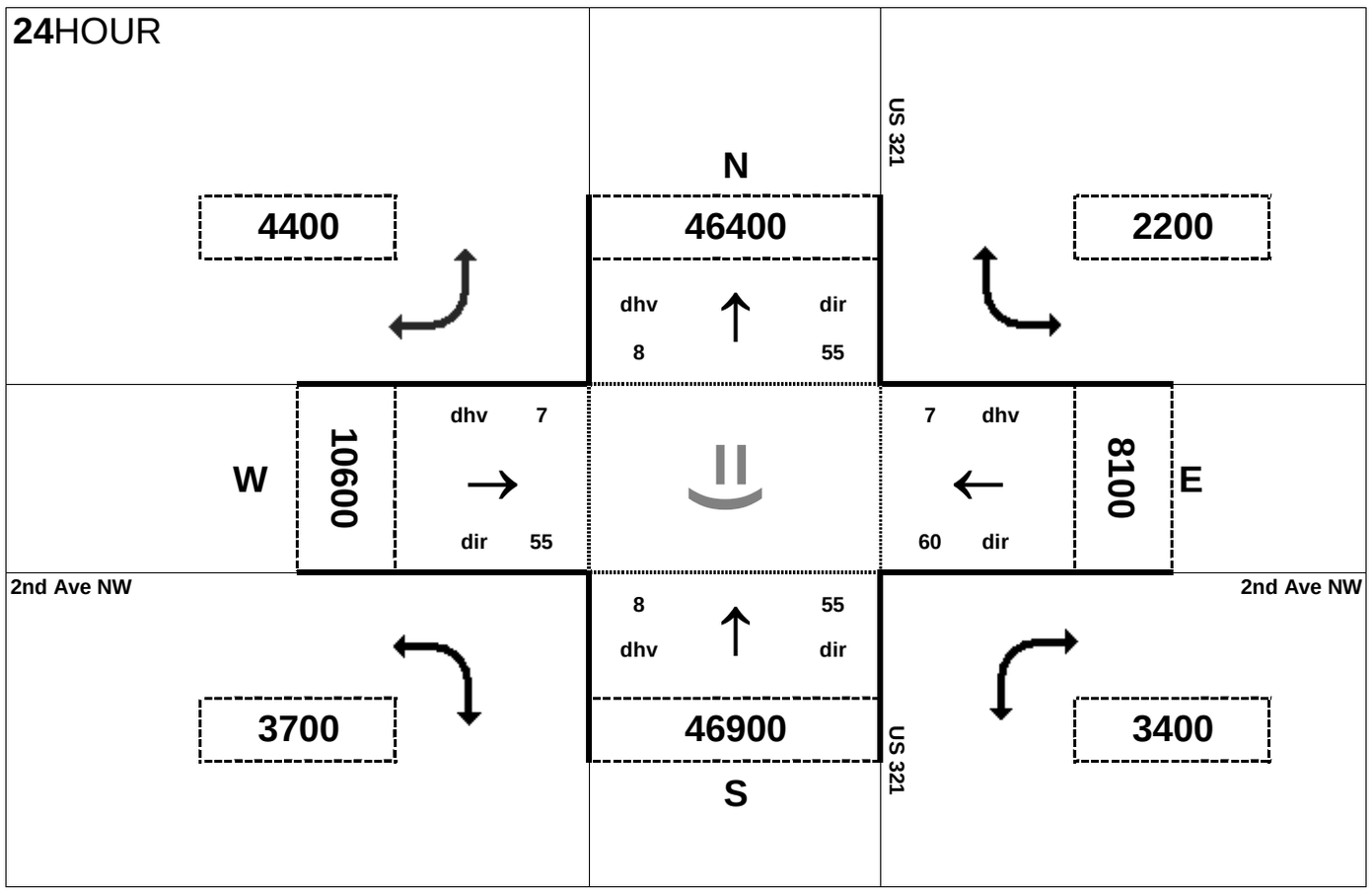

*PM peak hour inflow is 428 vehicles. PM peak hour outflow is 431 vehicles.*

**Peak Hour Volume Breakouts Report:**
Intersection of 1st Ave SW and 15th St SW

**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 1

**Project:**
U-4700

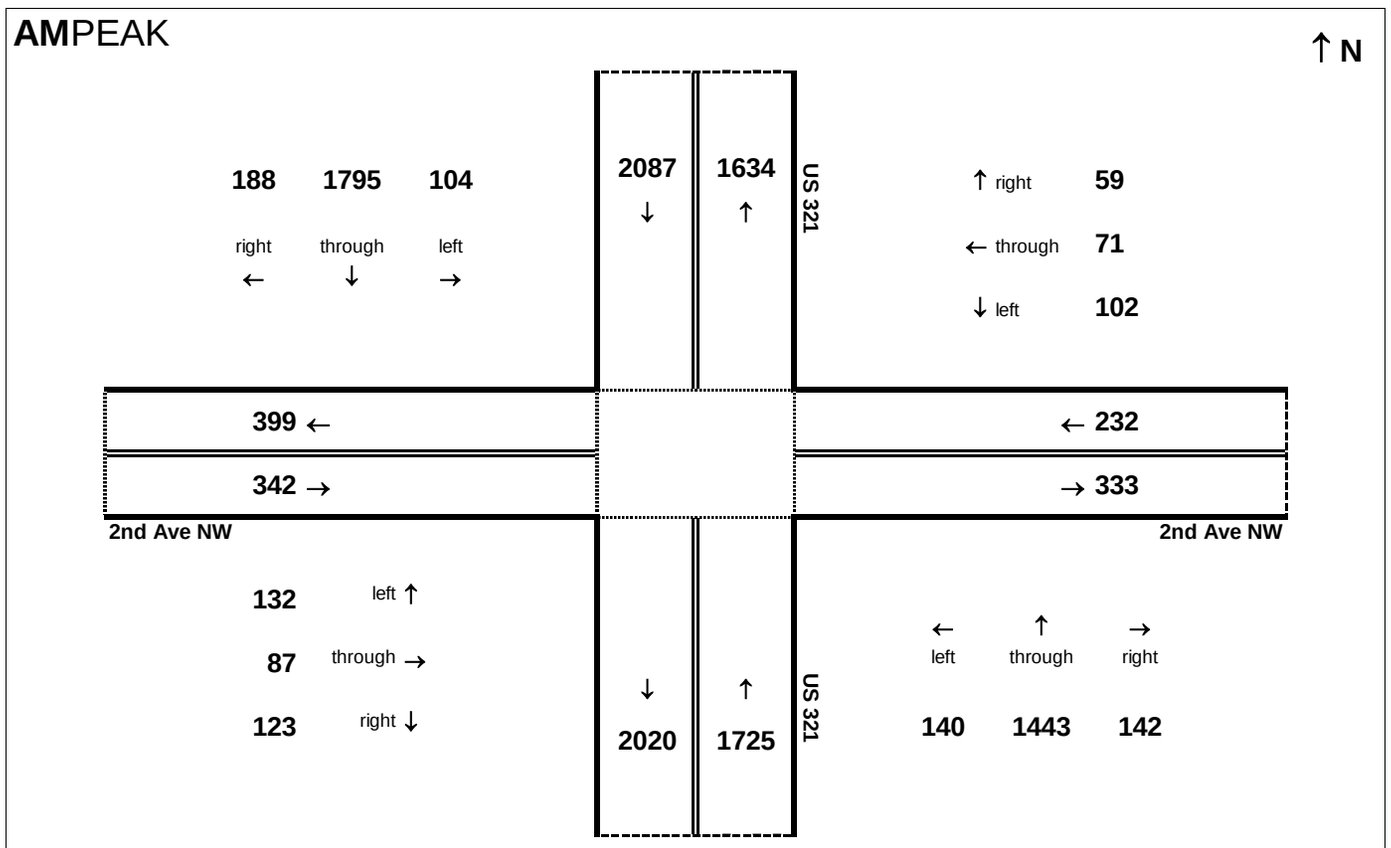



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and 2nd Ave NW (SR 1306)

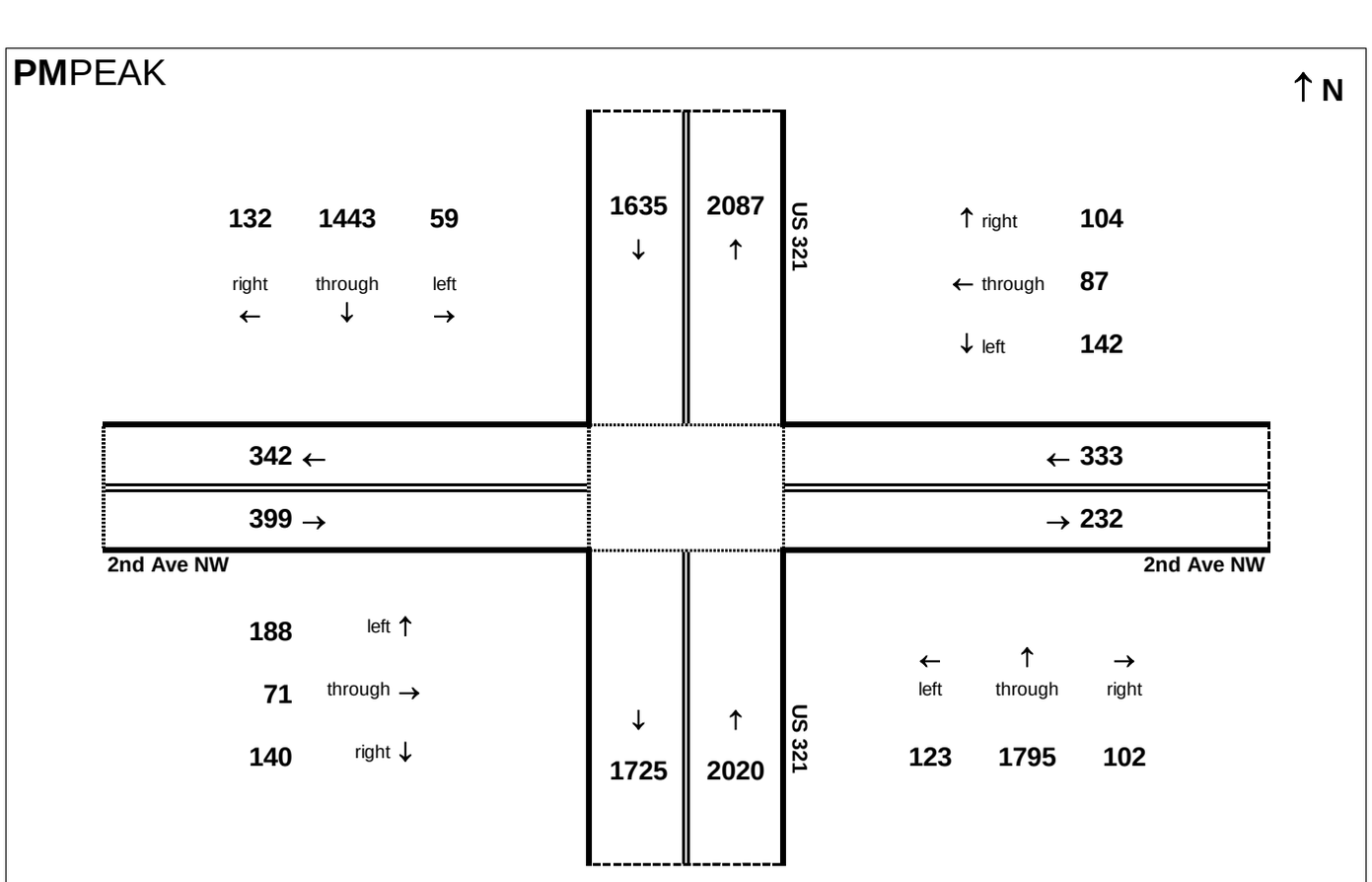
**Traffic Forecast Release Date:**
February-17

**Traffic Data Year:**
2040 Build 1

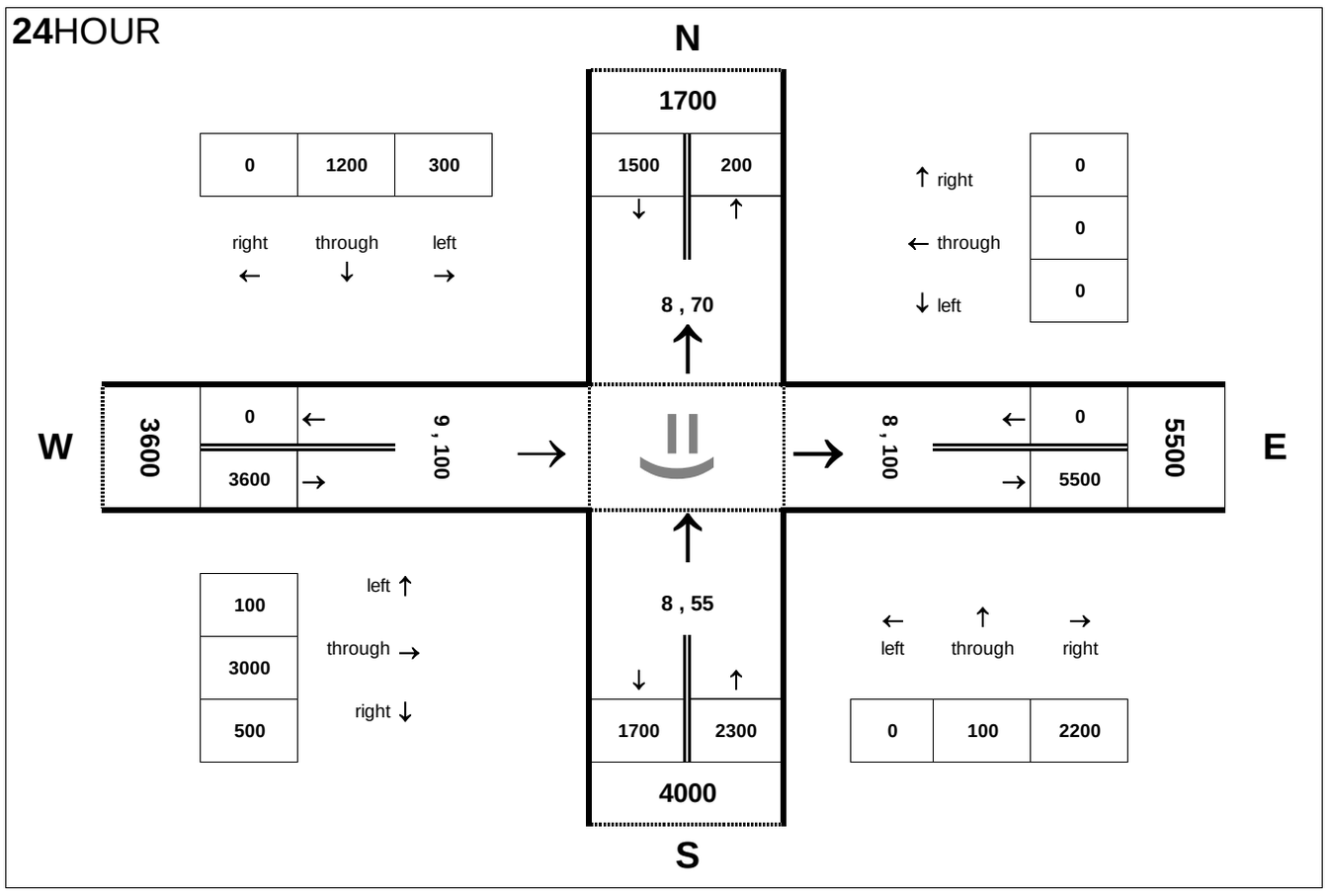
**Project:**
U-4700

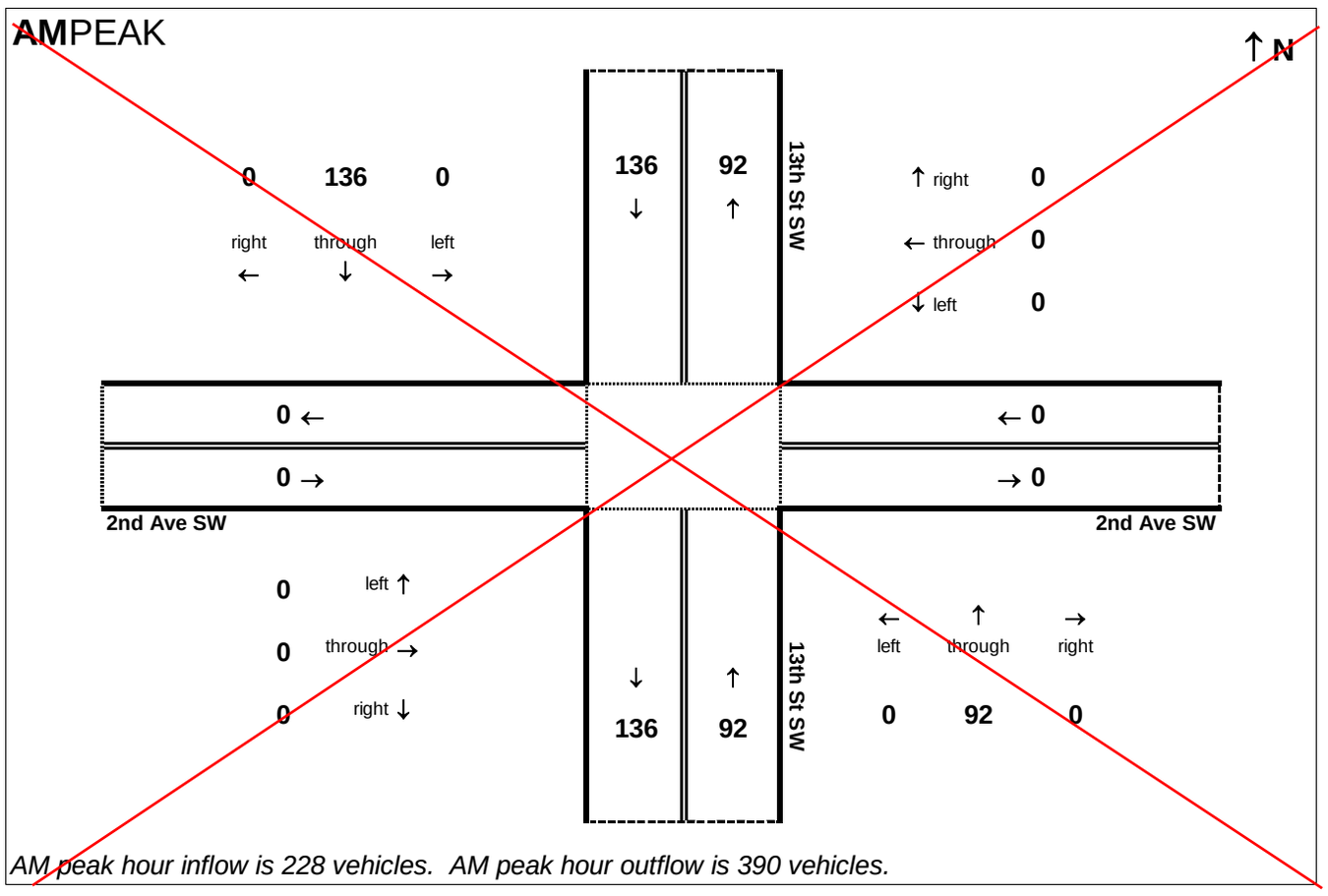



*AM peak hour inflow is 4386 vehicles. AM peak hour outflow is 4386 vehicles.*

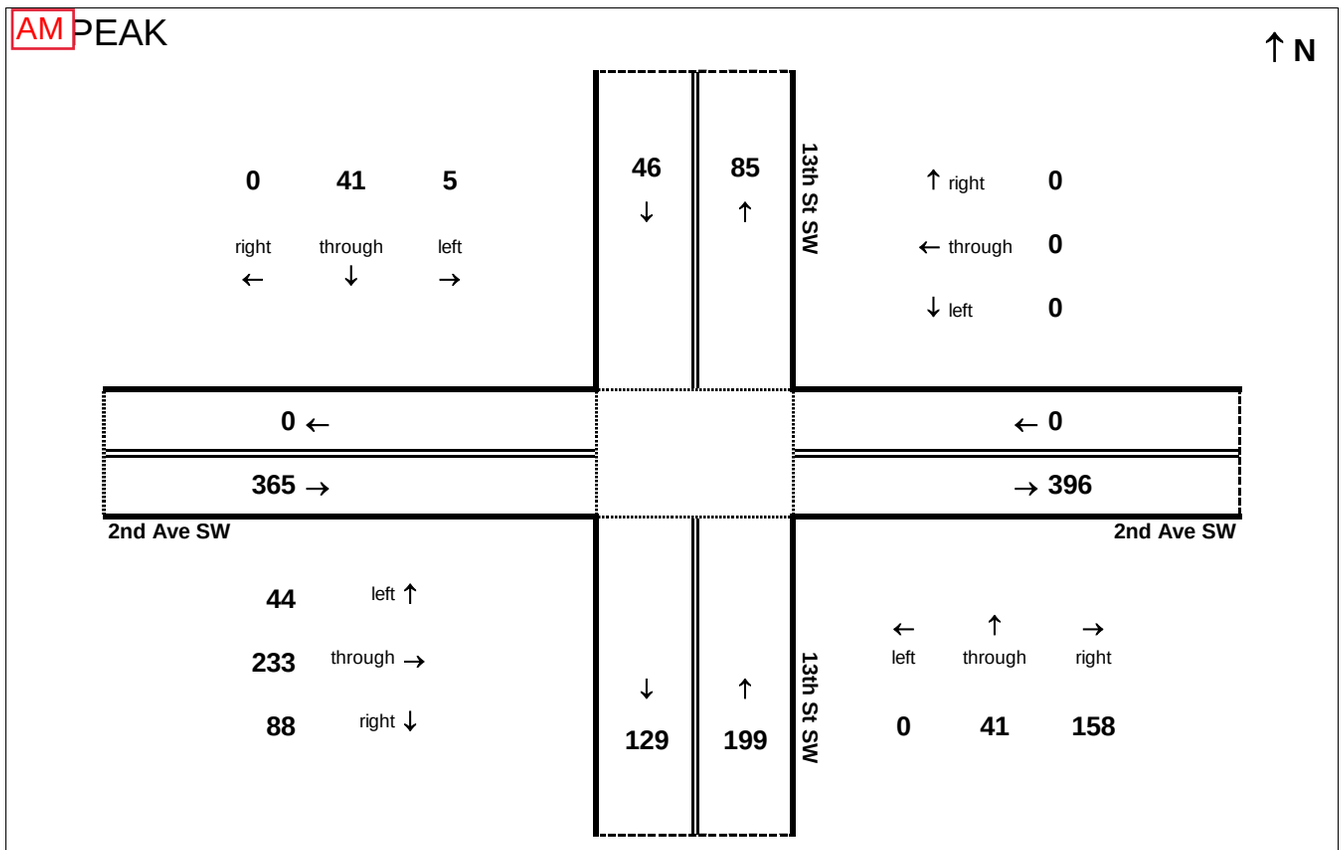



*PM peak hour inflow is 4386 vehicles. PM peak hour outflow is 4386 vehicles.*




*AM peak hour inflow is 228 vehicles. AM peak hour outflow is 390 vehicles.*




*PM peak hour inflow is 610 vehicles. PM peak hour outflow is 610 vehicles.*

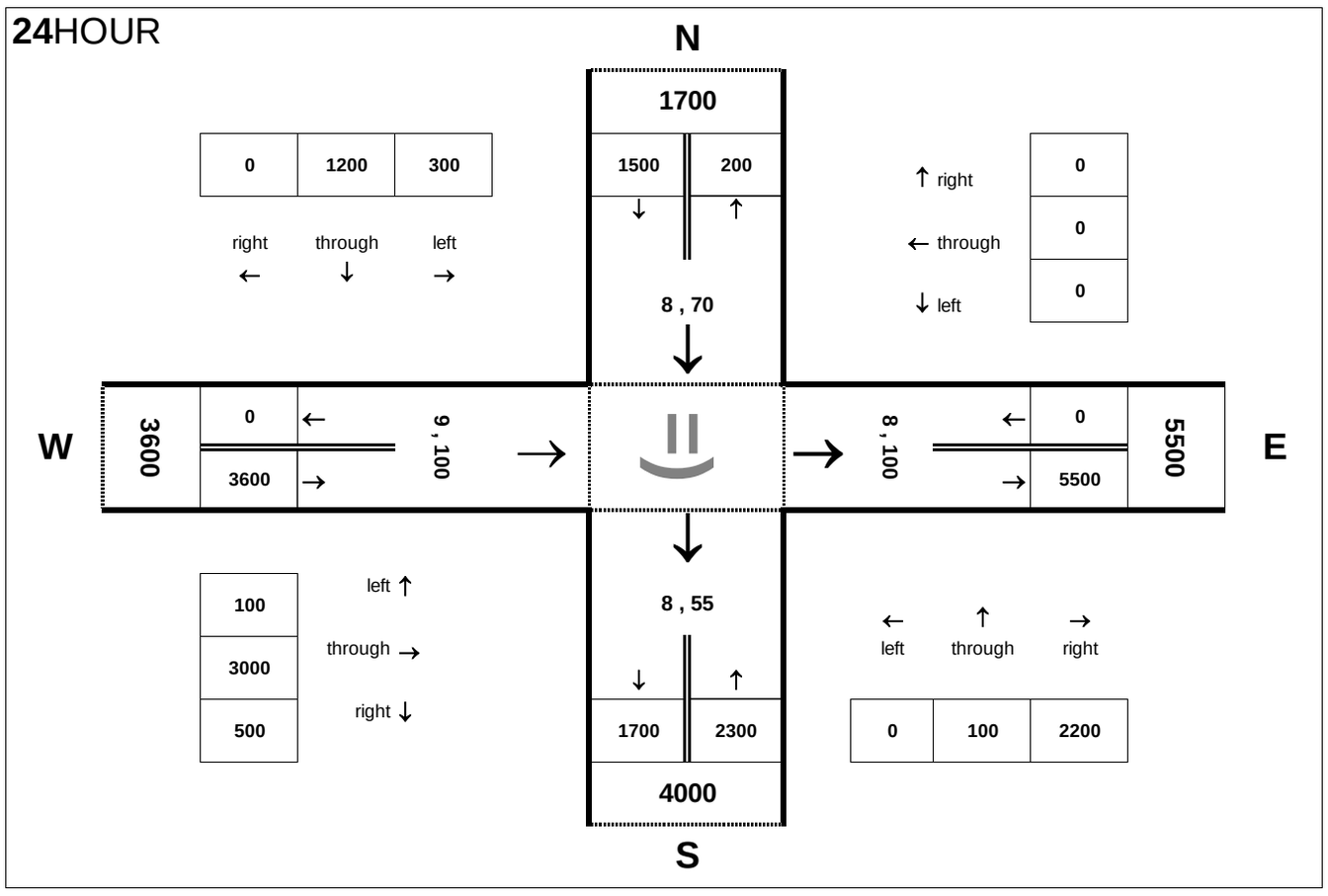
**Peak Hour Volume Breakouts Report:**
Intersection of 2nd Ave SW and 13th St SW

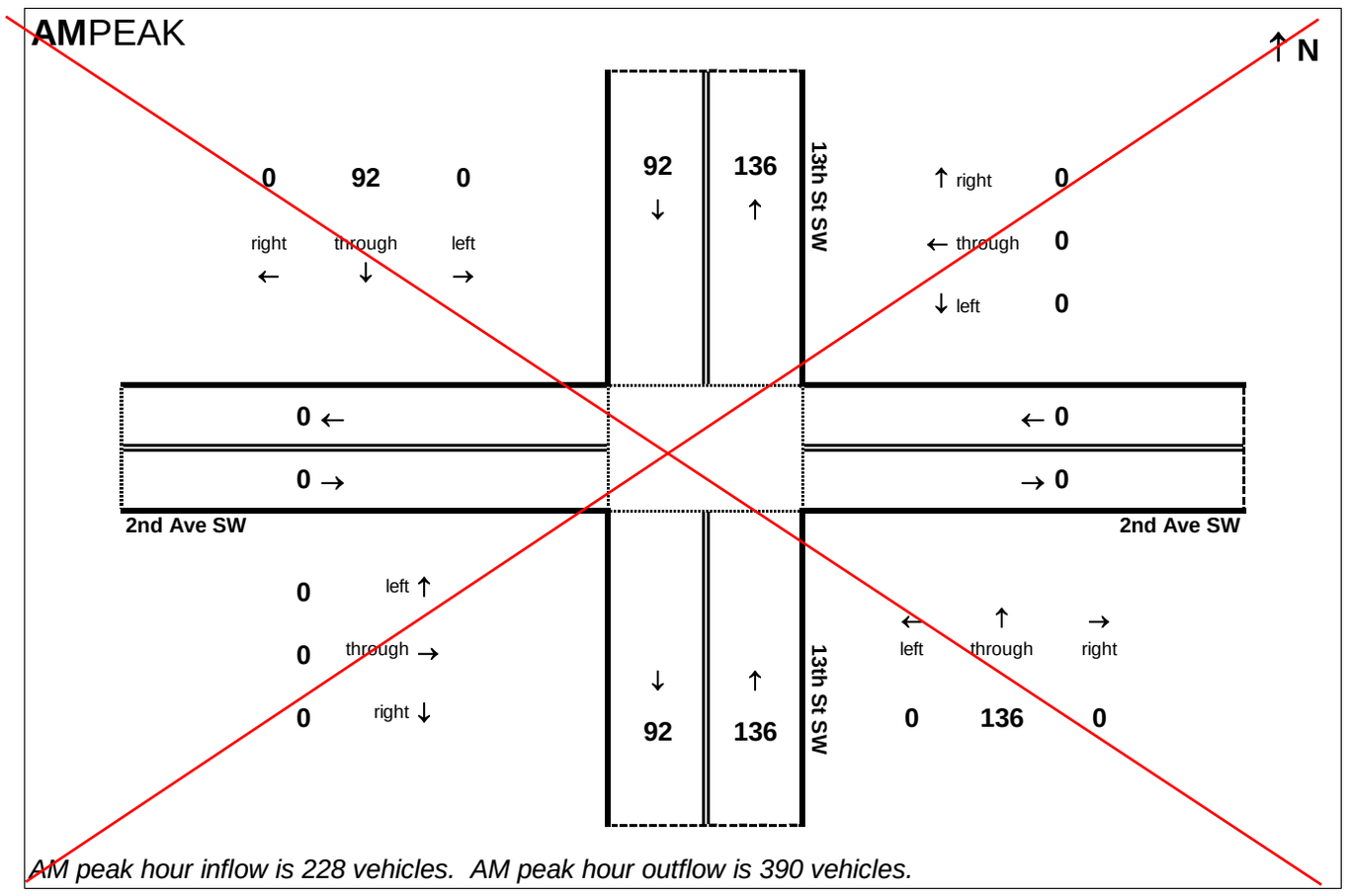
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 1

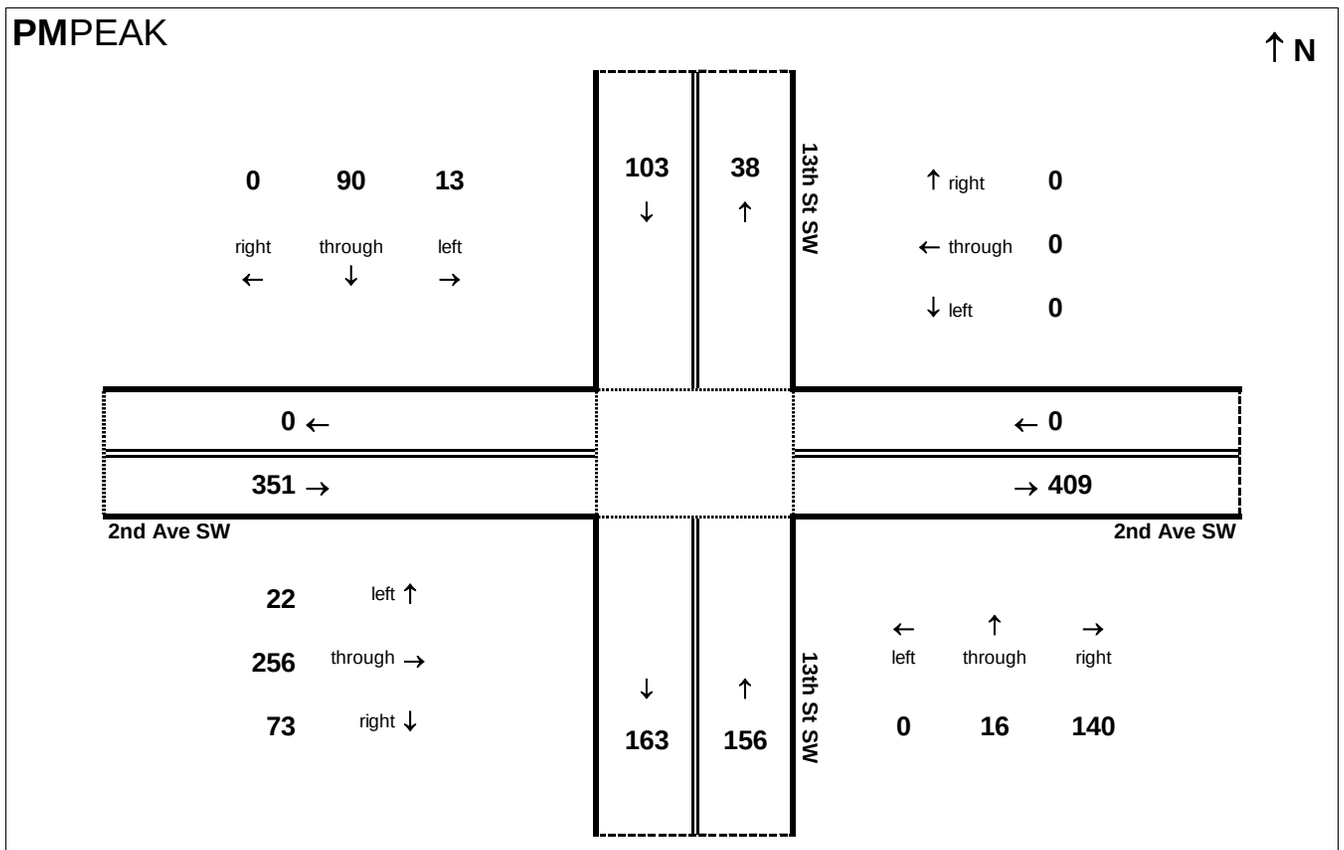
**Project:**
U-4700

Note: In order to use the spreadsheet program, and use the 100% directional in the AM on the one-way street(s), the input directionals for the two way moves were reversed, and the pm output data was used for the am.




*AM peak hour inflow is 228 vehicles. AM peak hour outflow is 390 vehicles.*



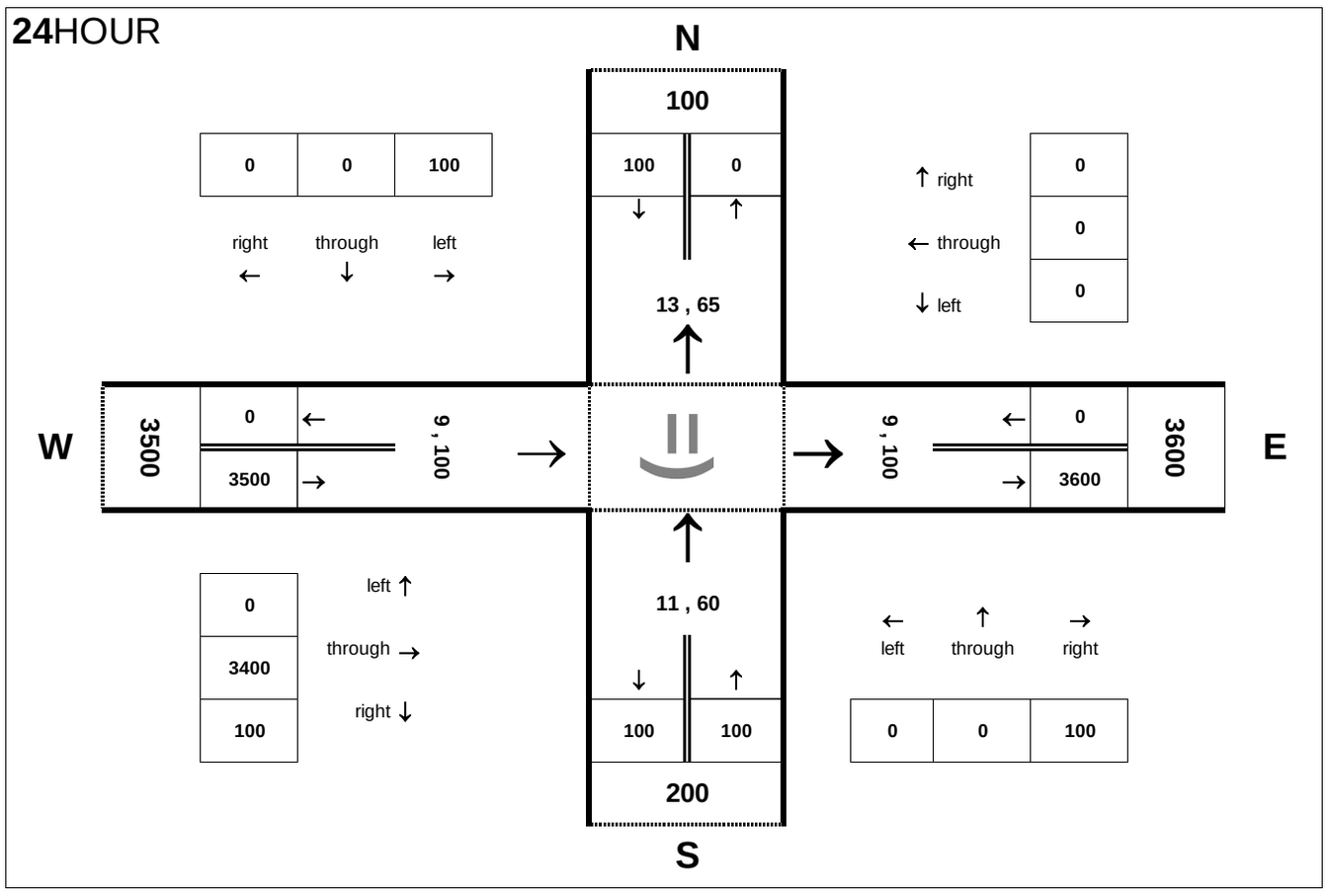

*PM peak hour inflow is 610 vehicles. PM peak hour outflow is 610 vehicles.*

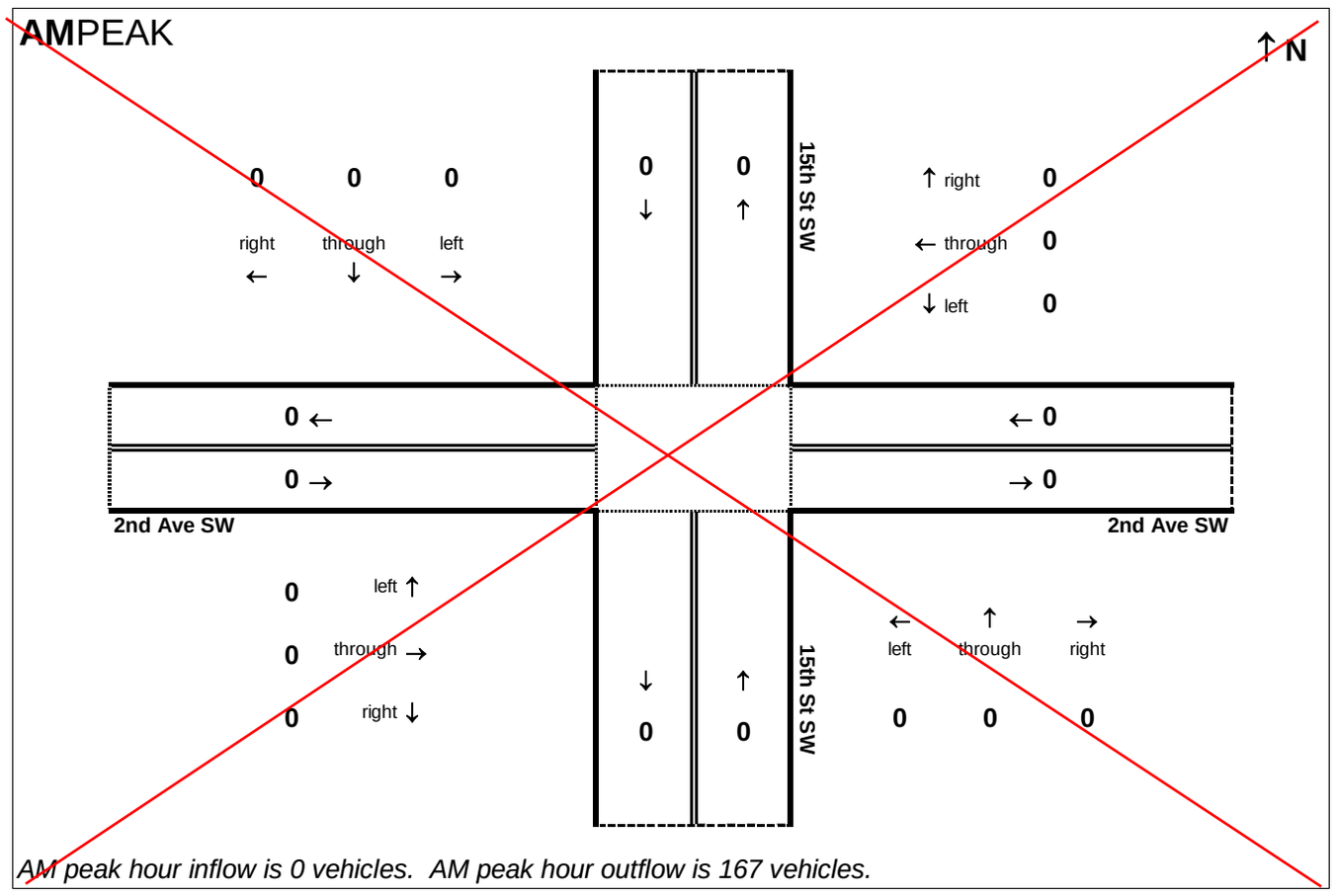
**Peak Hour Volume Breakouts Report:**
Intersection of 2nd Ave SW and 13th St SW

**Traffic Forecast Release Date:**
December-16

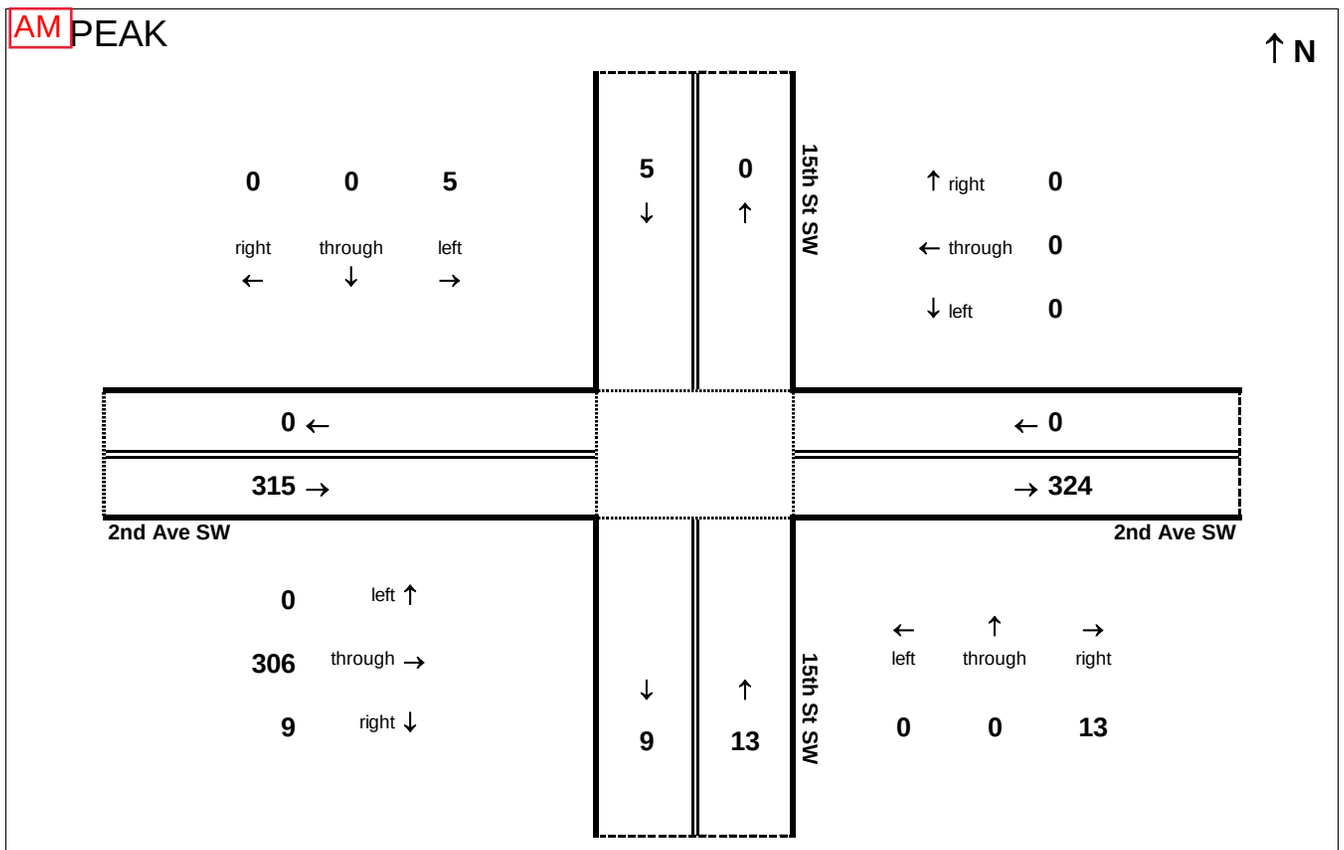
**Traffic Data Year:**
2040 Build 1

**Project:**
U-4700




*AM peak hour inflow is 0 vehicles. AM peak hour outflow is 167 vehicles.*




*PM peak hour inflow is 333 vehicles. PM peak hour outflow is 337 vehicles.*

**Peak Hour Volume Breakouts Report:**
Intersection of 2nd Ave SW and 15th St SW

**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 1

**Project:**
U-4700

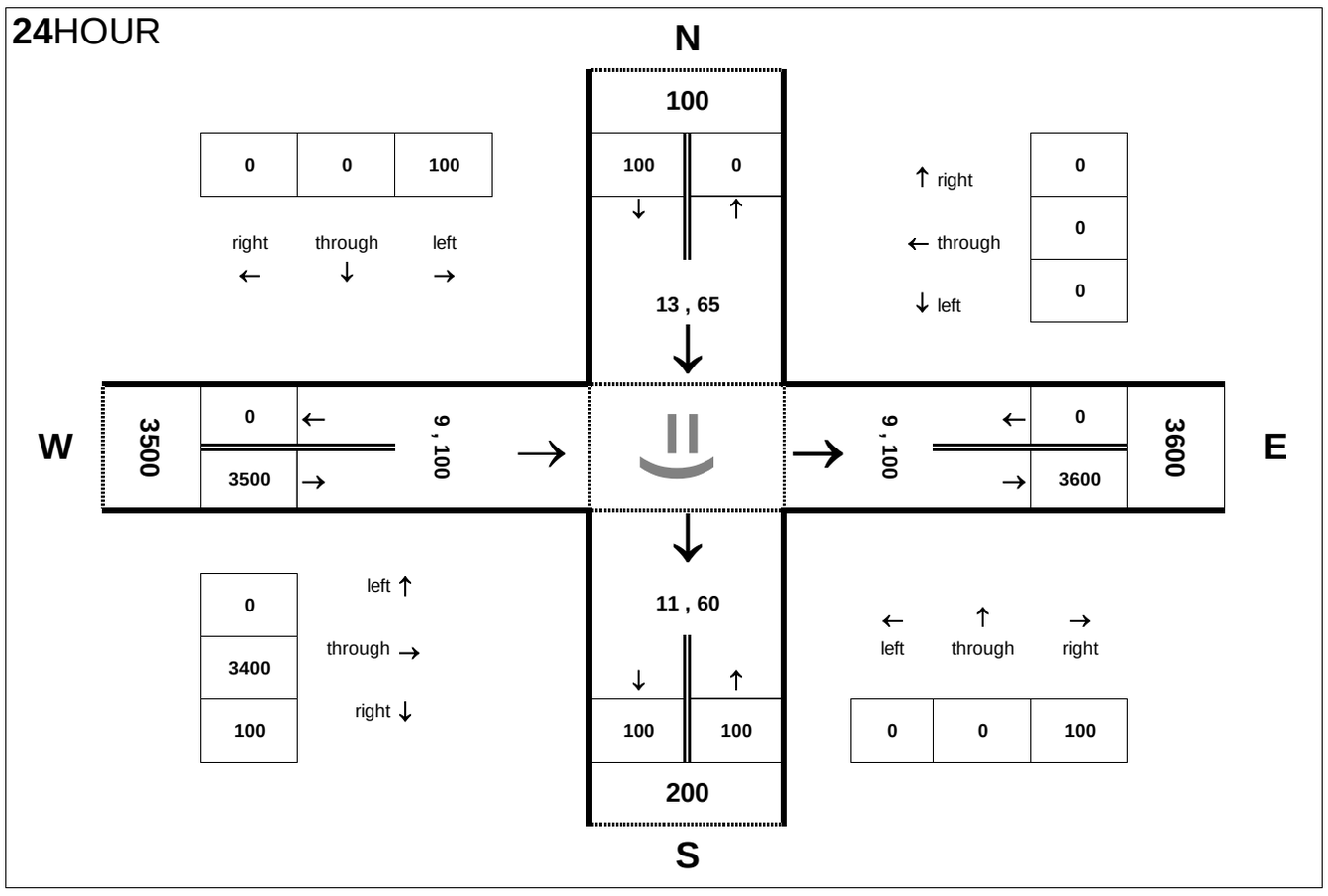
Note: In order to use the spreadsheet program, and use the 100% directional in the AM on the one-way street(s), the input directionals for the two way moves were reversed, and the pm output data was used for the am.

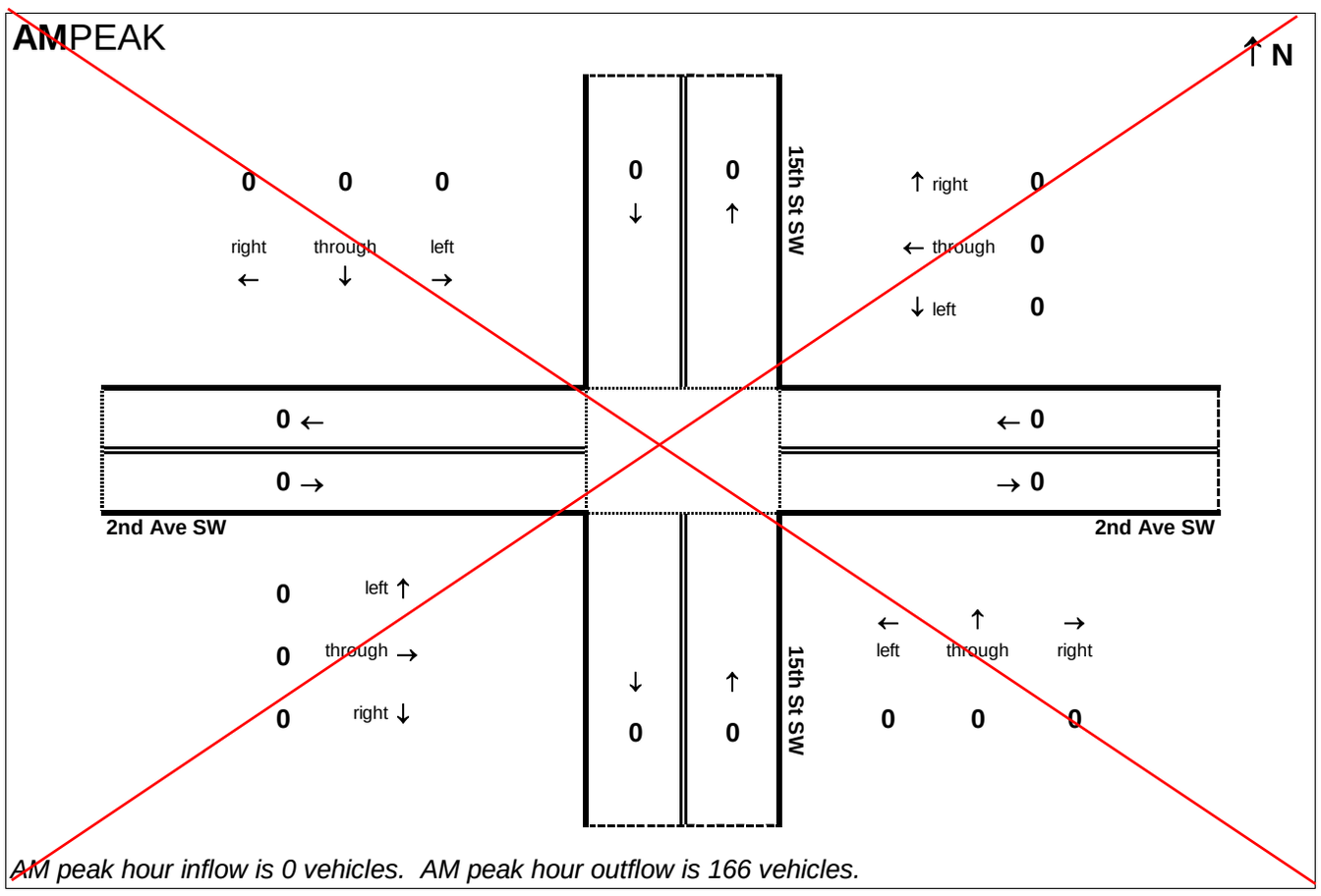
**Peak Hour Volume Breakouts Report:**
Intersection of 2nd Ave SW and 15th St SW

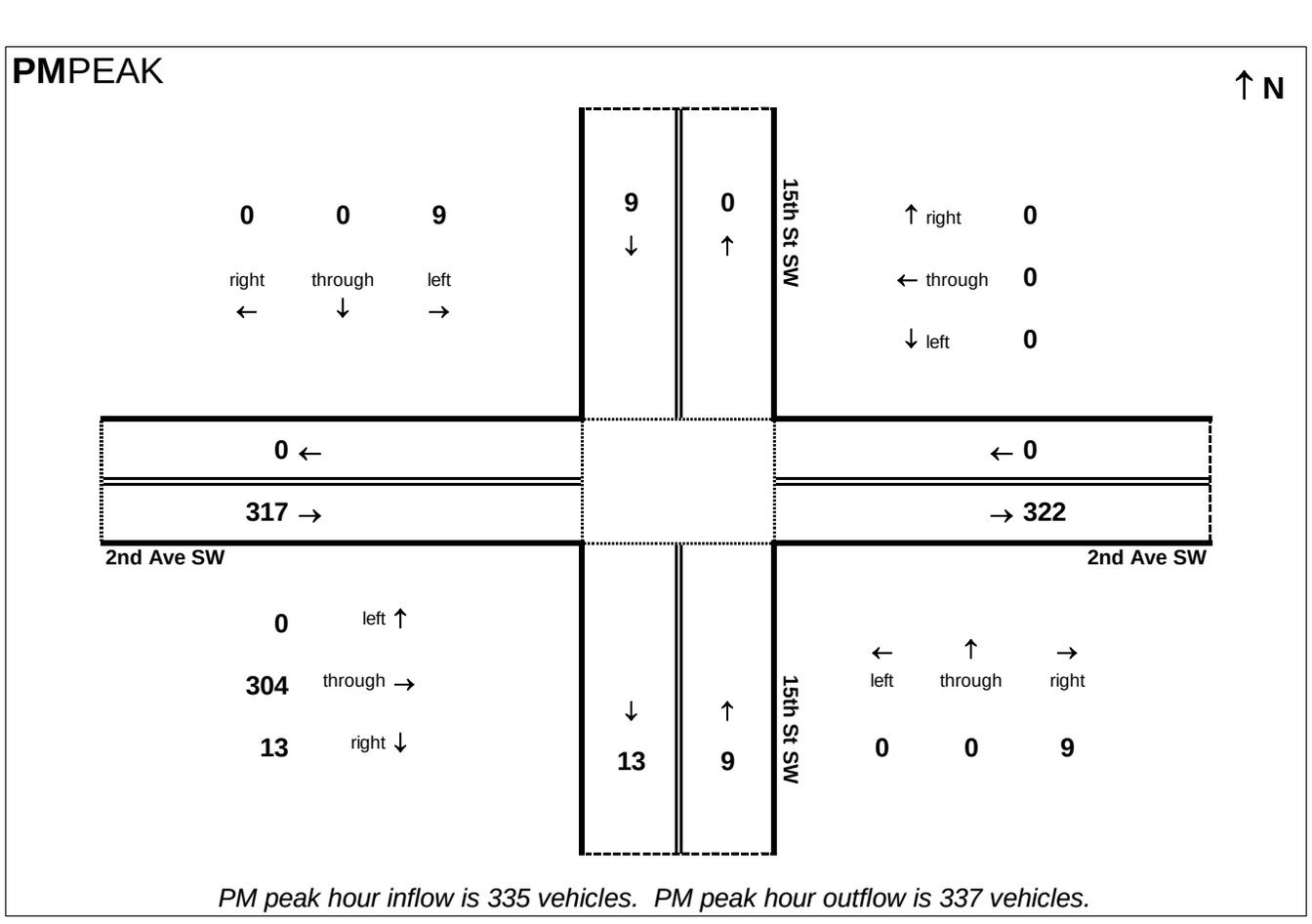
**Traffic Forecast Release Date:**
December-16

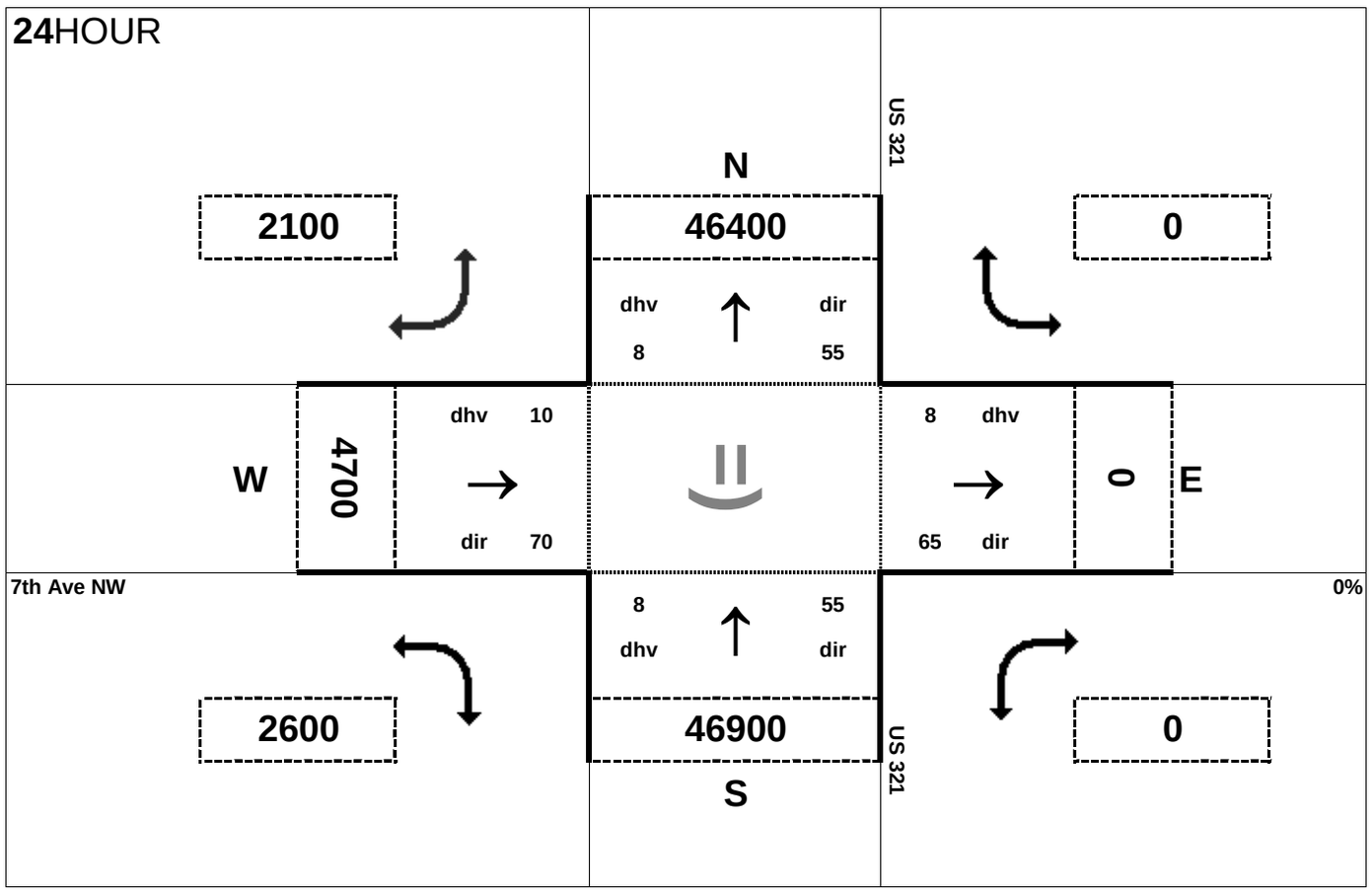
**Traffic Data Year:**
2040 Build 1

**Project:**
U-4700



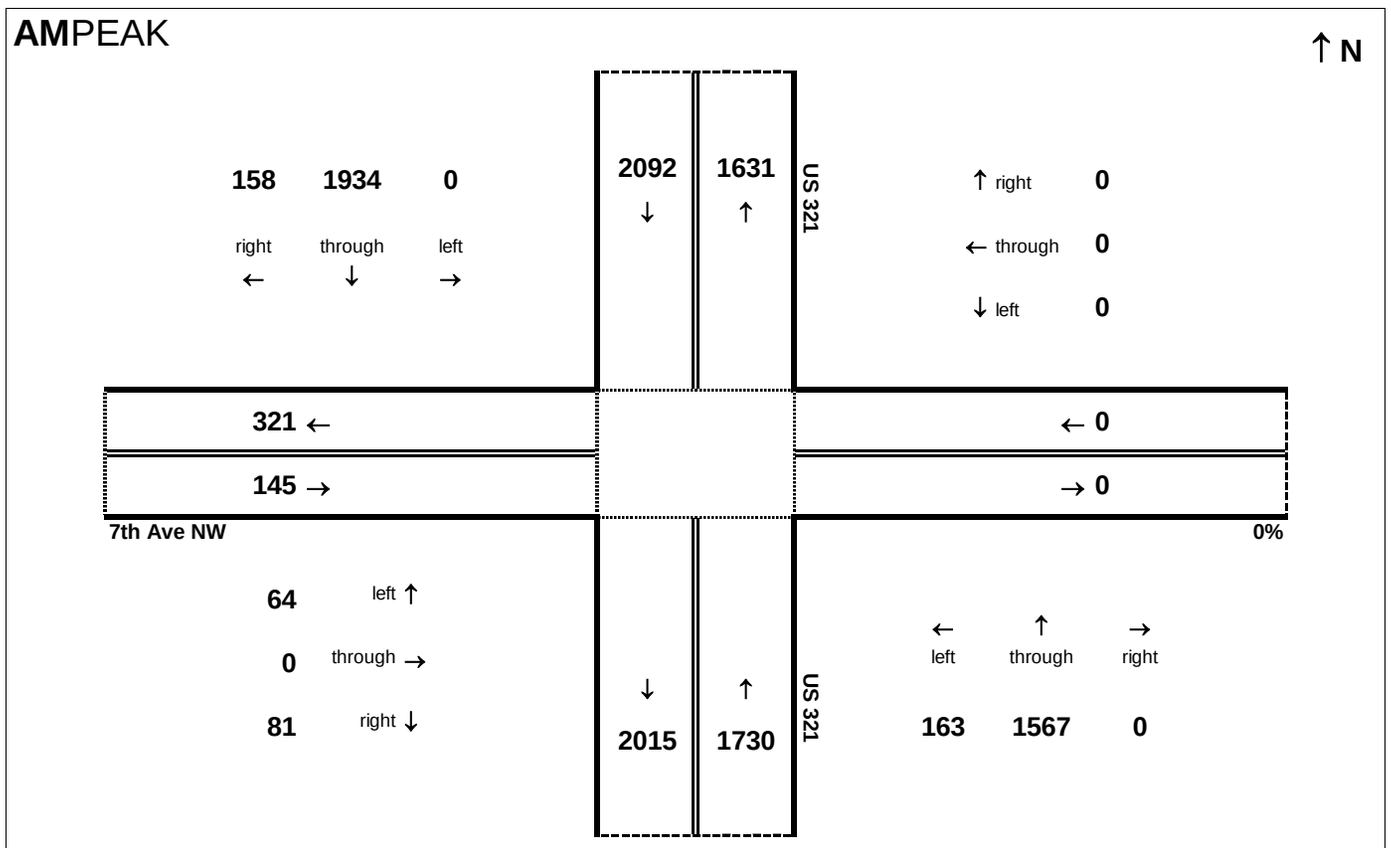



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and 7th Ave NW

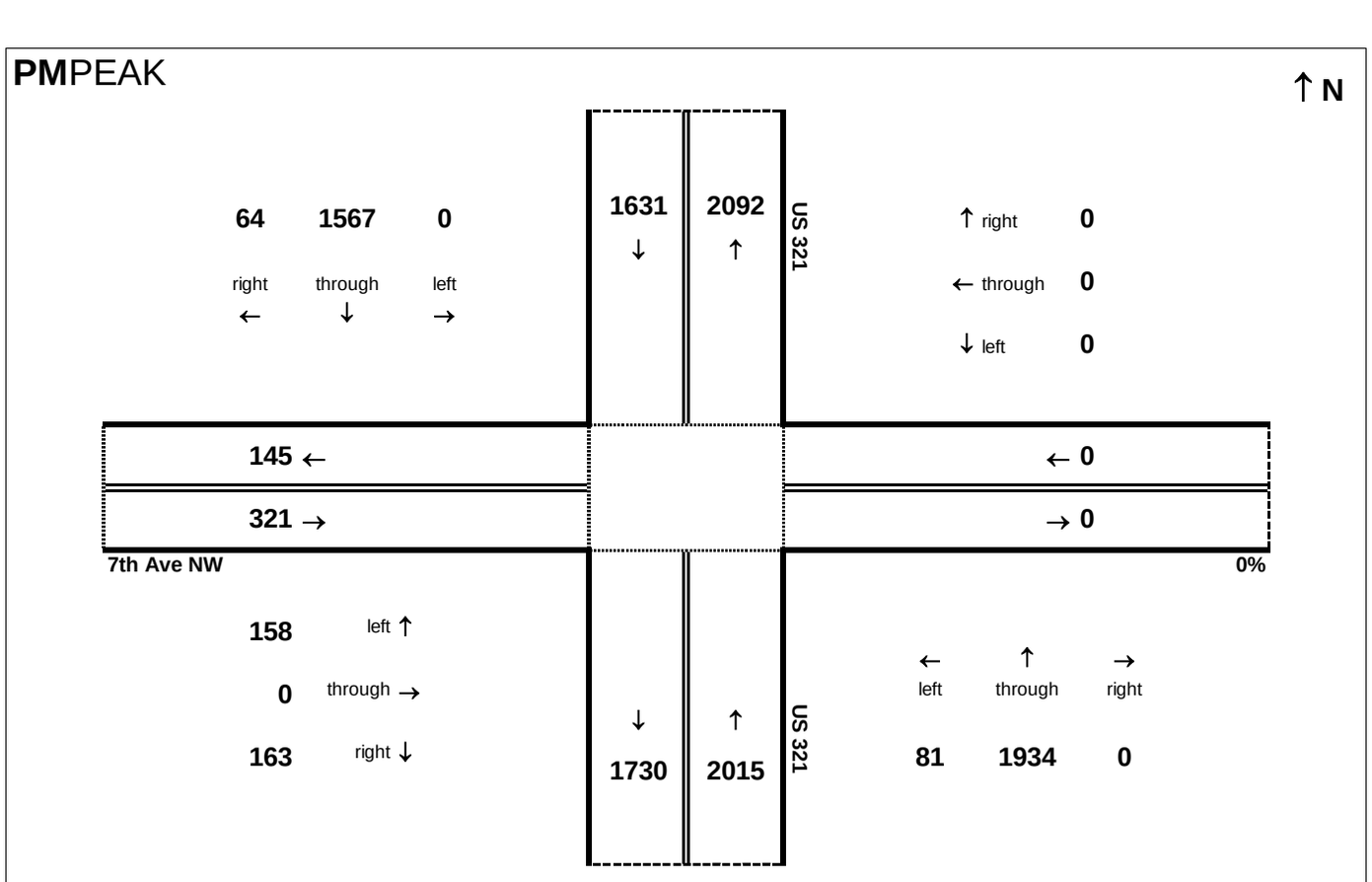
**Traffic Forecast Release Date:**
February-17

**Traffic Data Year:**
2040 Build 1

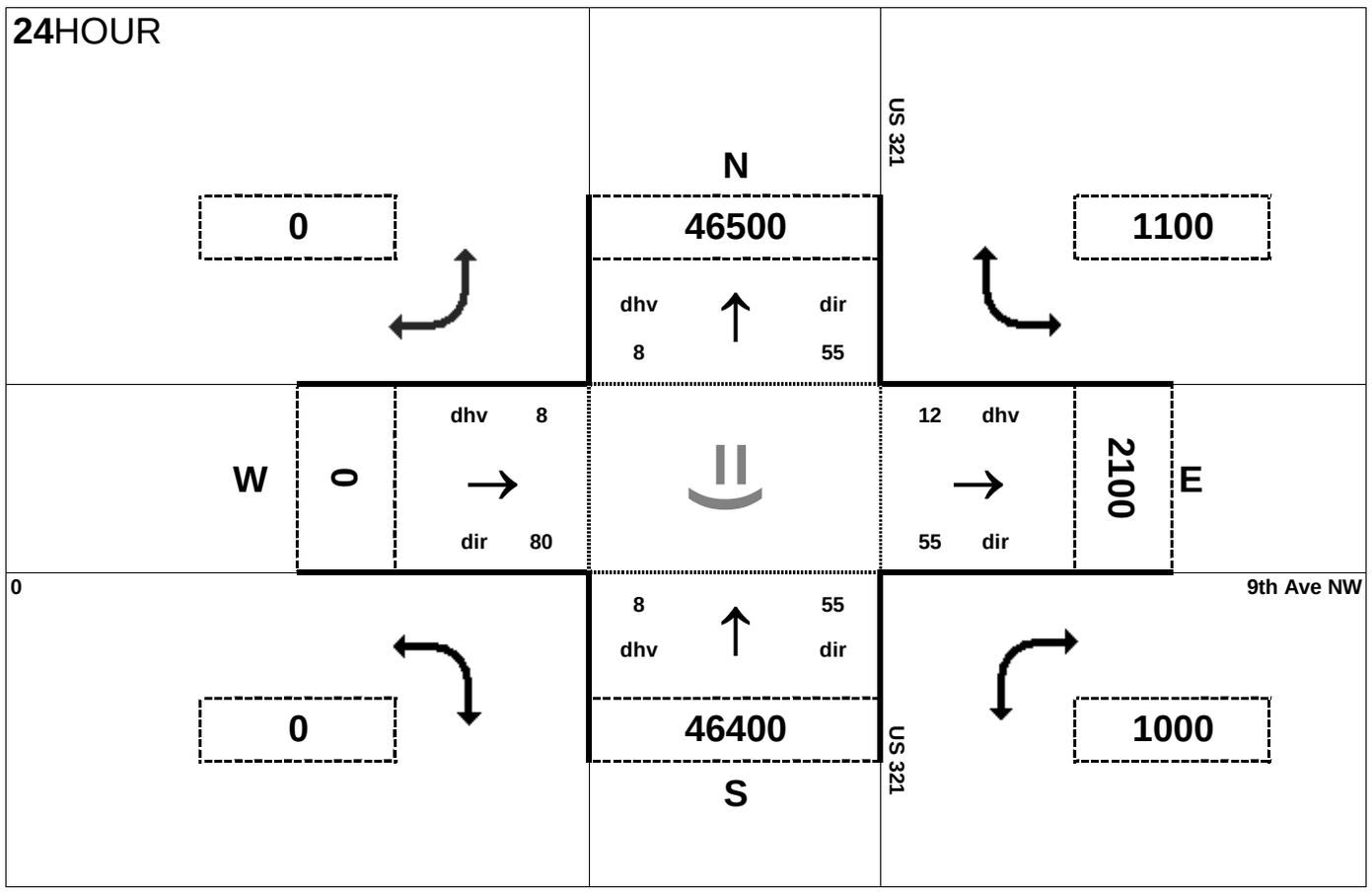
**Project:**
U-4700




*AM peak hour inflow is 3966 vehicles. AM peak hour outflow is 3967 vehicles.*




*PM peak hour inflow is 3967 vehicles. PM peak hour outflow is 3966 vehicles.*

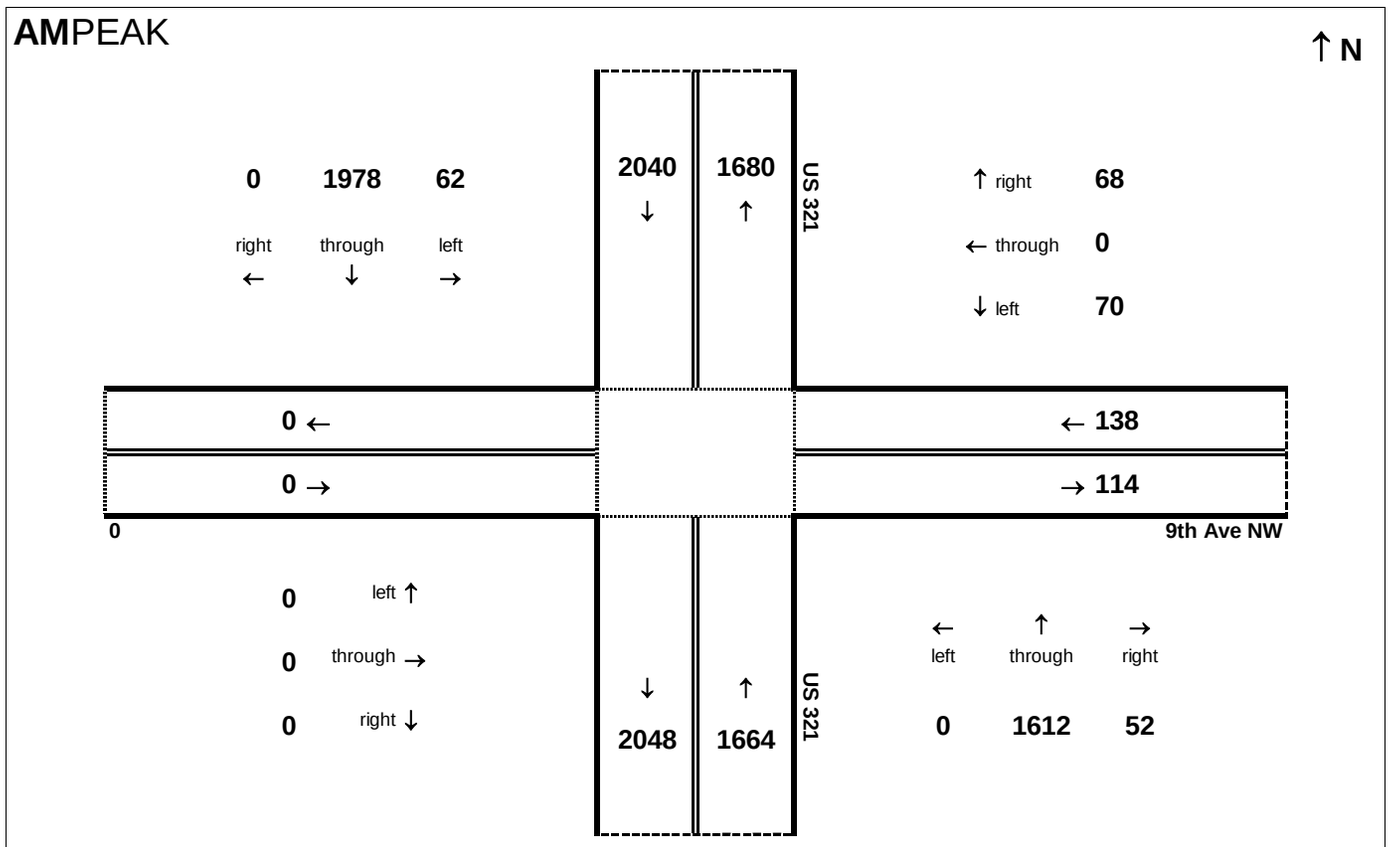



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and 9th Ave NW

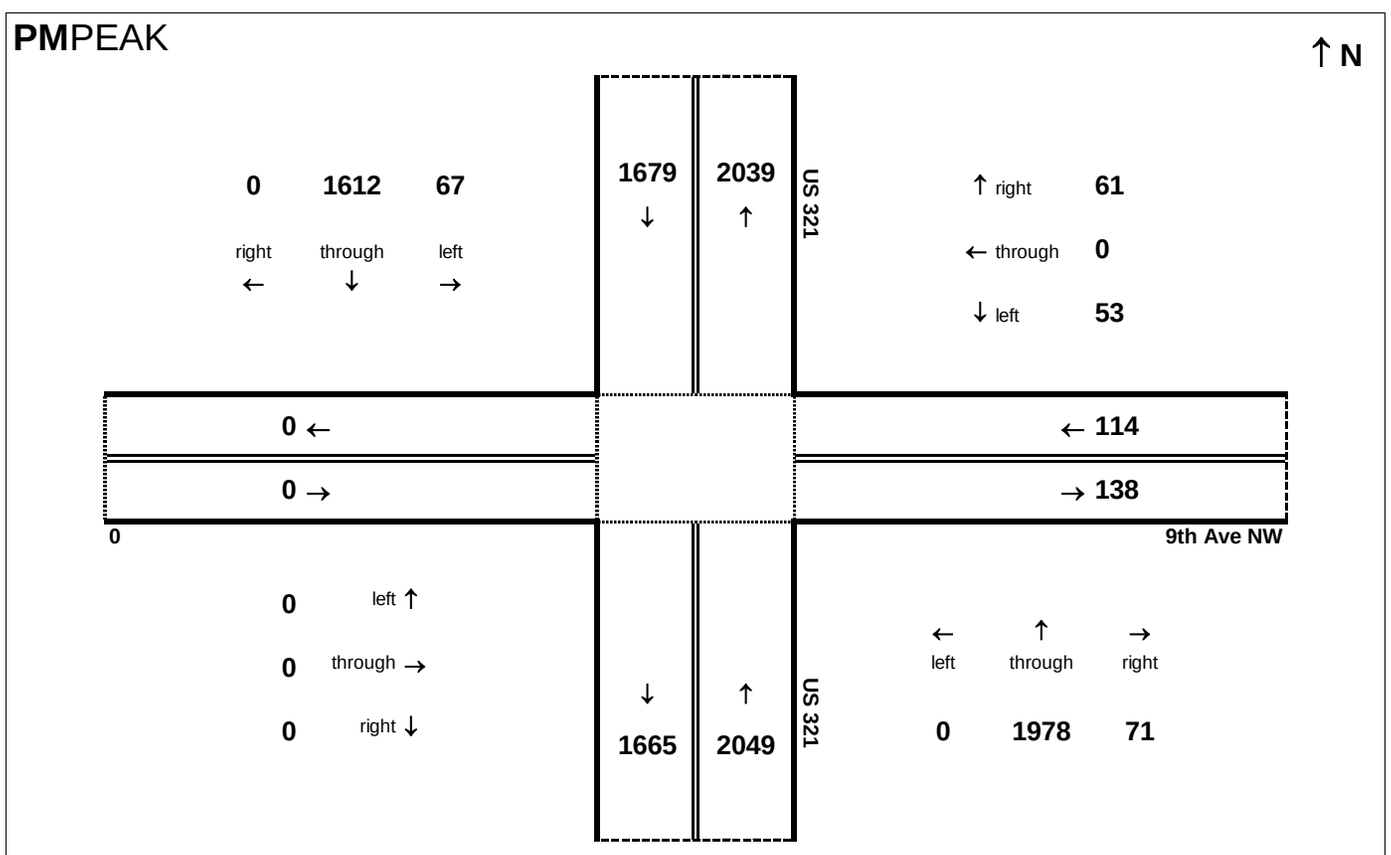
**Traffic Forecast Release Date:**
February-17

**Traffic Data Year:**
2040 Build 1

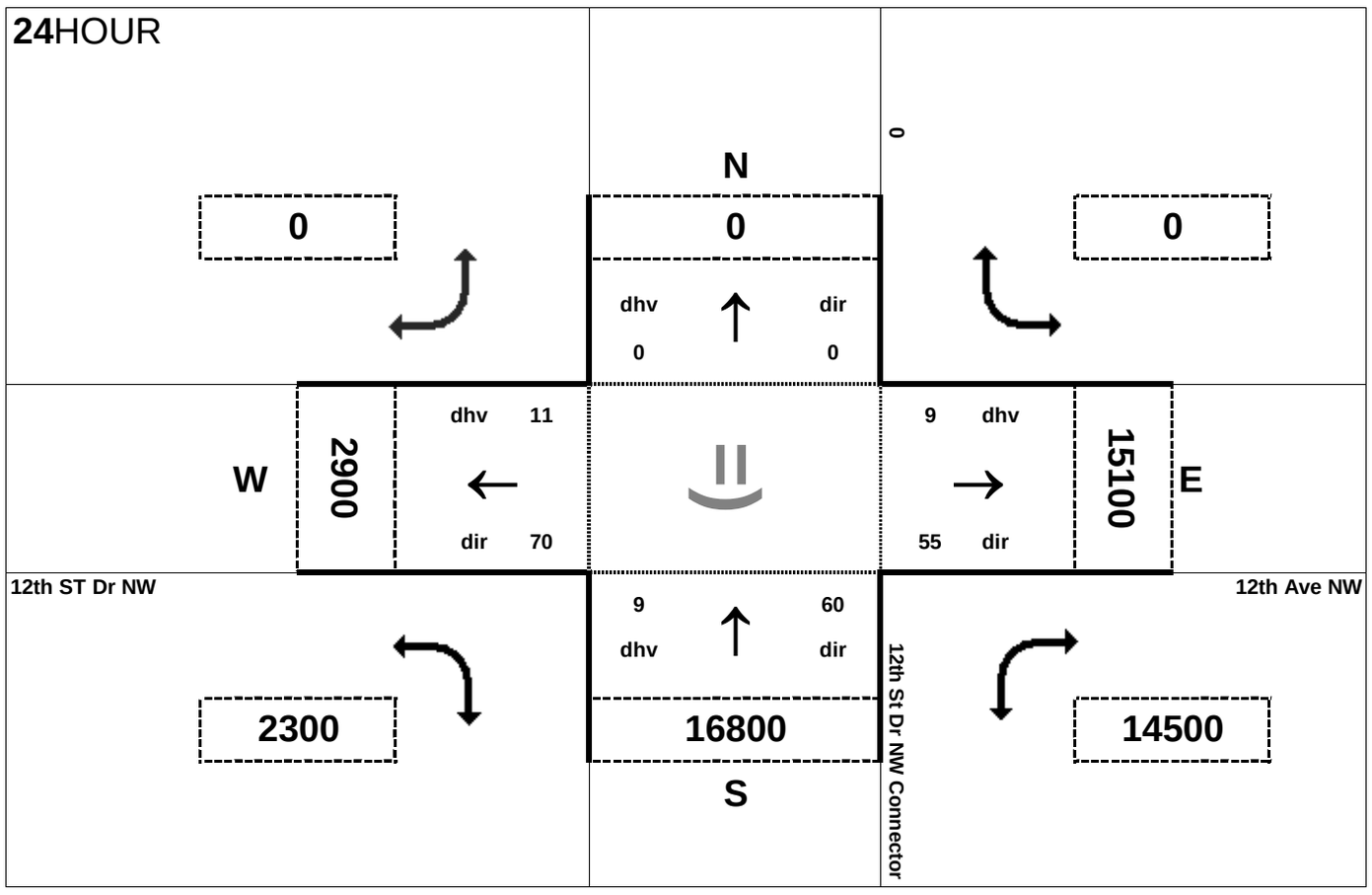
**Project:**
U-4700




*AM peak hour inflow is 3842 vehicles. AM peak hour outflow is 3842 vehicles.*




*PM peak hour inflow is 3842 vehicles. PM peak hour outflow is 3842 vehicles.*

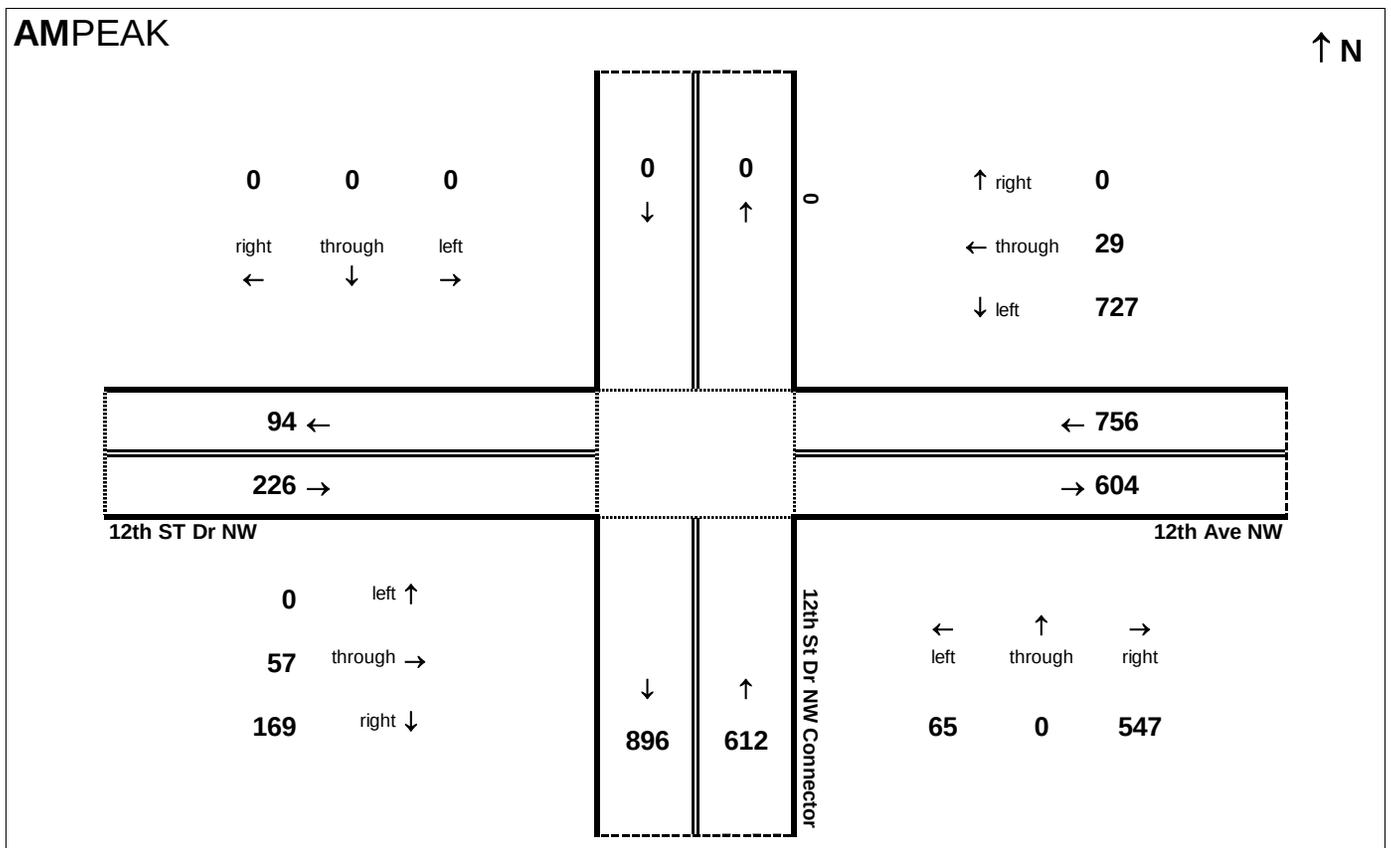



**Peak Hour Volume Breakouts Report:**
Intersection of 12th Ave NW at 12th St Dr NW

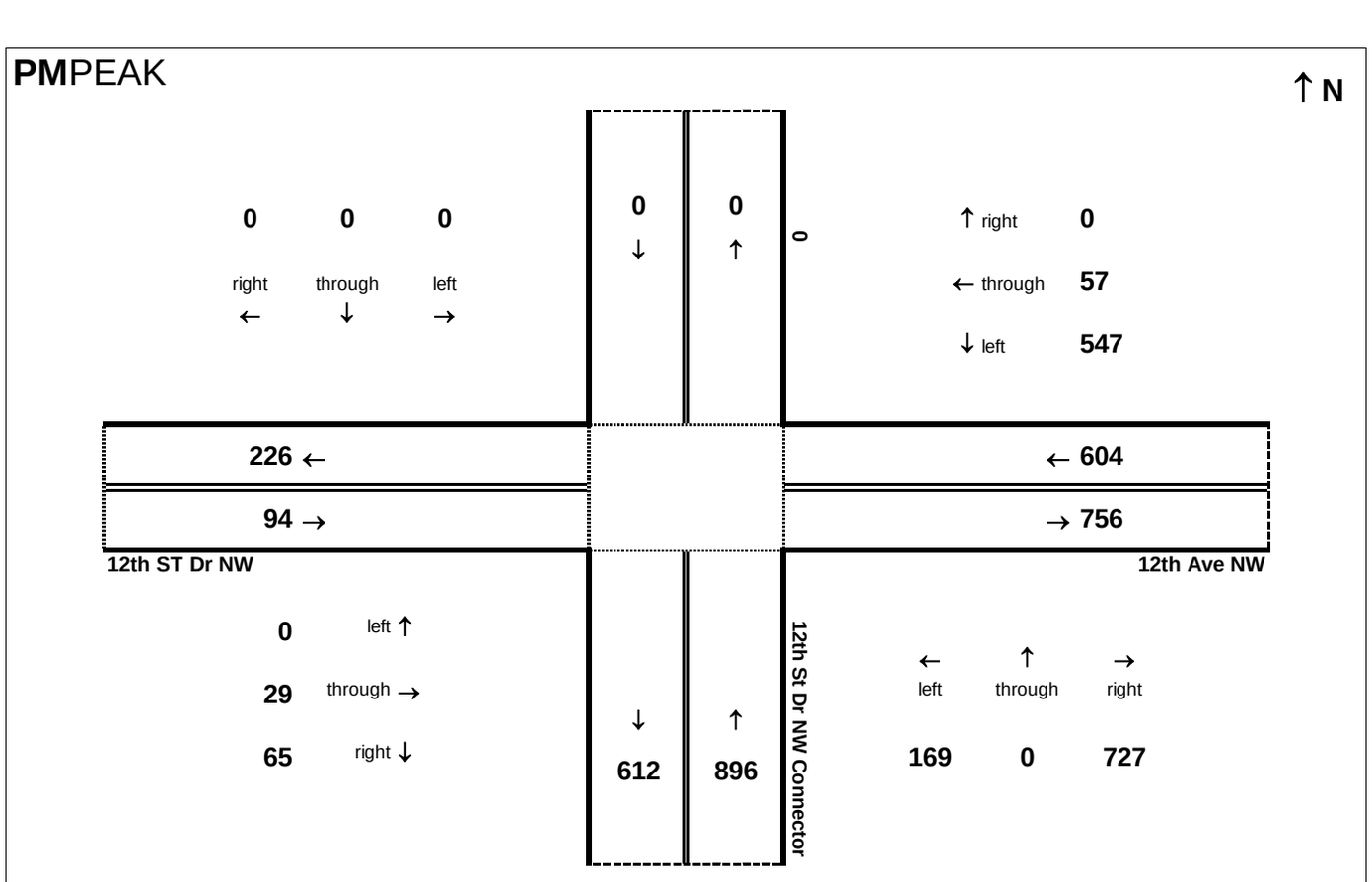
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 1

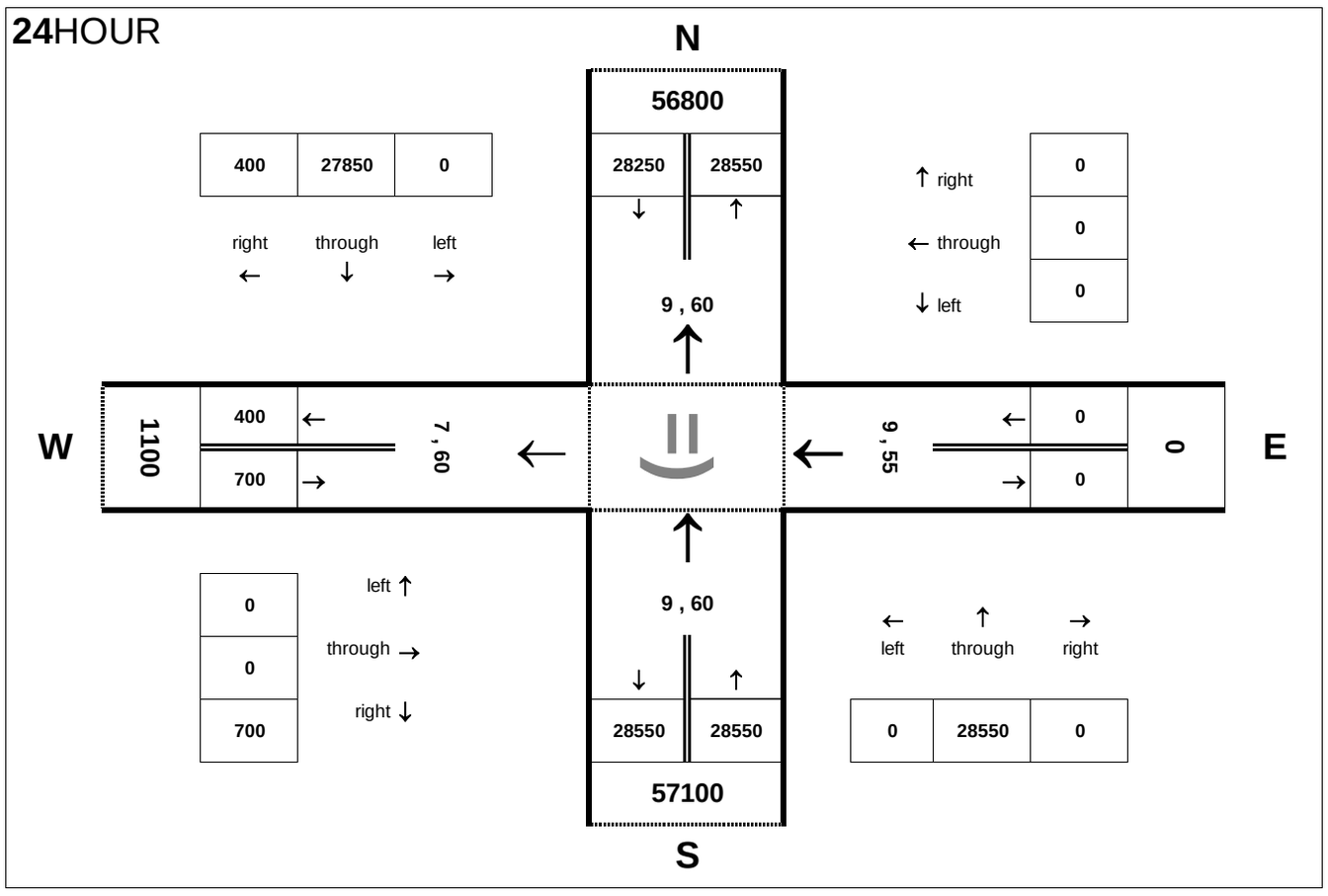
**Project:**
U-4700

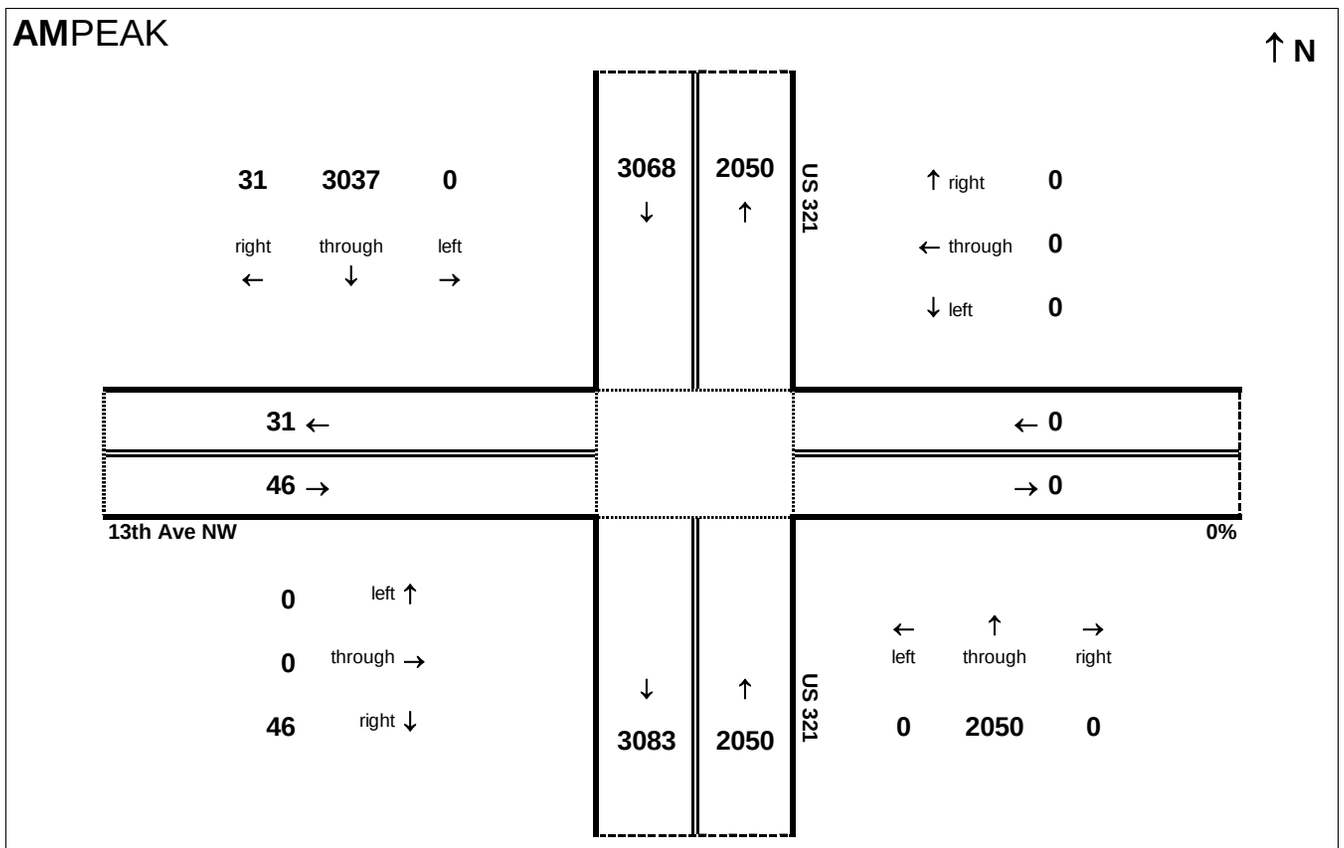



*AM peak hour inflow is 1595 vehicles. AM peak hour outflow is 1595 vehicles.*

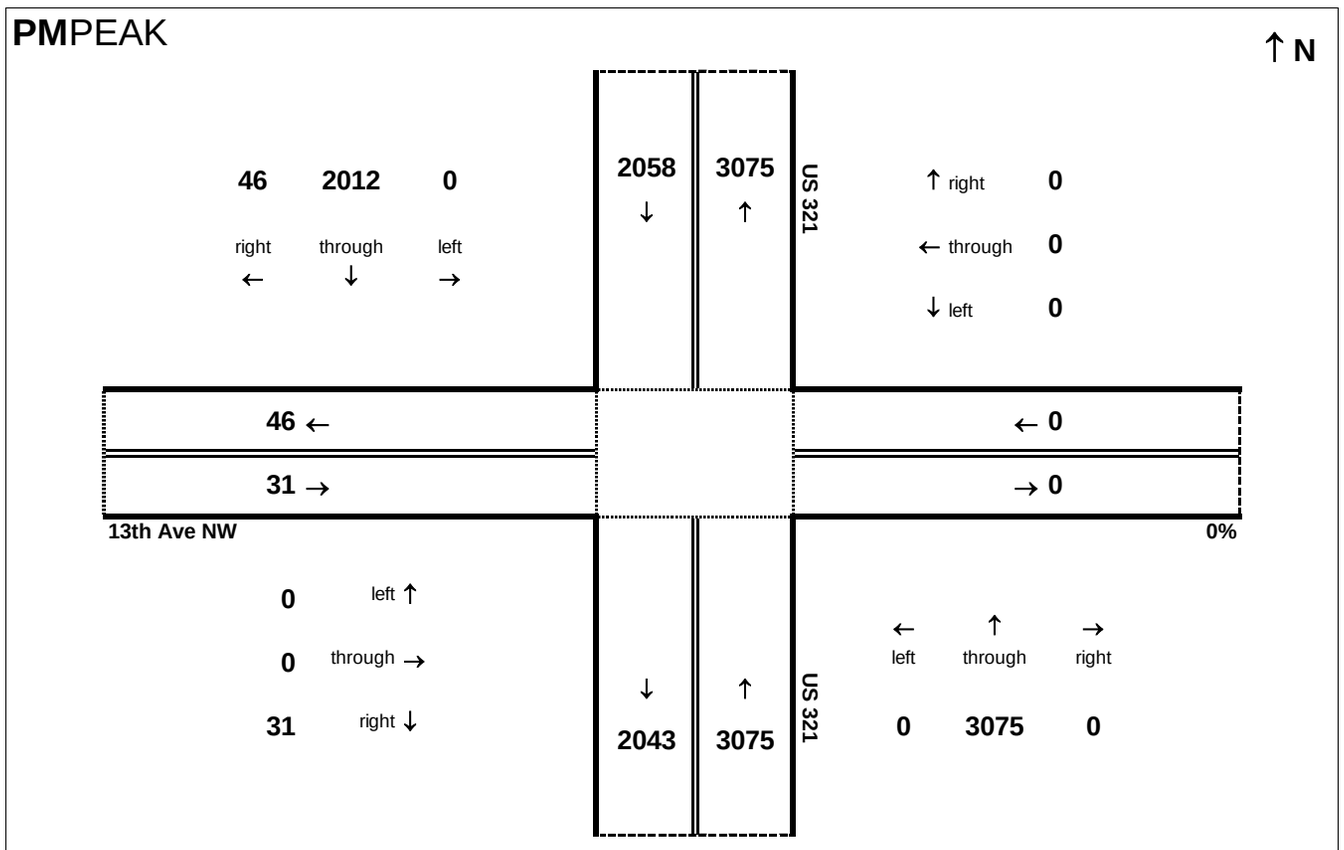



*PM peak hour inflow is 1595 vehicles. PM peak hour outflow is 1595 vehicles.*




*AM peak hour inflow is 5164 vehicles. AM peak hour outflow is 5164 vehicles.*



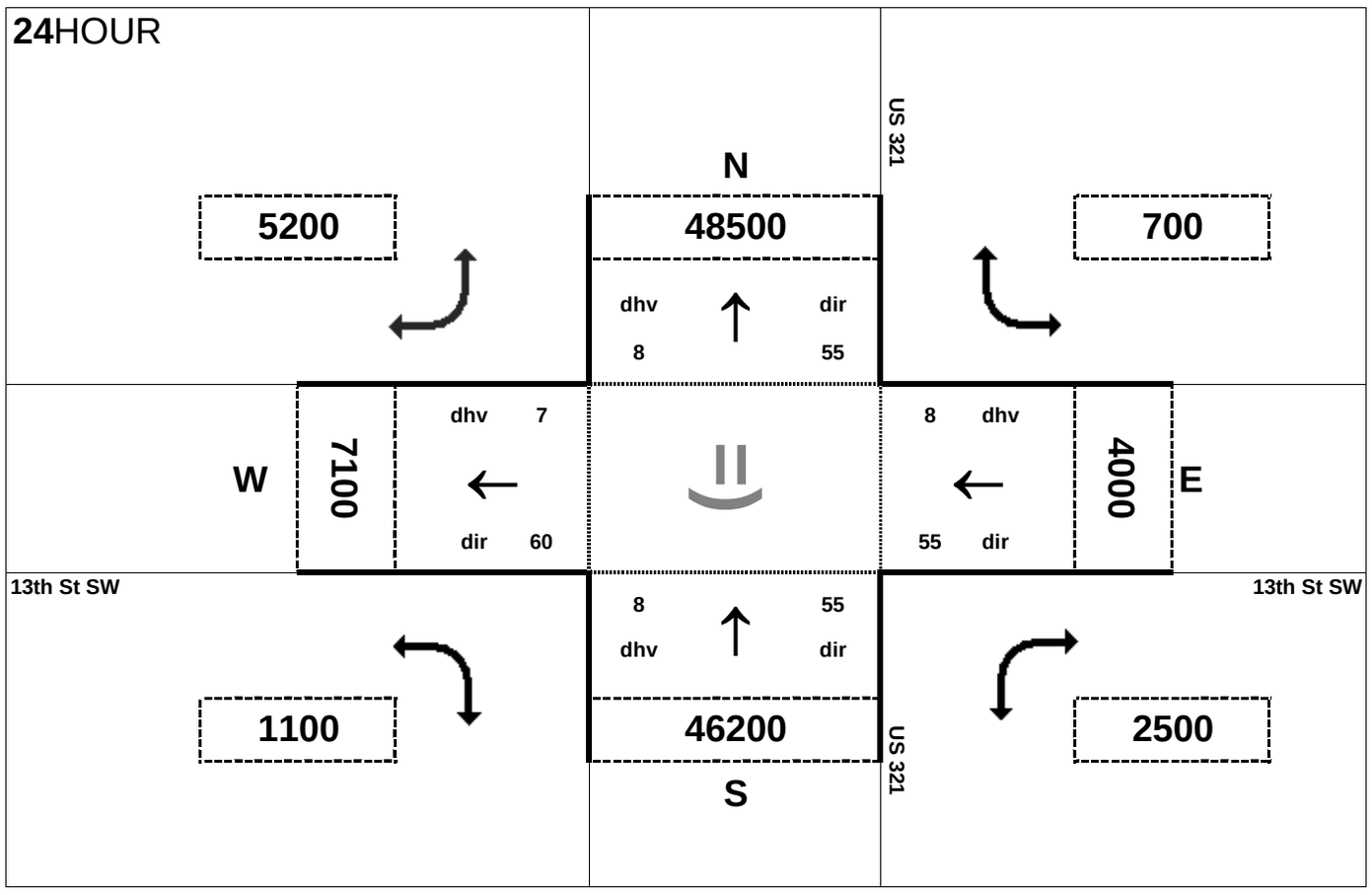

*PM peak hour inflow is 5164 vehicles. PM peak hour outflow is 5164 vehicles.*

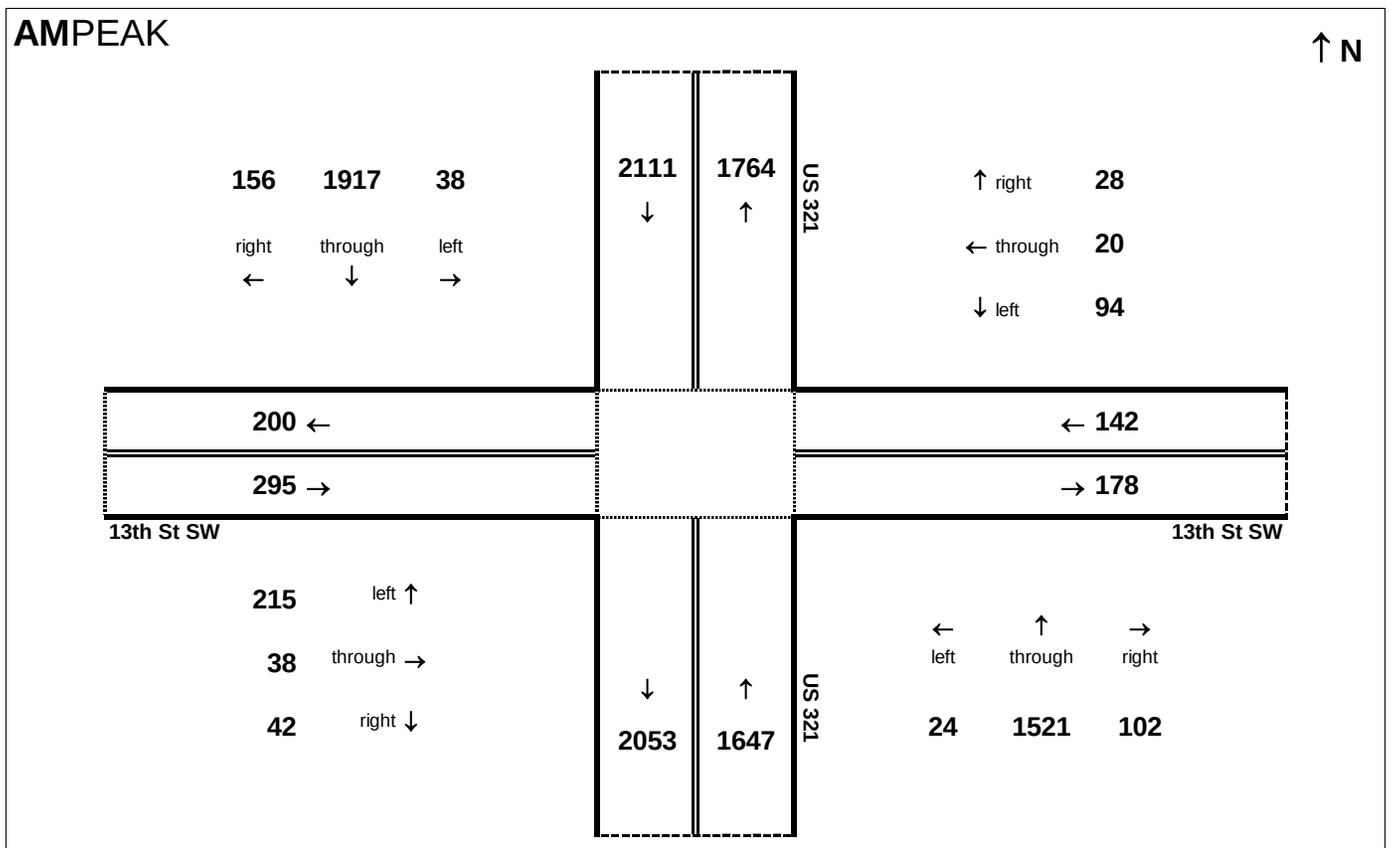
**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and 13th Ave NW

**Traffic Forecast Release Date:**
February-17

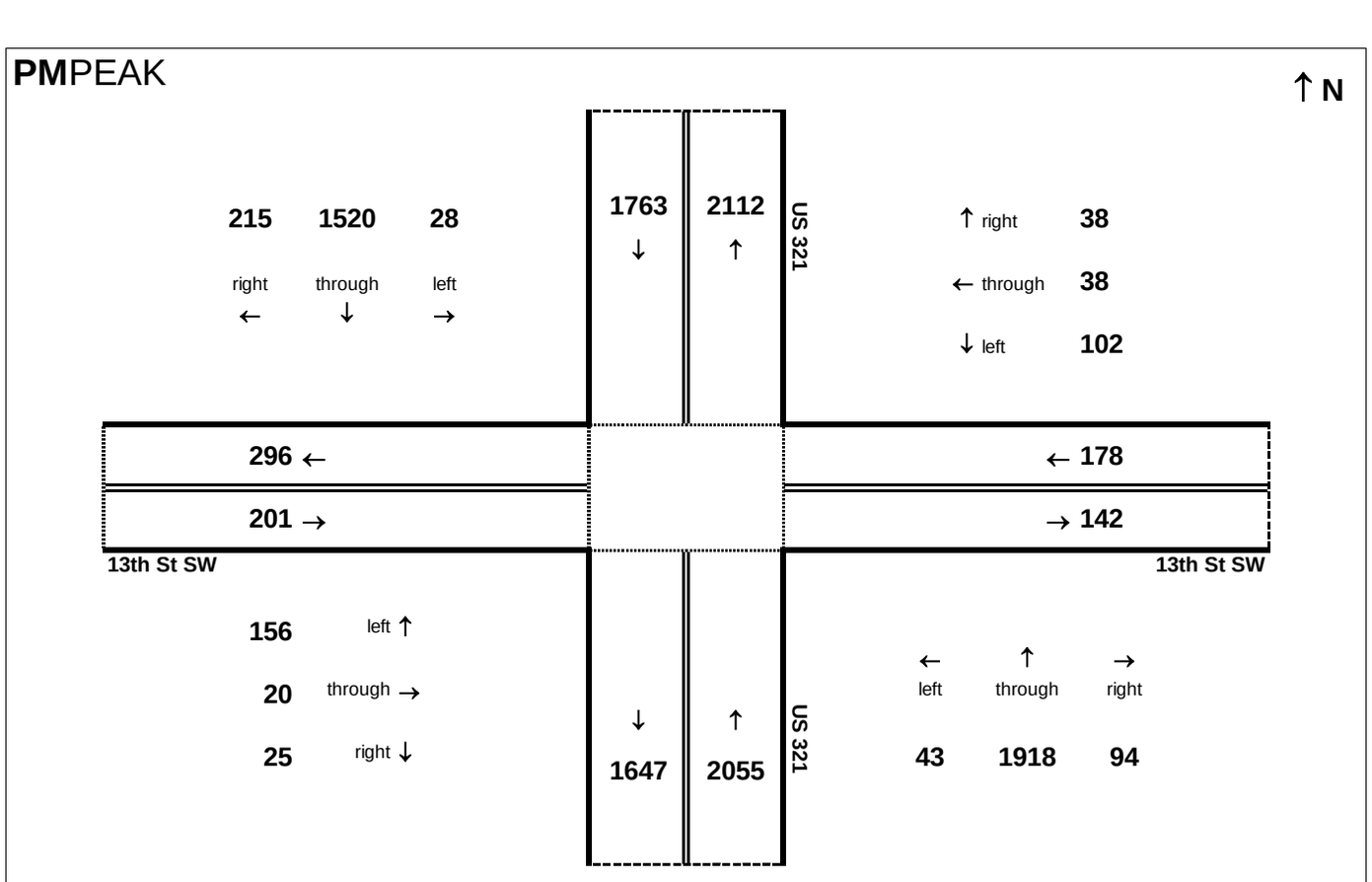
**Traffic Data Year:**
2040 Build 1

**Project:**
U-4700




*AM peak hour inflow is 4197 vehicles. AM peak hour outflow is 4197 vehicles.*



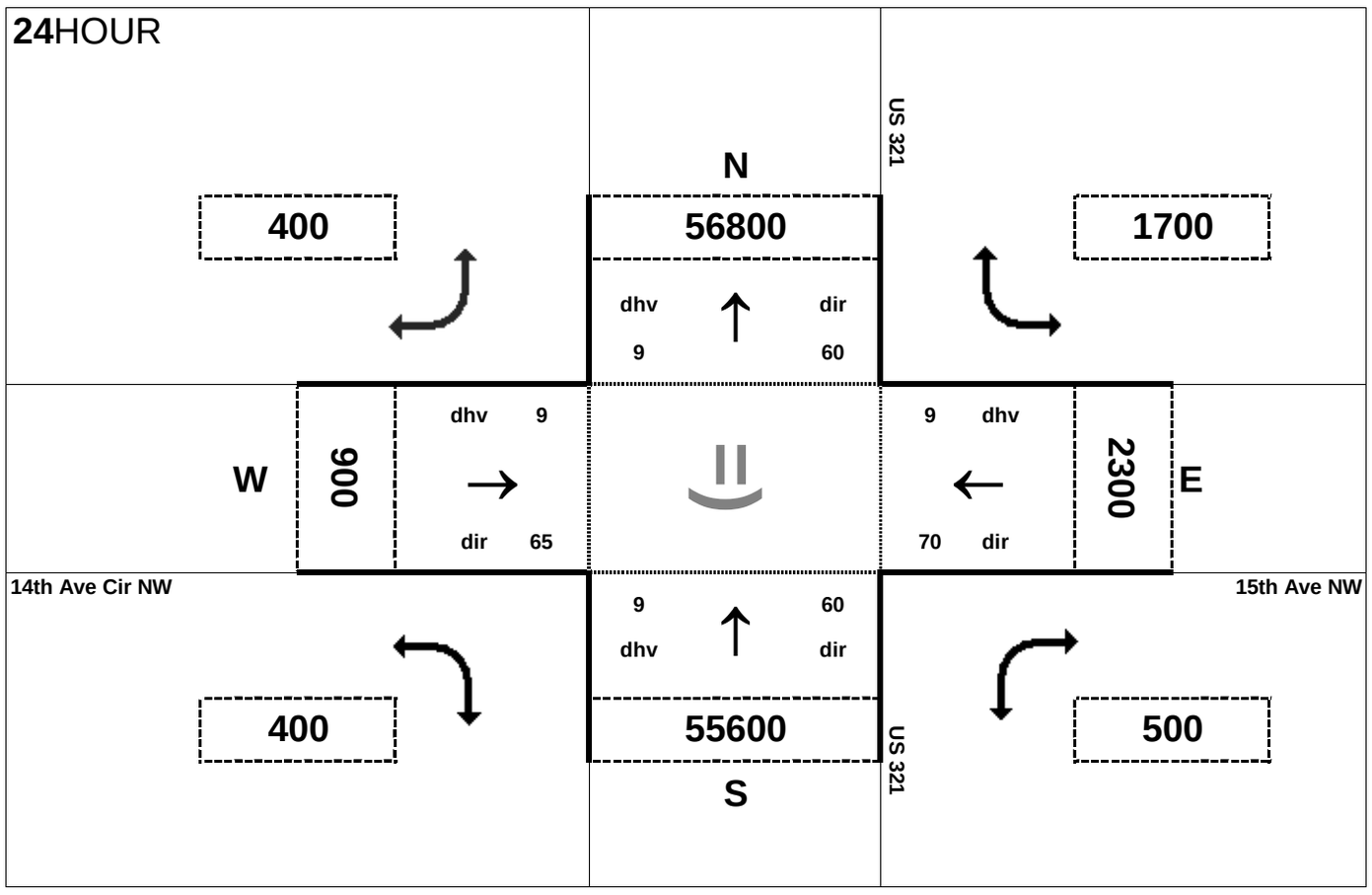

*PM peak hour inflow is 4197 vehicles. PM peak hour outflow is 4197 vehicles.*

**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and 13th St SW

**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 1

**Project:**
U-4700

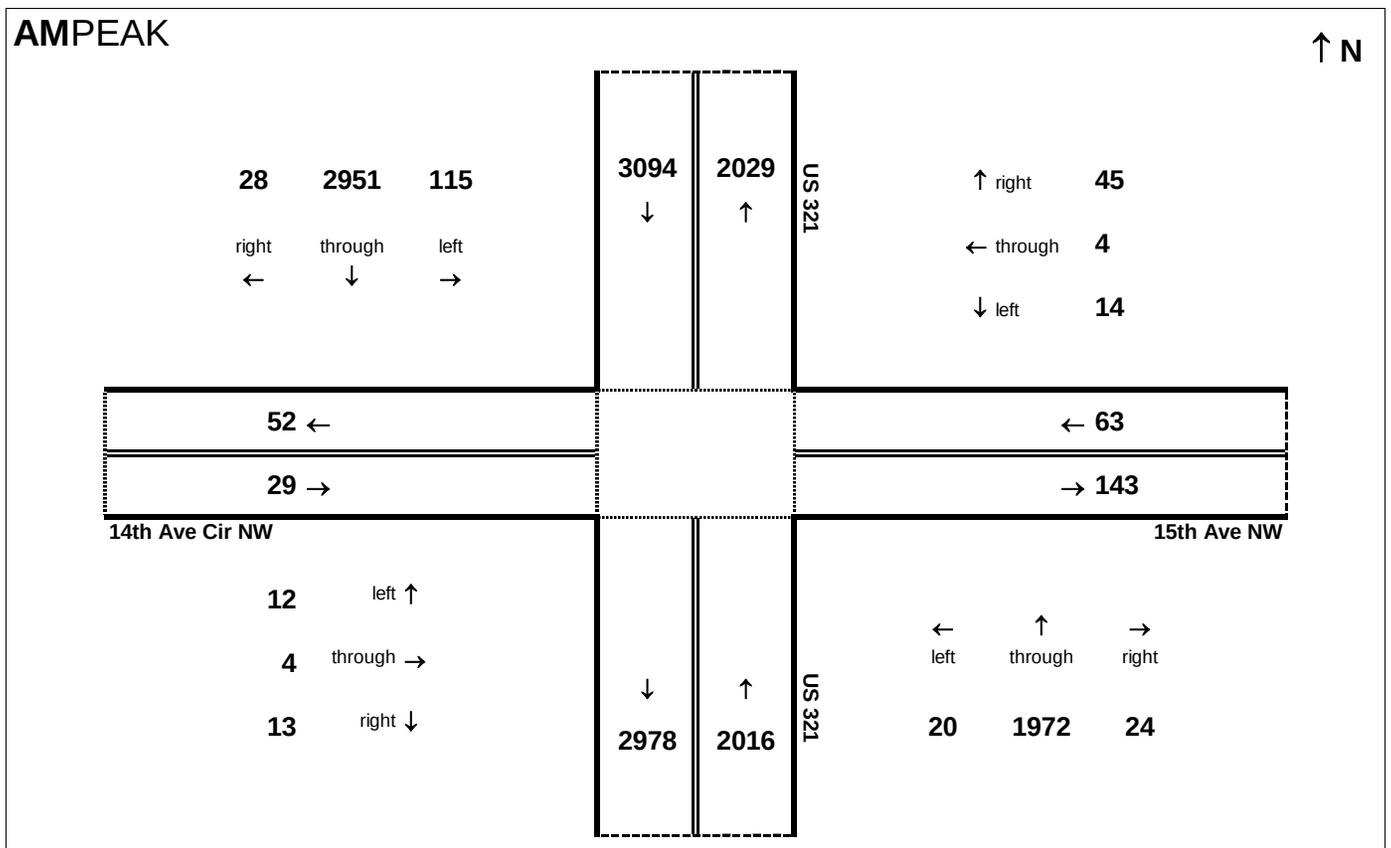



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and 15th Ave NW / 14th Ave Cir NW

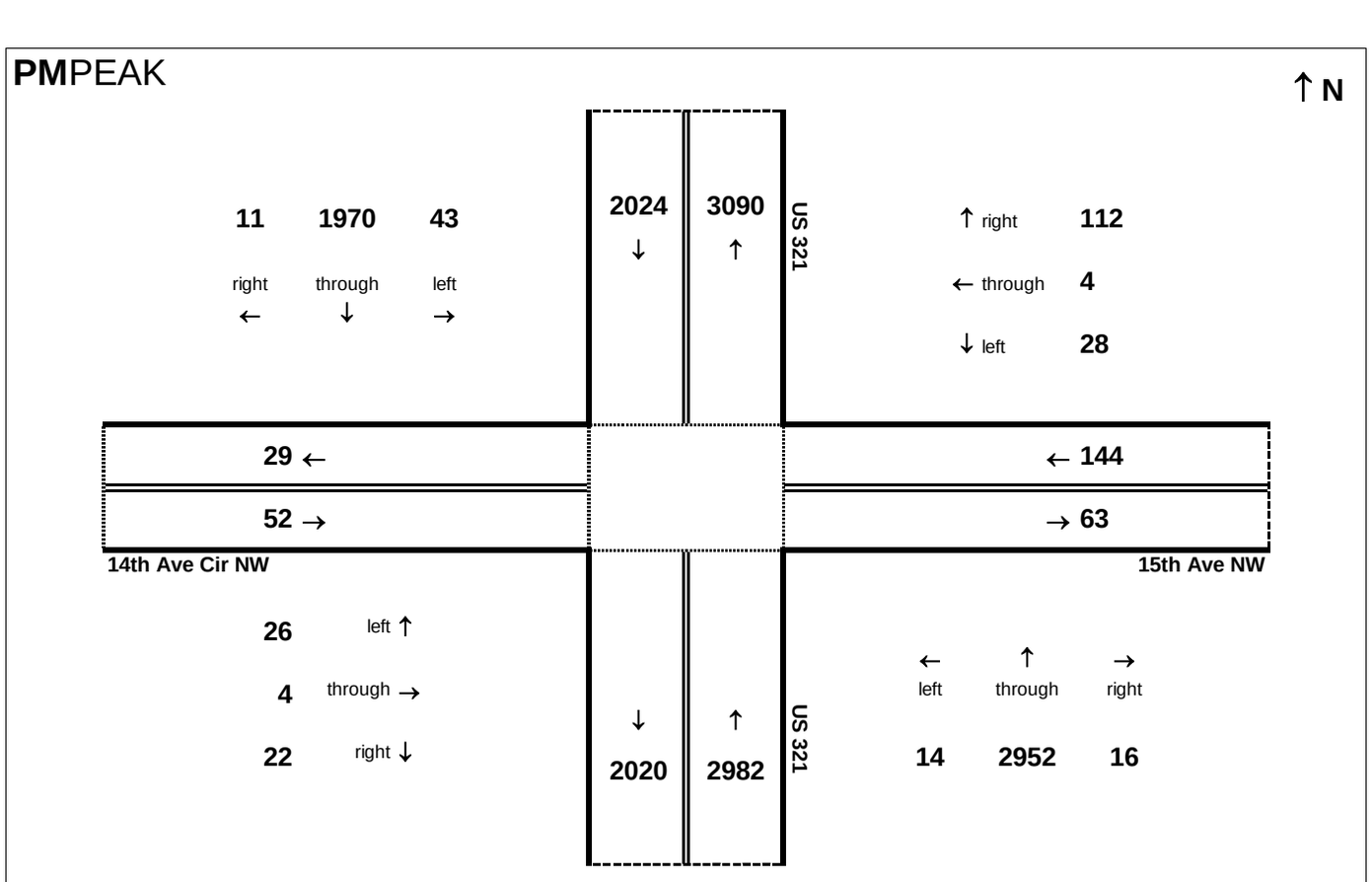
**Traffic Forecast Release Date:**
February-17

**Traffic Data Year:**
2040 Build 1

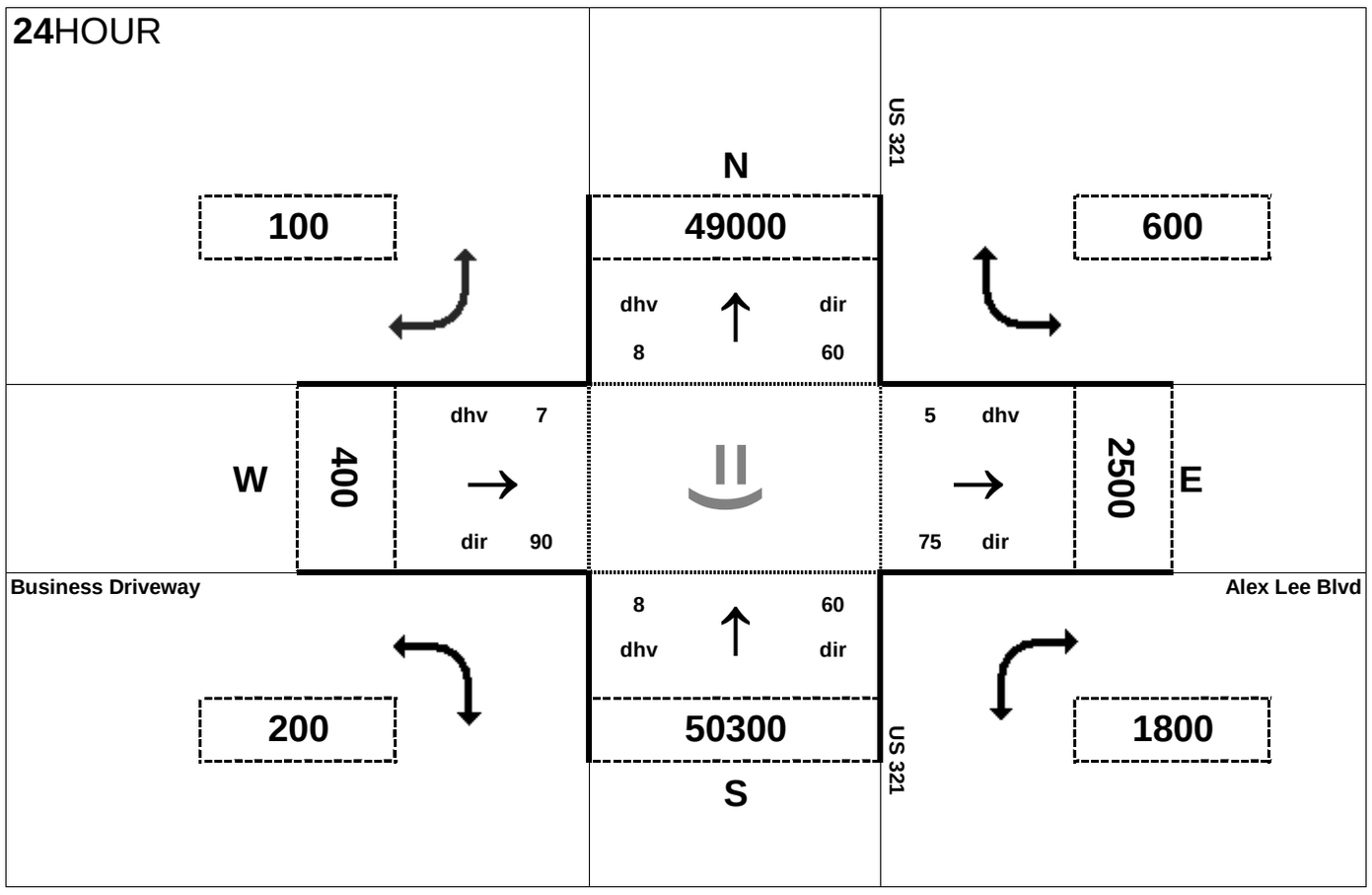
**Project:**
U-4700




*AM peak hour inflow is 5203 vehicles. AM peak hour outflow is 5202 vehicles.*




*PM peak hour inflow is 5202 vehicles. PM peak hour outflow is 5203 vehicles.*

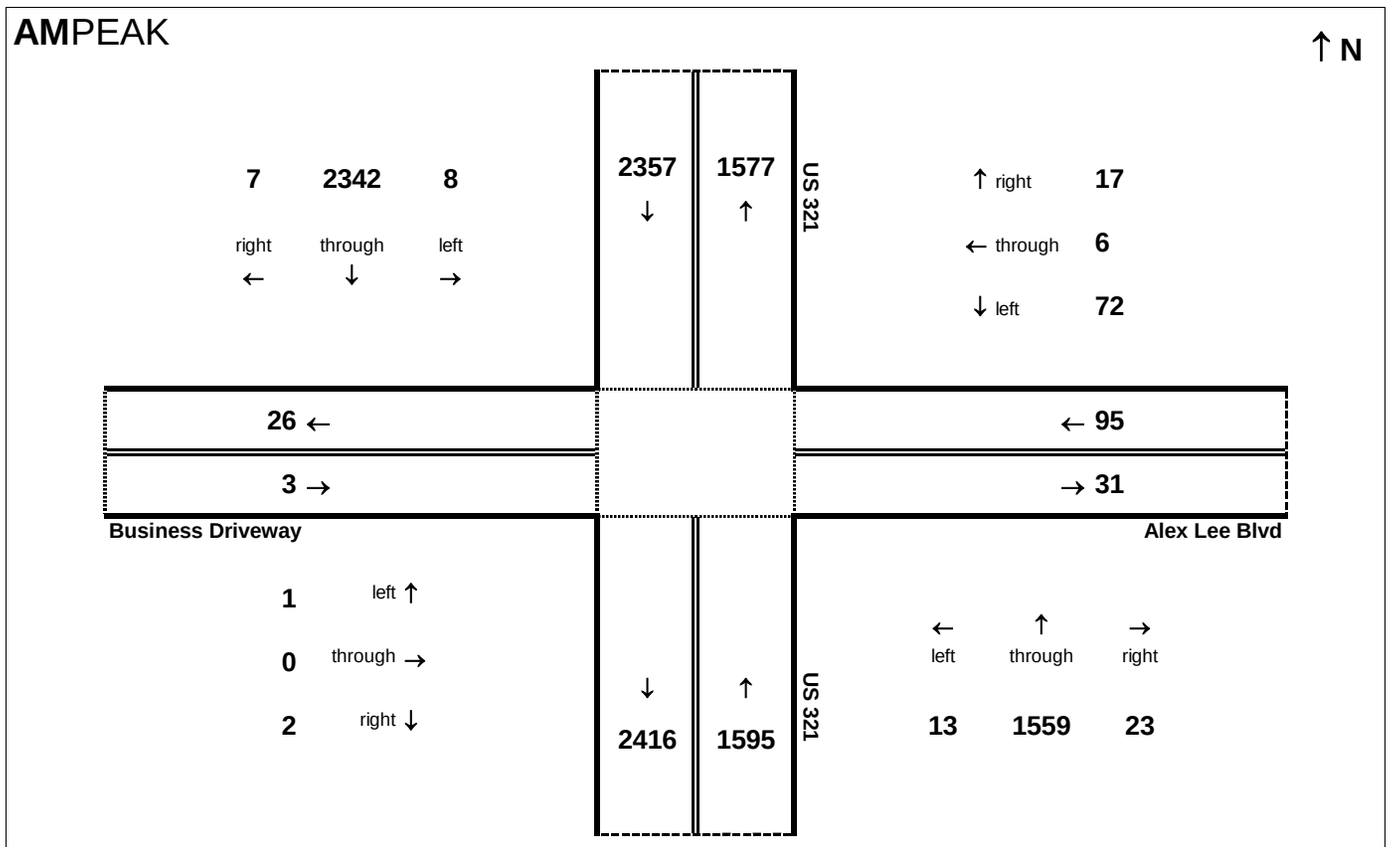



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and Alex Lee Blvd

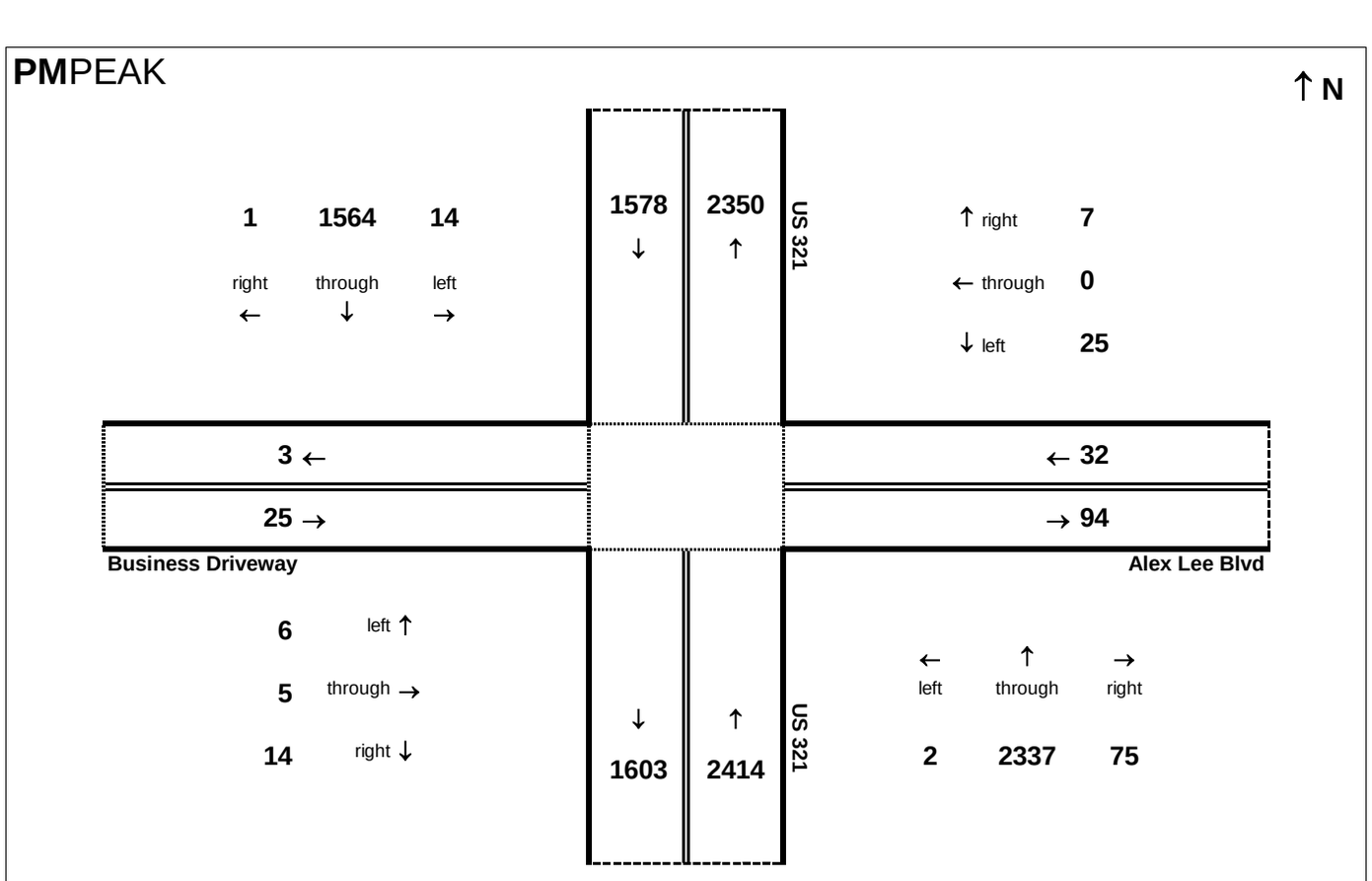
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 1

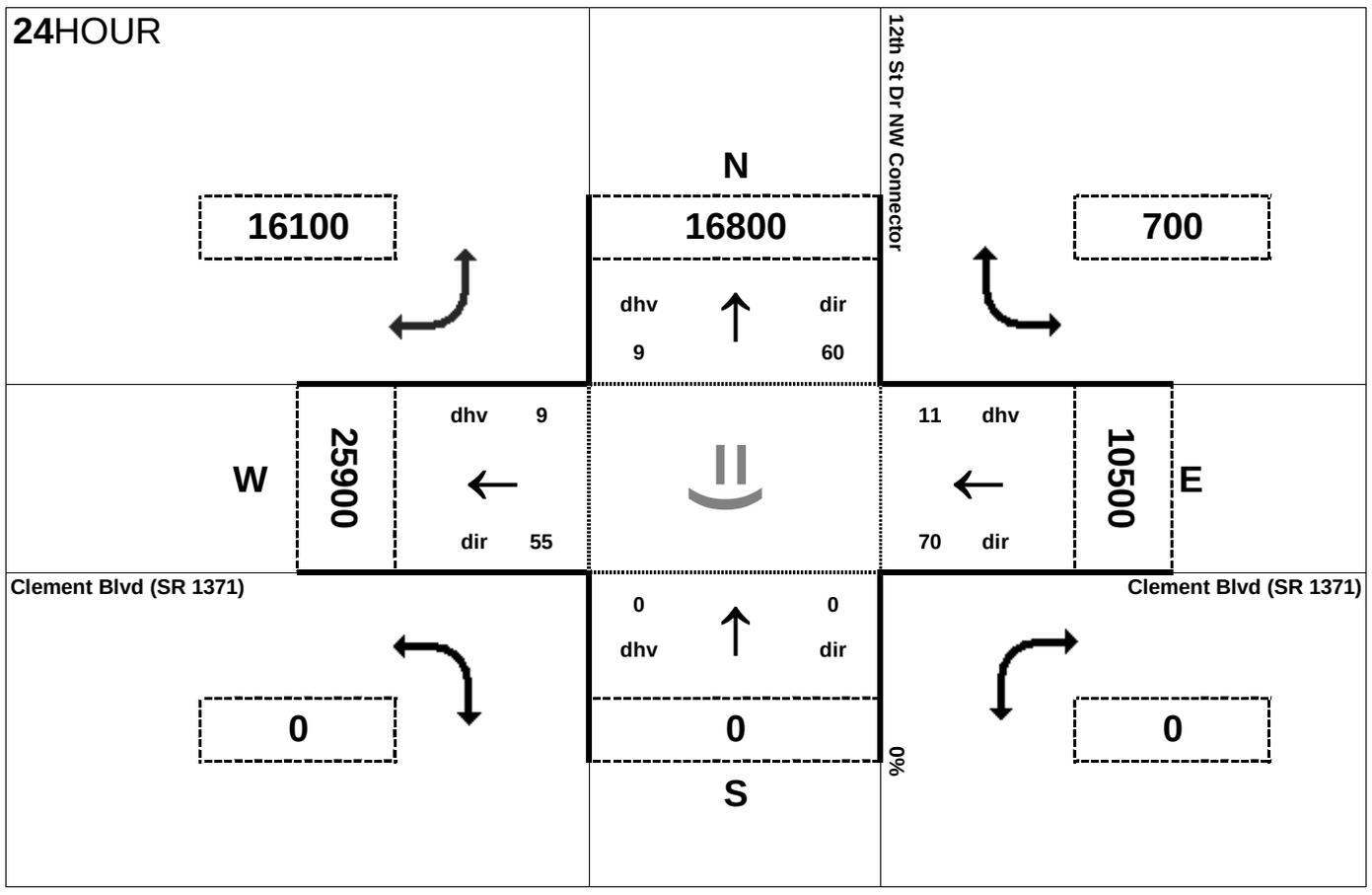
**Project:**
U-4700




*AM peak hour inflow is 4049 vehicles. AM peak hour outflow is 4048 vehicles.*




*PM peak hour inflow is 4048 vehicles. PM peak hour outflow is 4049 vehicles.*

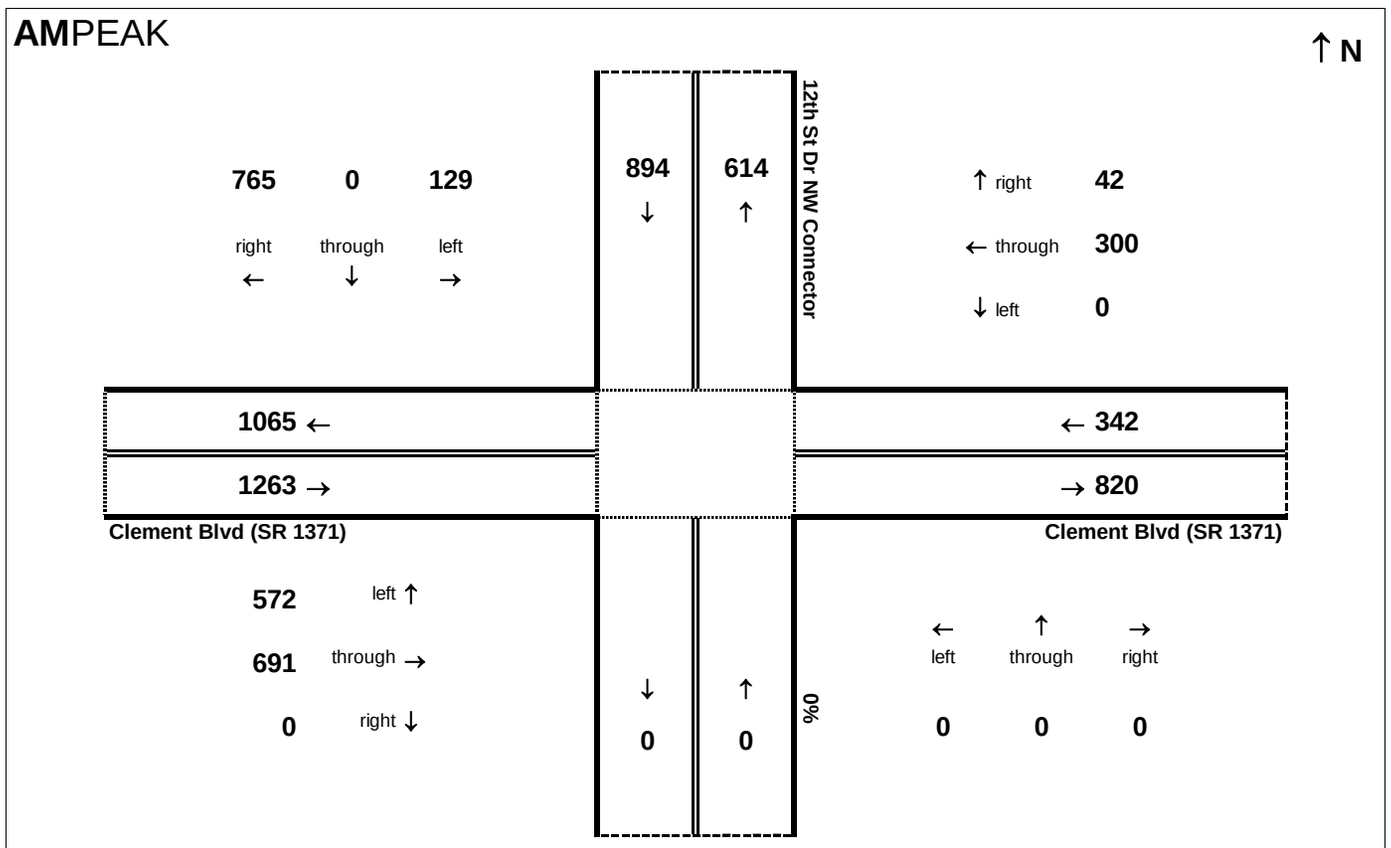



**Peak Hour Volume Breakouts Report:**
Intersection of Clement Blvd at 12th St Dr NW Connector

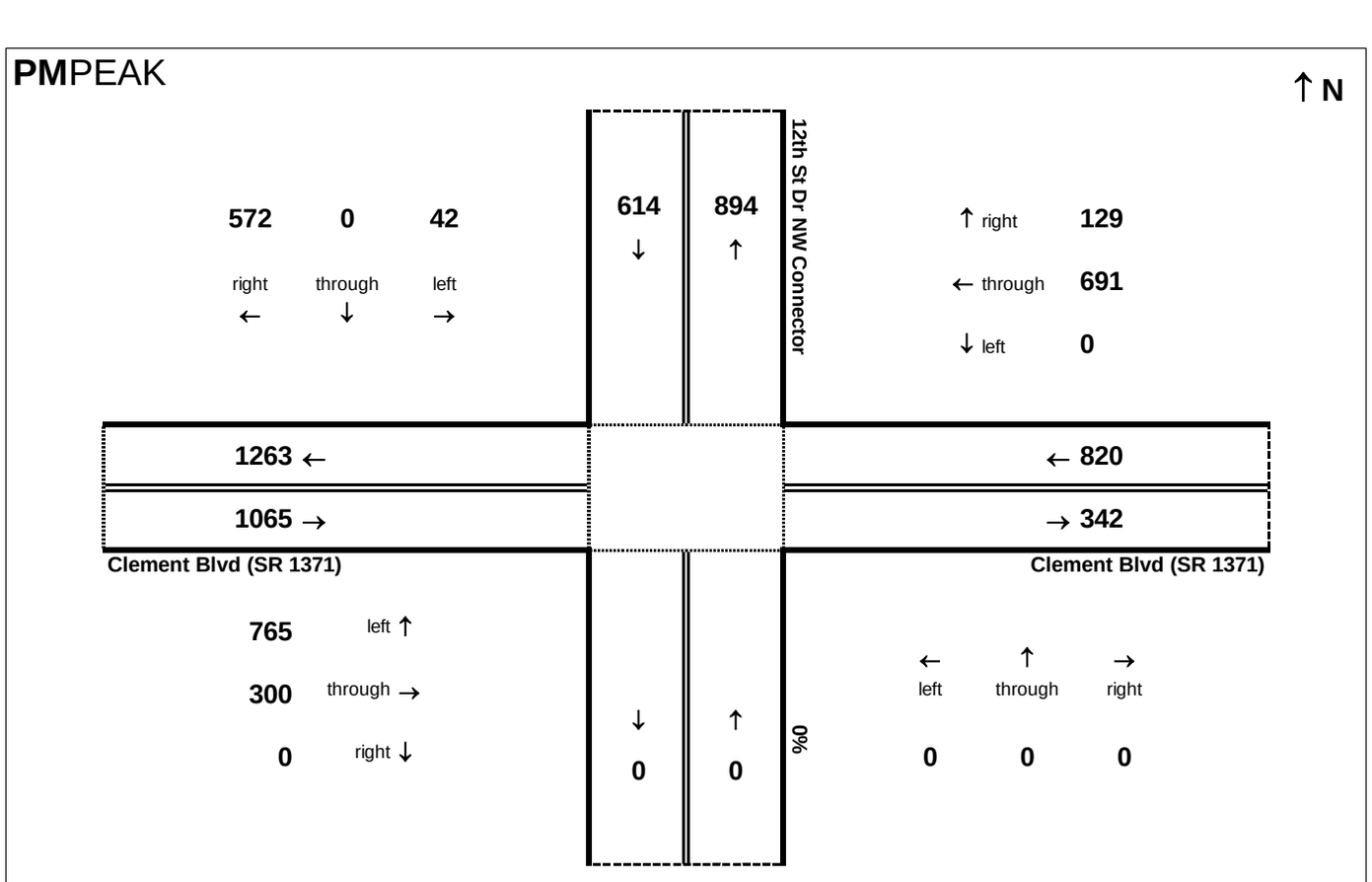
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 1

**Project:**
U-4700




*AM peak hour inflow is 2498 vehicles. AM peak hour outflow is 2500 vehicles.*



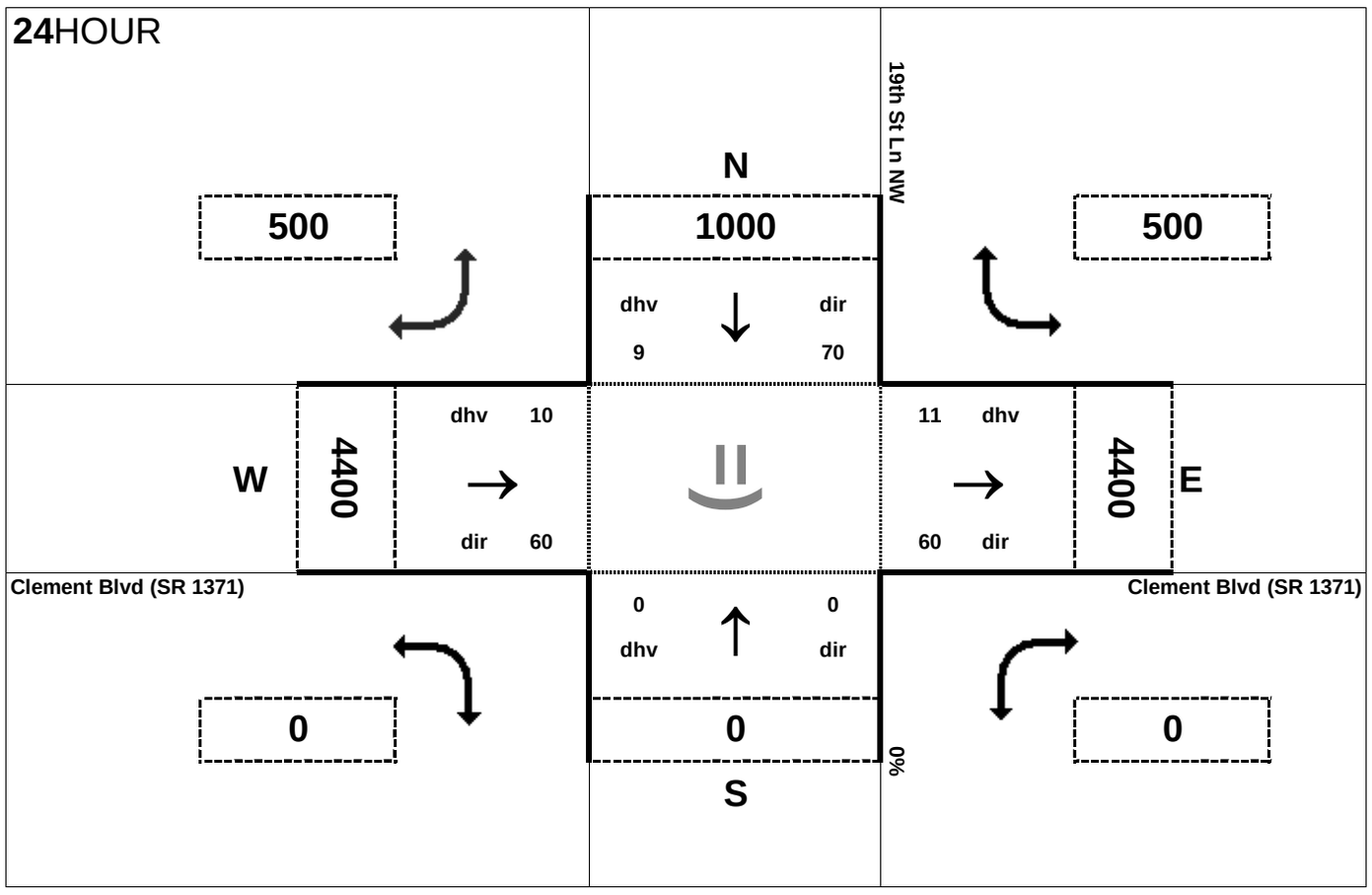

*PM peak hour inflow is 2500 vehicles. PM peak hour outflow is 2498 vehicles.*

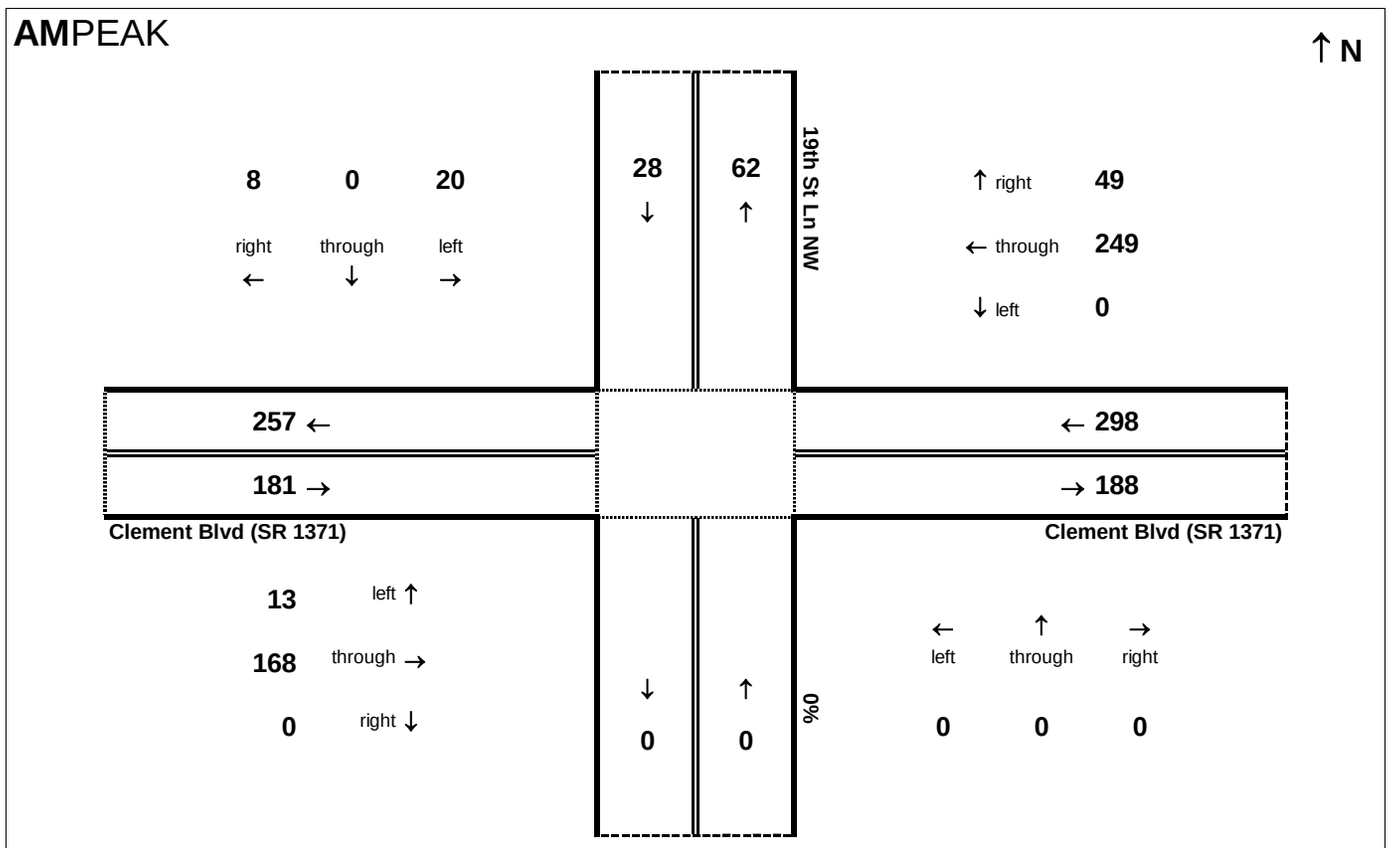
**Peak Hour Volume Breakouts Report:**
Intersection of Clement Blvd and 19th St Ln NW

**Traffic Forecast Release Date:**
December-16

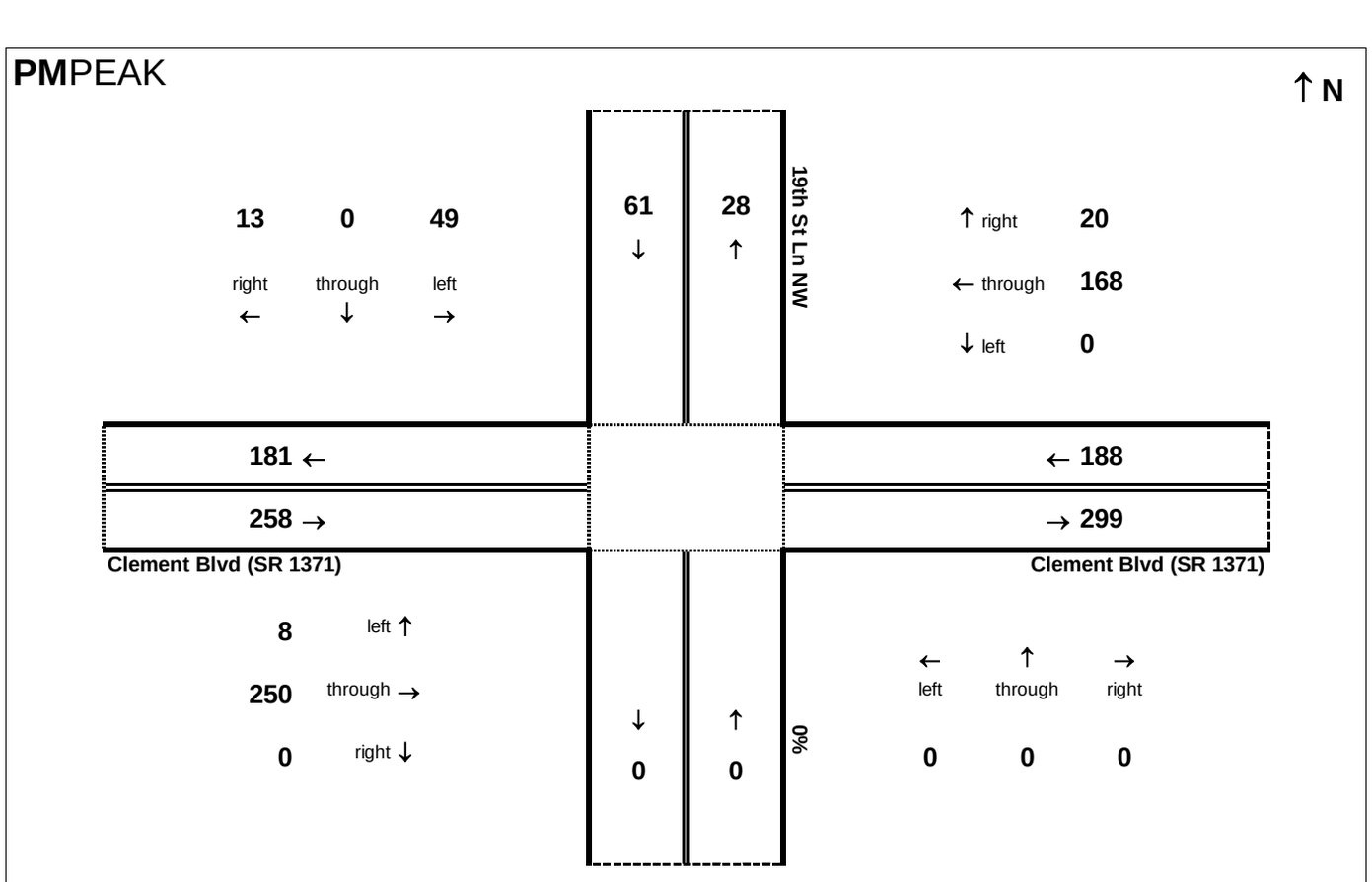
**Traffic Data Year:**
2040 Build 1

**Project:**
U-4700

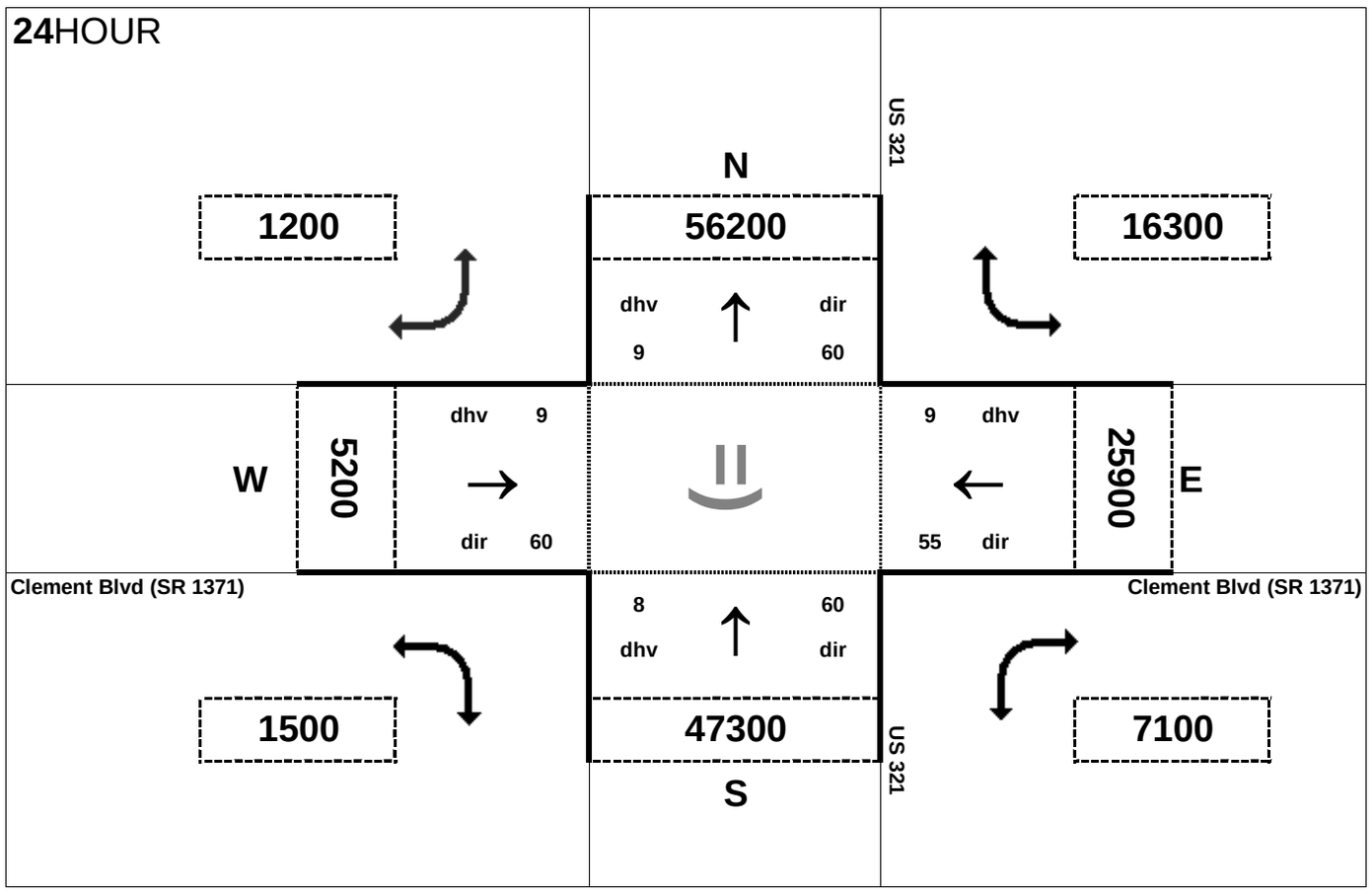



*AM peak hour inflow is 507 vehicles. AM peak hour outflow is 507 vehicles.*




*PM peak hour inflow is 506 vehicles. PM peak hour outflow is 507 vehicles.*

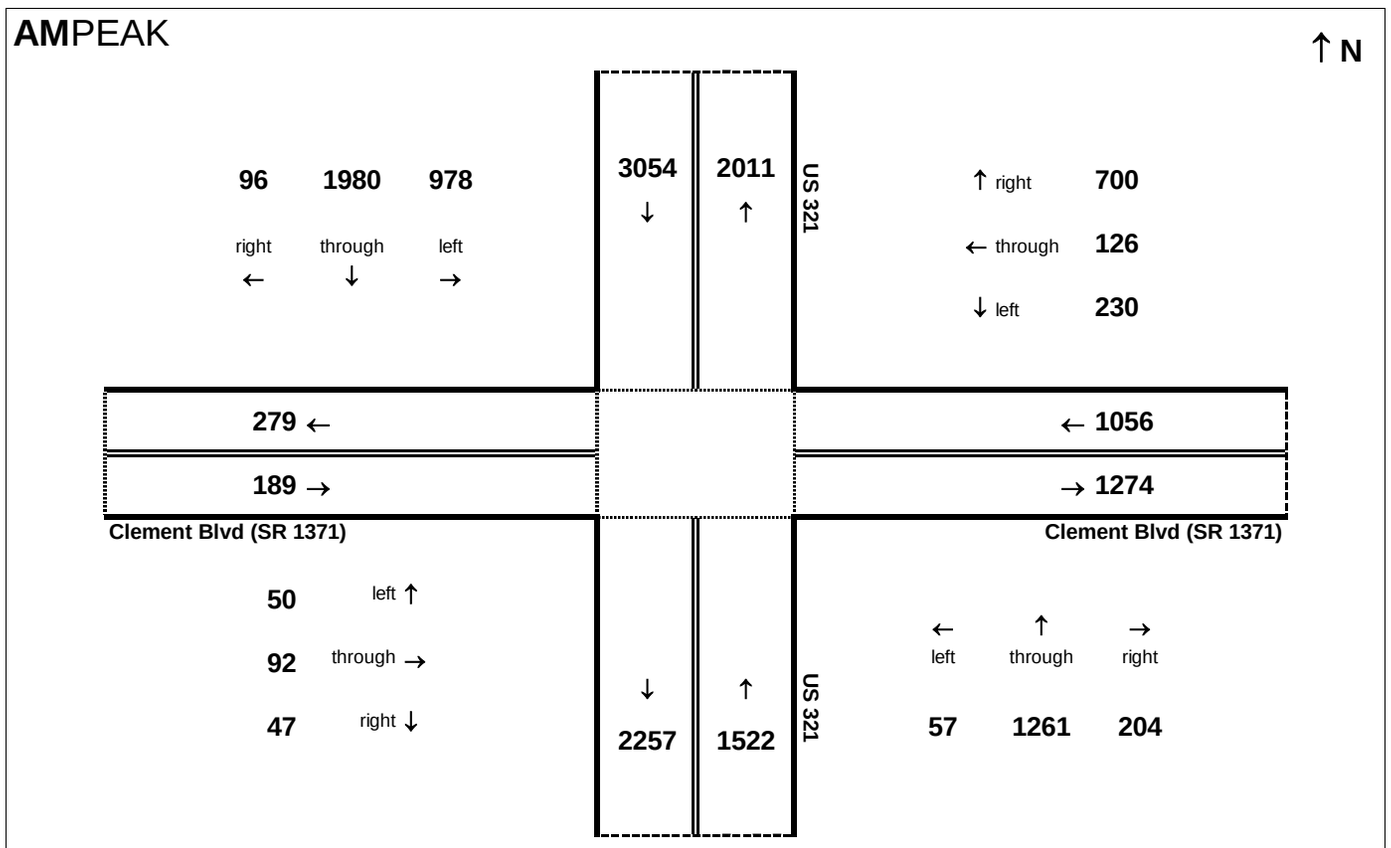



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and Clement Blvd

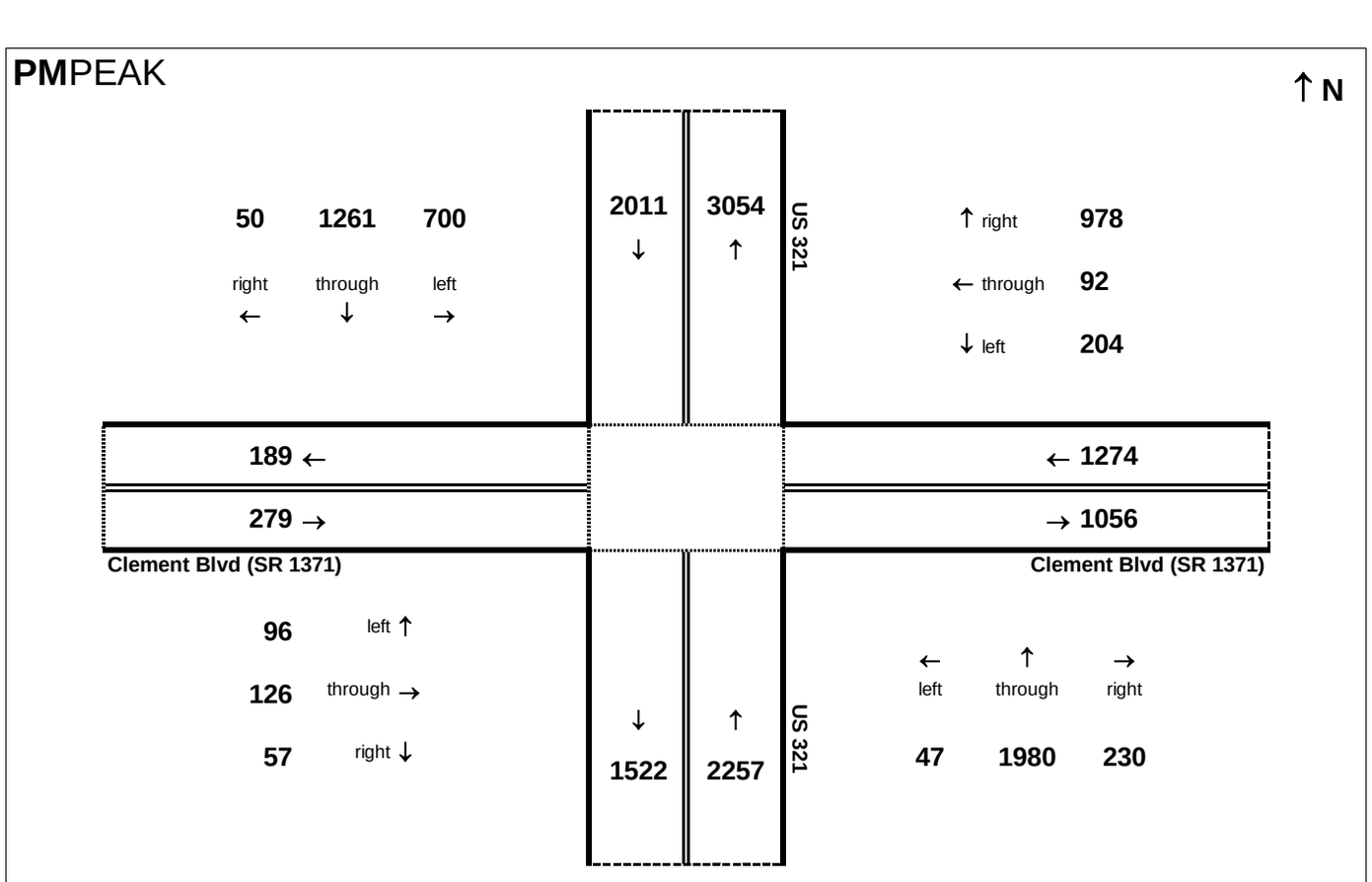
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 1

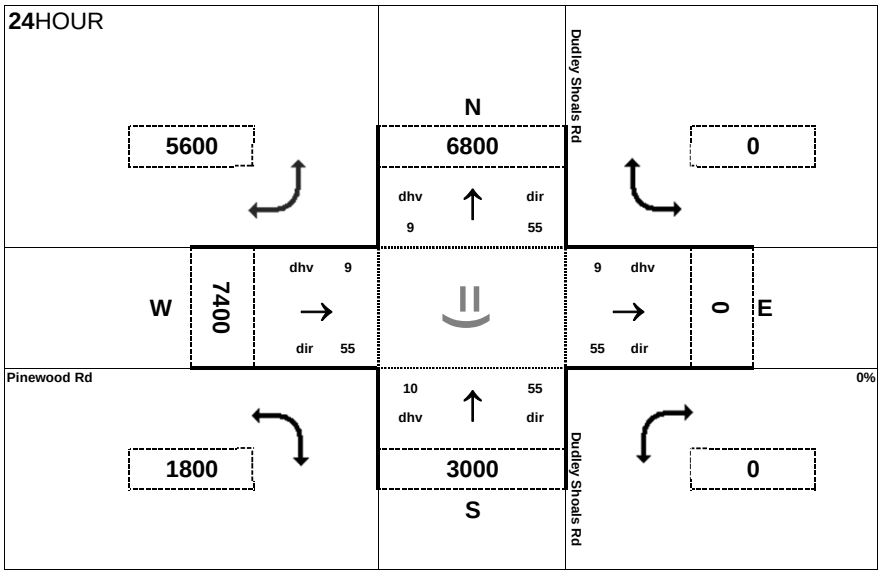
**Project:**
U-4700




*AM peak hour inflow is 5820 vehicles. AM peak hour outflow is 5820 vehicles.*




*PM peak hour inflow is 5820 vehicles. PM peak hour outflow is 5820 vehicles.*

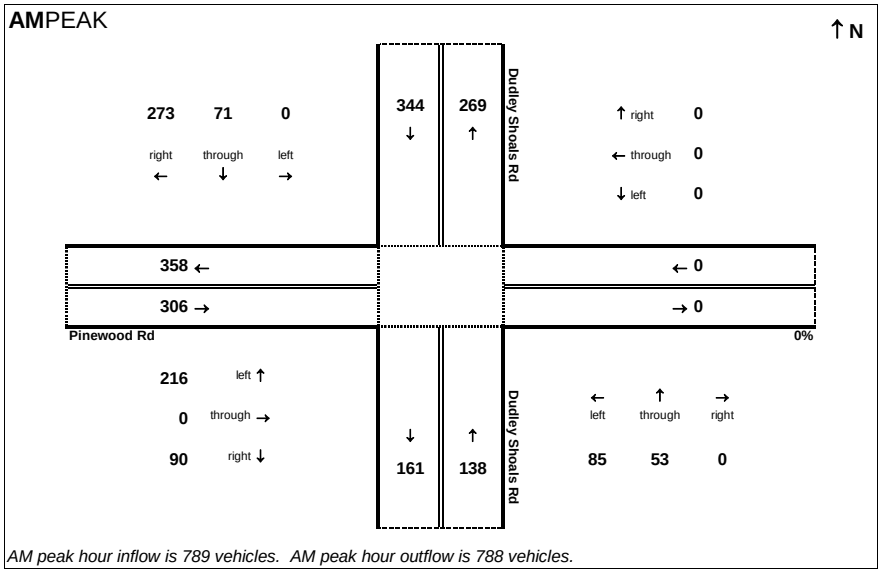



**Peak Hour Volume Breakouts Report:**
Intersection of Dudley Shoals Rd and Pinewood Rd

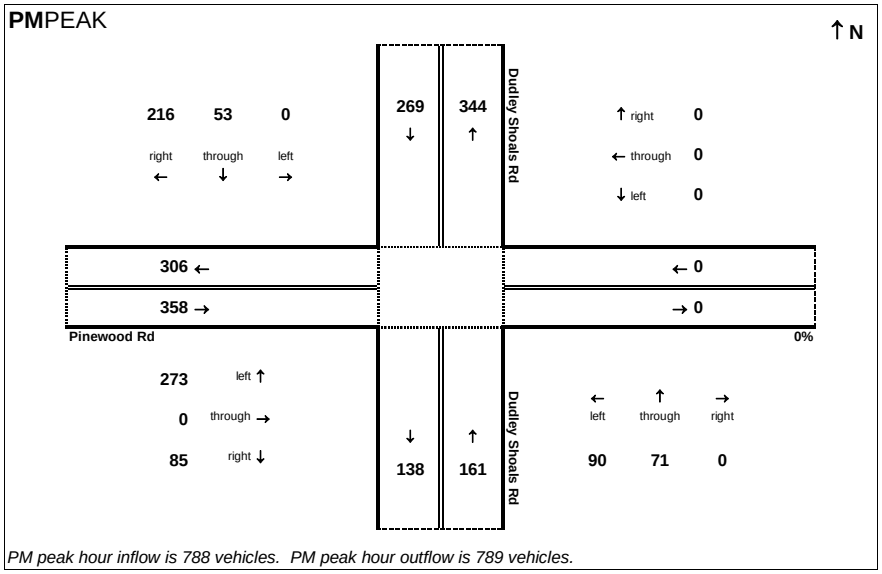
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 1

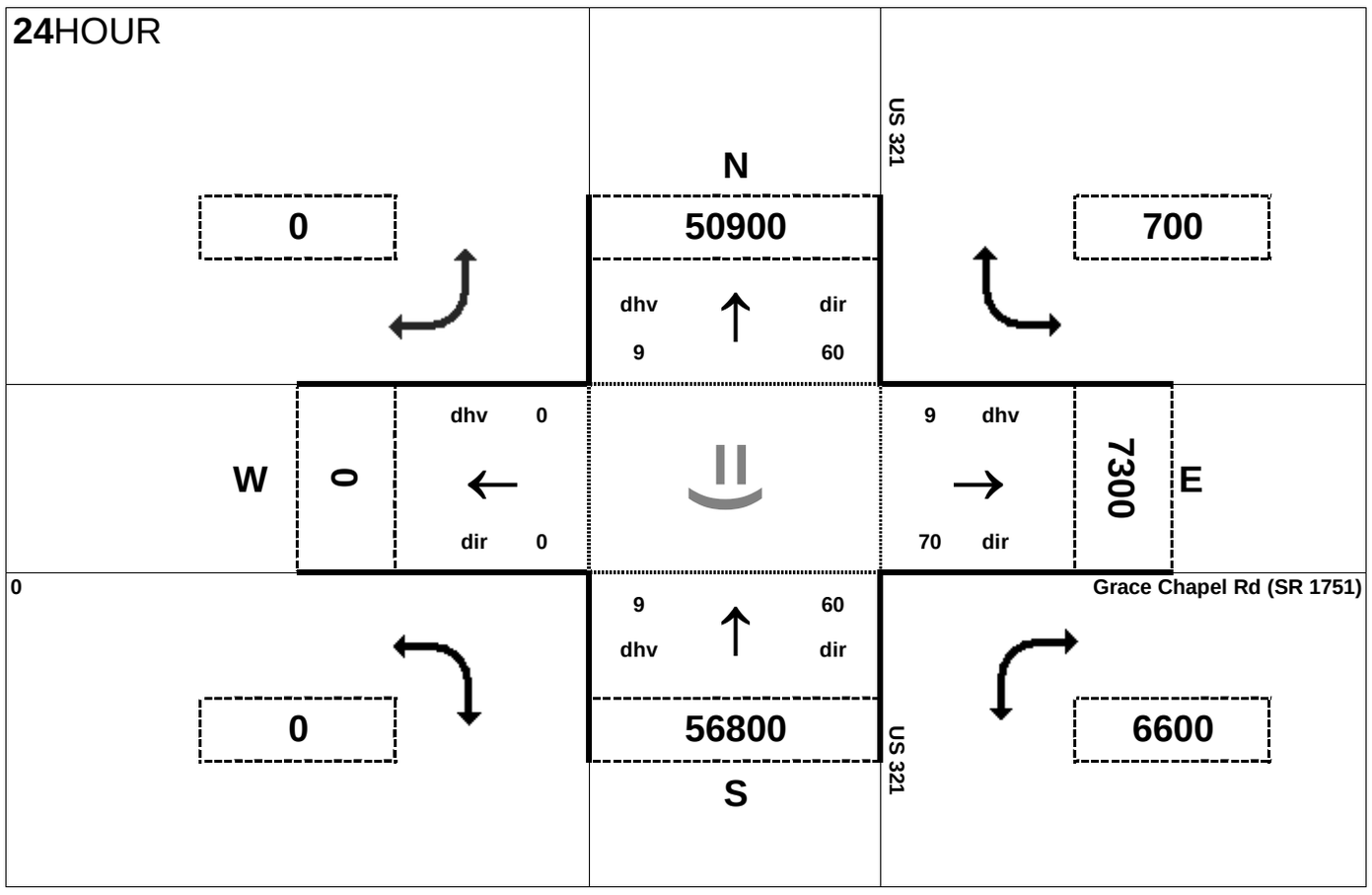
**Project:**
U-4700




*AM peak hour inflow is 789 vehicles. AM peak hour outflow is 788 vehicles.*




*PM peak hour inflow is 788 vehicles. PM peak hour outflow is 789 vehicles.*

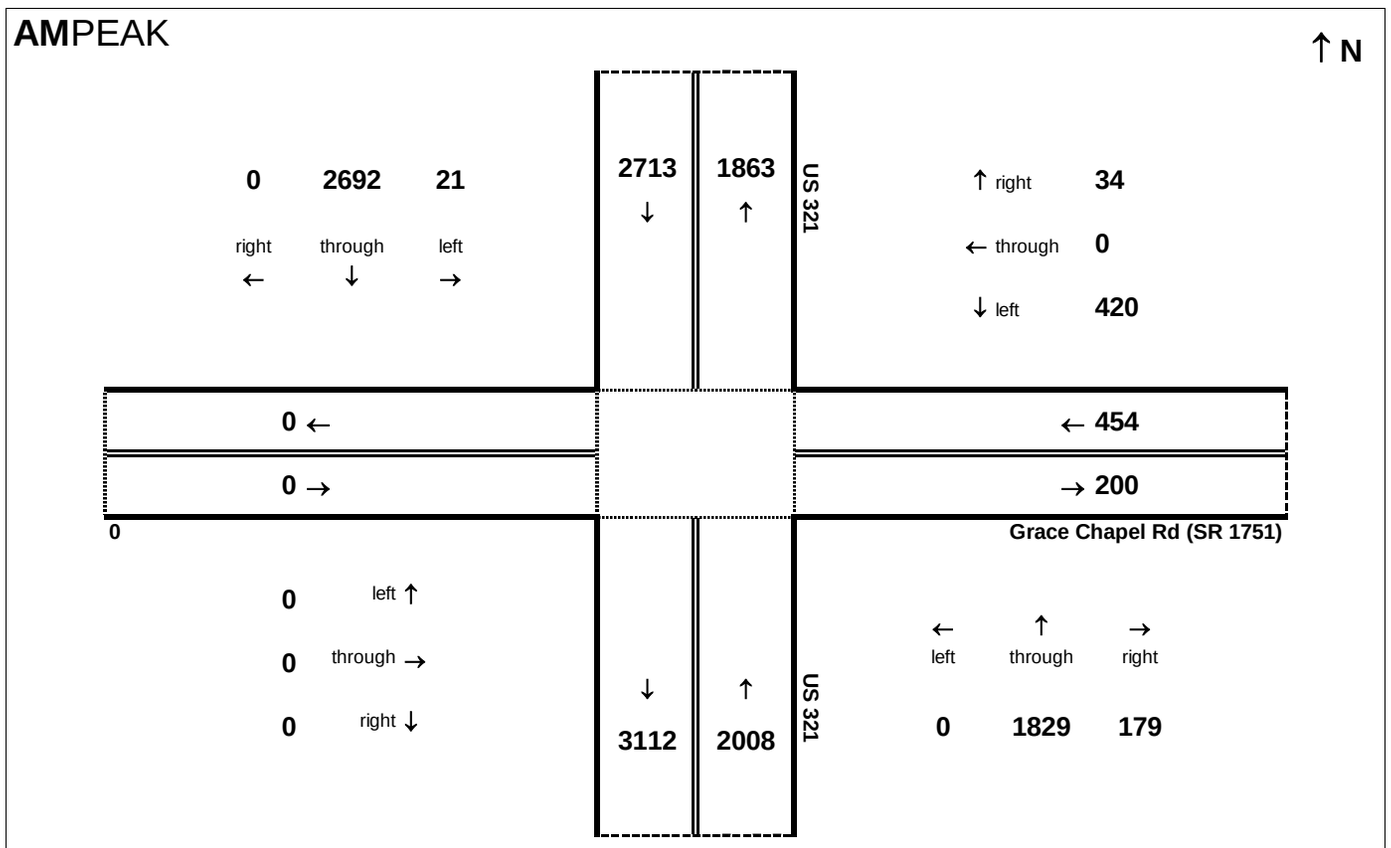



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and Grace Chapel Rd

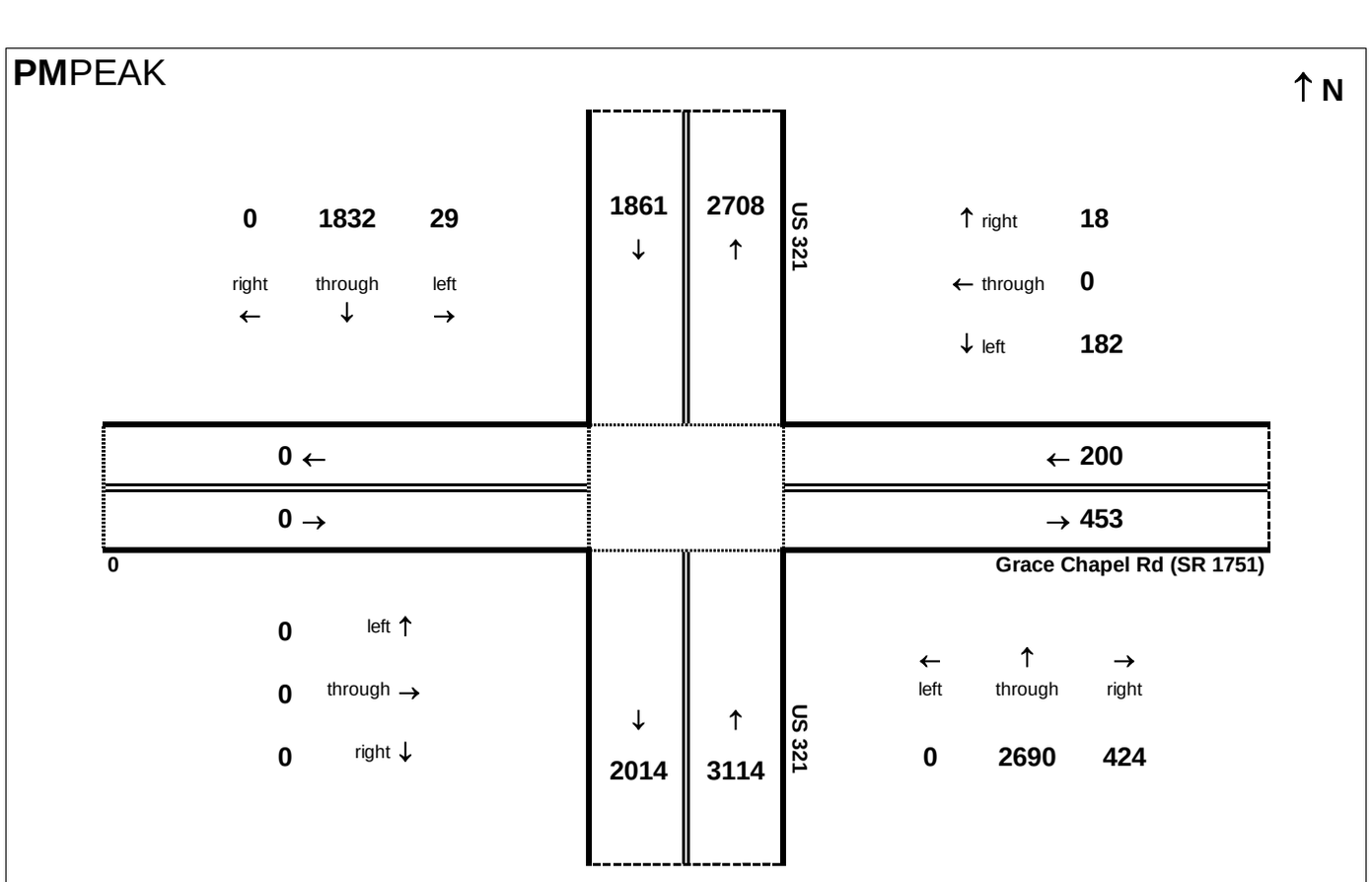
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 1

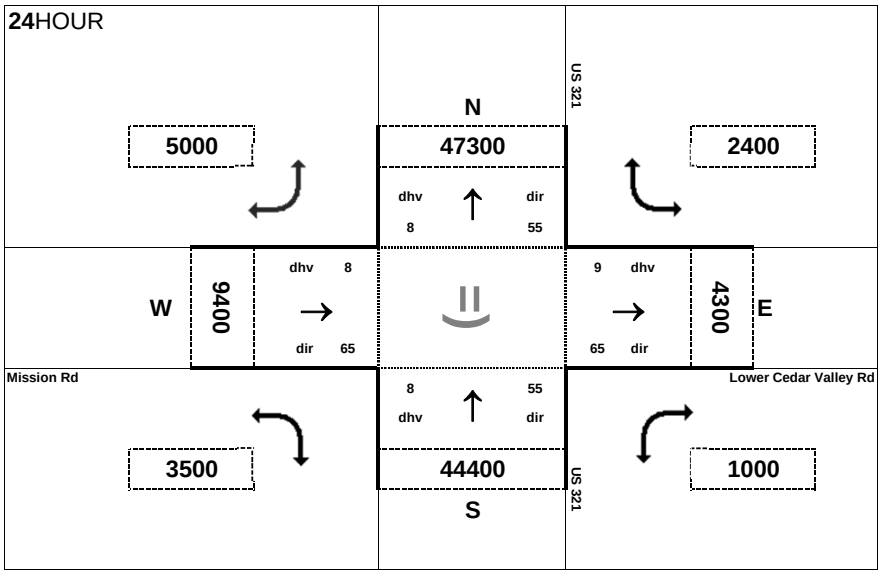
**Project:**
U-4700

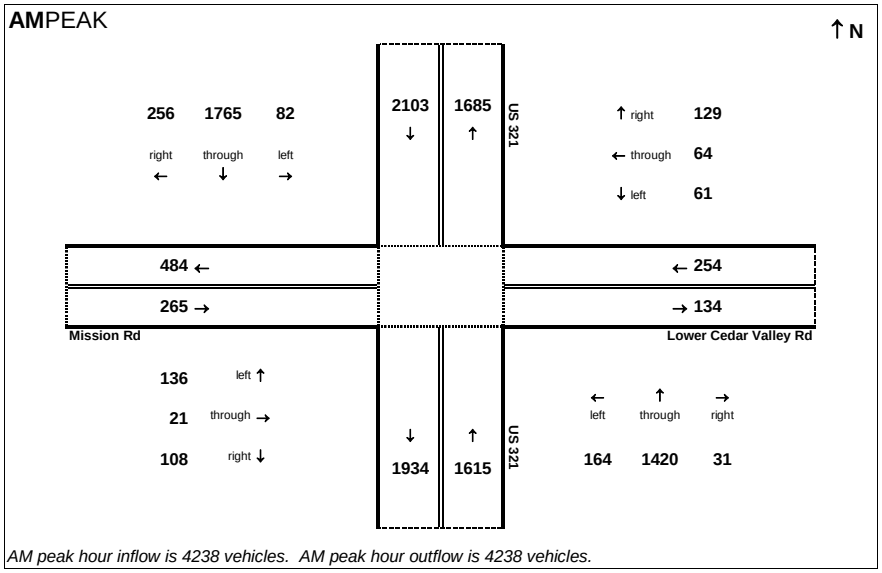



*AM peak hour inflow is 5175 vehicles. AM peak hour outflow is 5175 vehicles.*

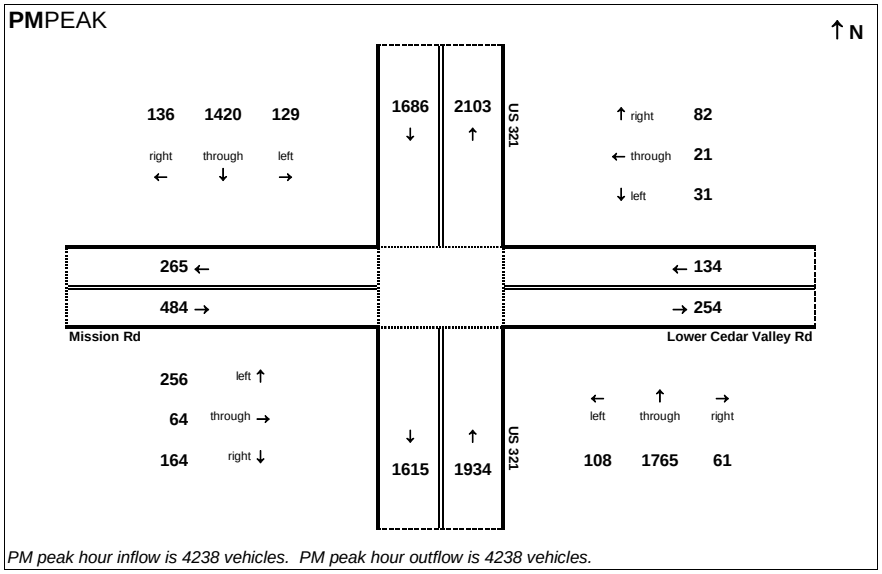



*PM peak hour inflow is 5175 vehicles. PM peak hour outflow is 5175 vehicles.*




*AM peak hour inflow is 4238 vehicles. AM peak hour outflow is 4238 vehicles.*



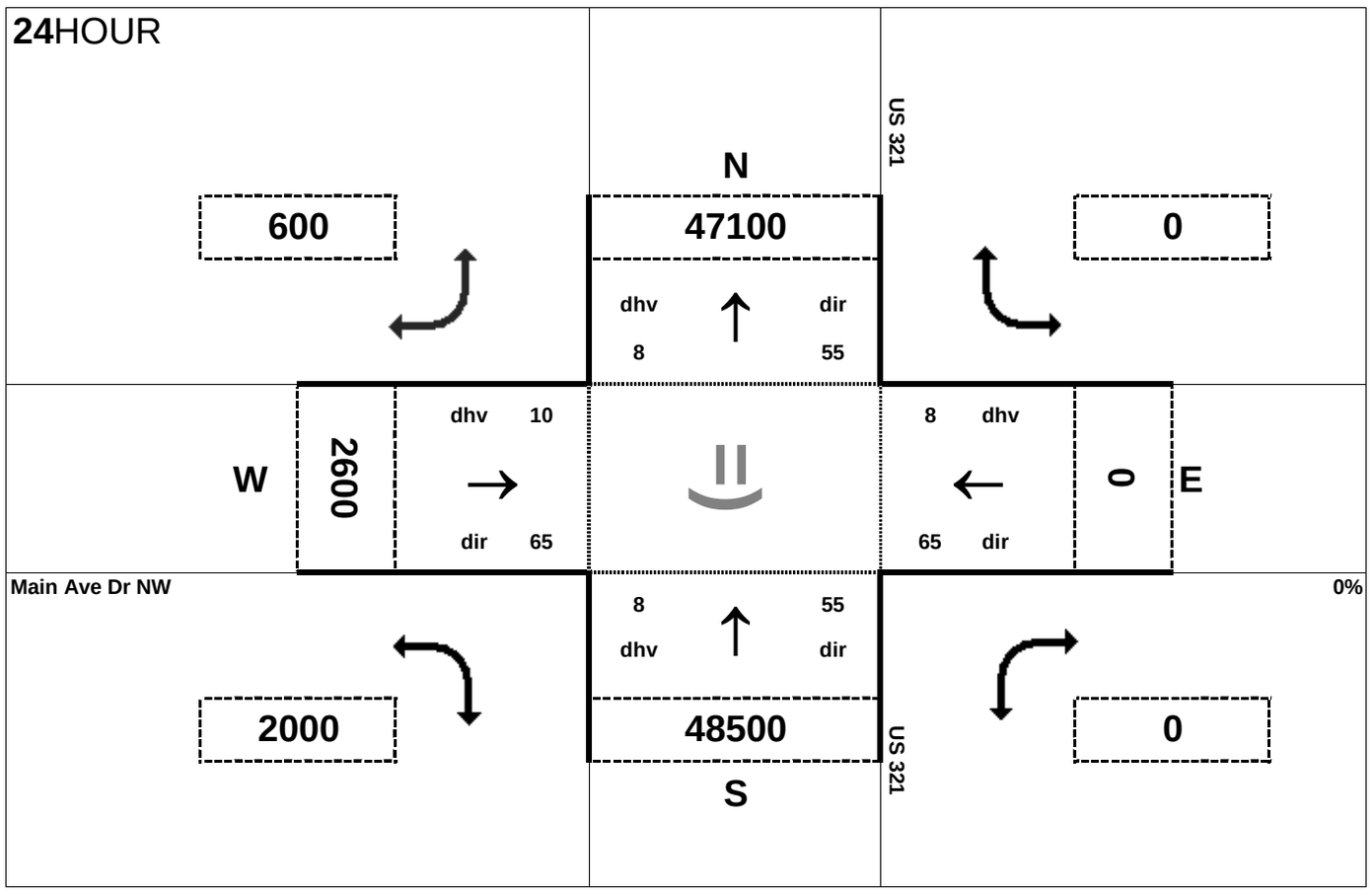

*PM peak hour inflow is 4238 vehicles. PM peak hour outflow is 4238 vehicles.*

**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and Lower Cedar Valley Rd / Mission Rd

**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 1

**Project:**
U-4700

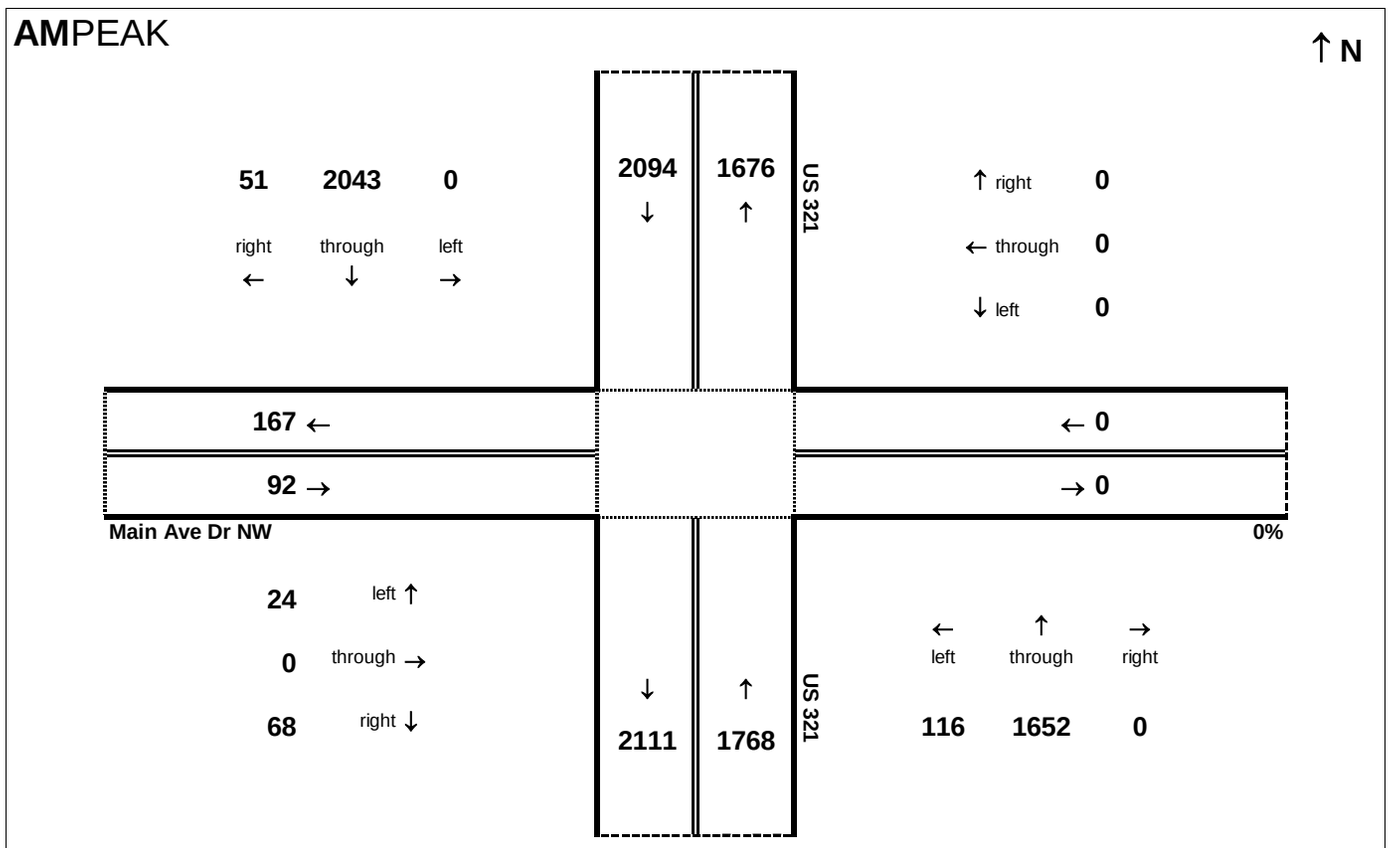



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and Main Ave Dr NW

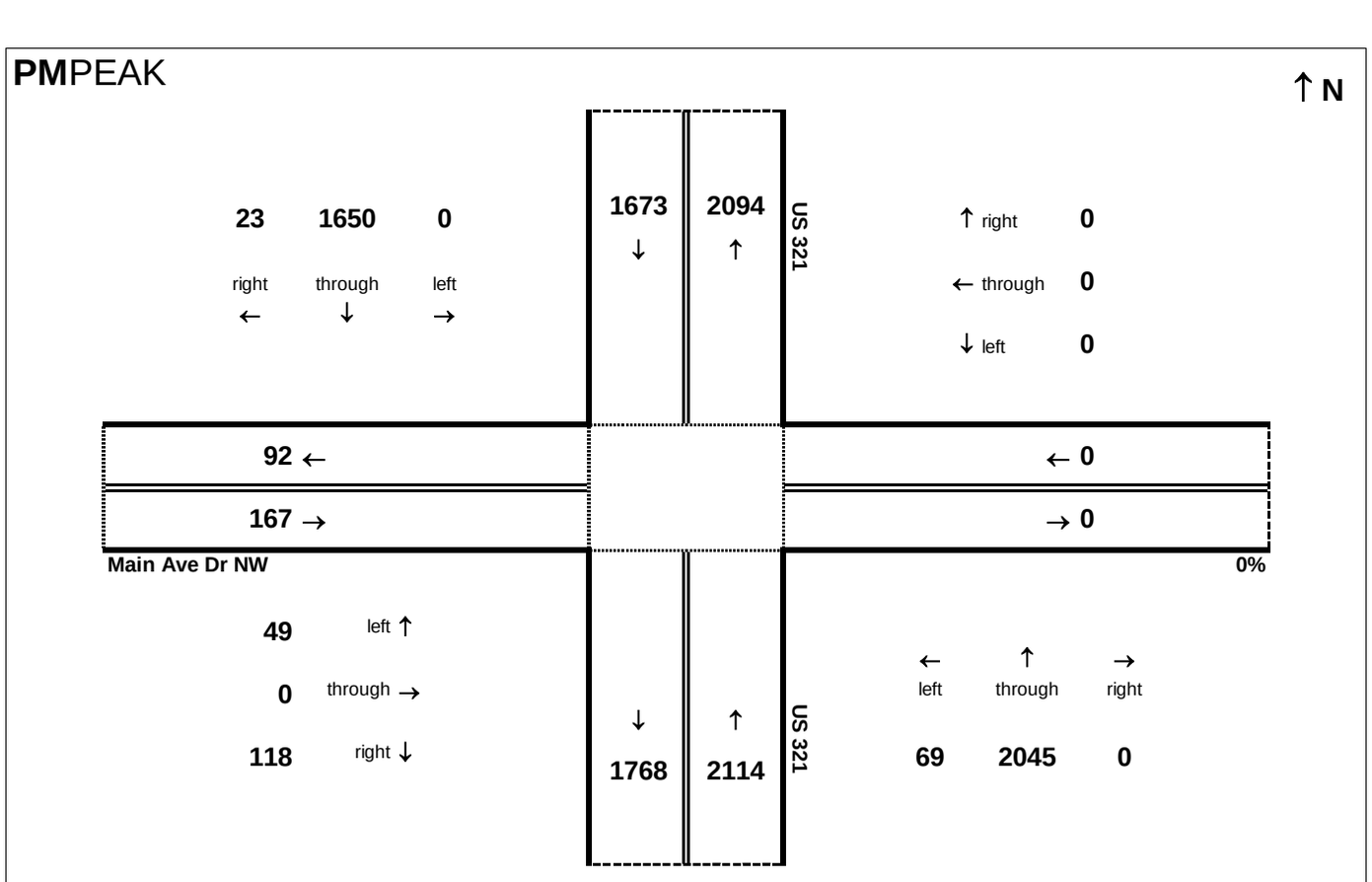
**Traffic Forecast Release Date:**
February-17

**Traffic Data Year:**
2040 Build 1

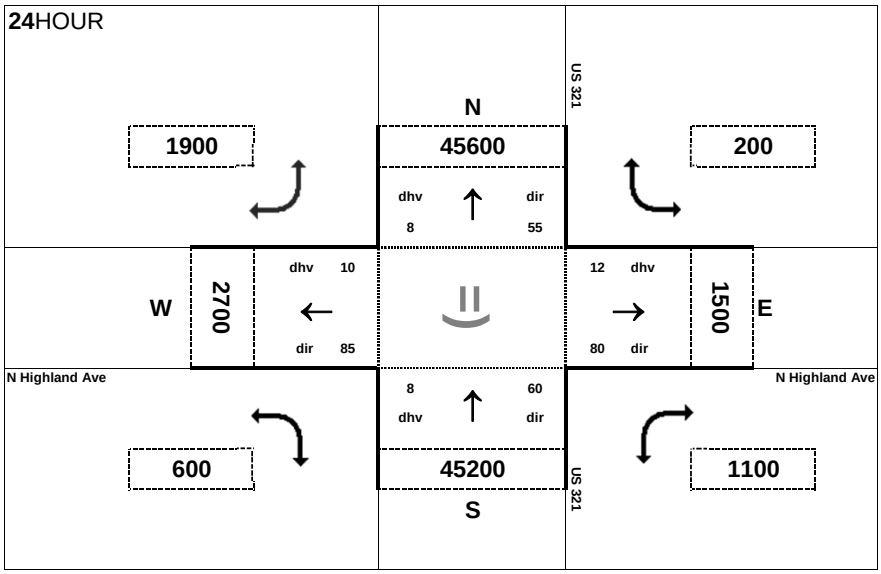
**Project:**
U-4700




*AM peak hour inflow is 3954 vehicles. AM peak hour outflow is 3954 vehicles.*




*PM peak hour inflow is 3954 vehicles. PM peak hour outflow is 3954 vehicles.*

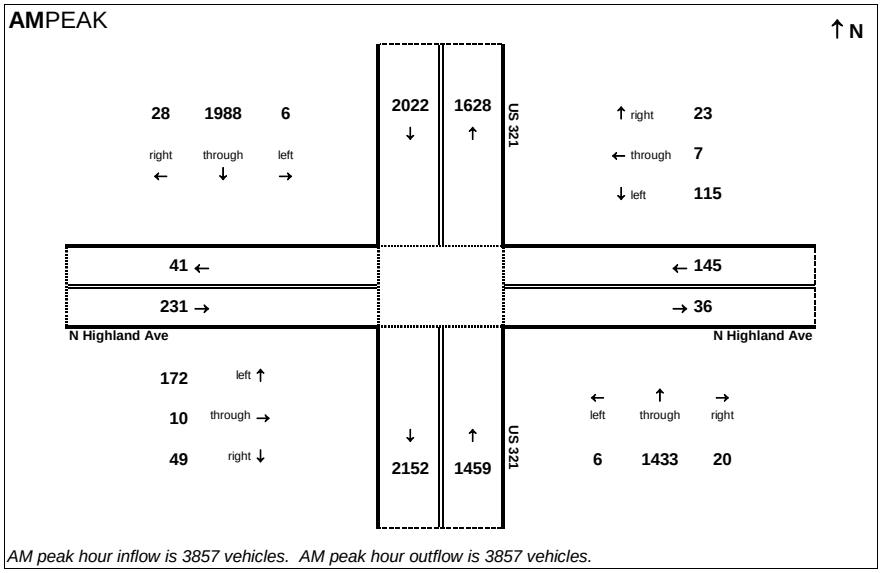



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and North Highland Ave

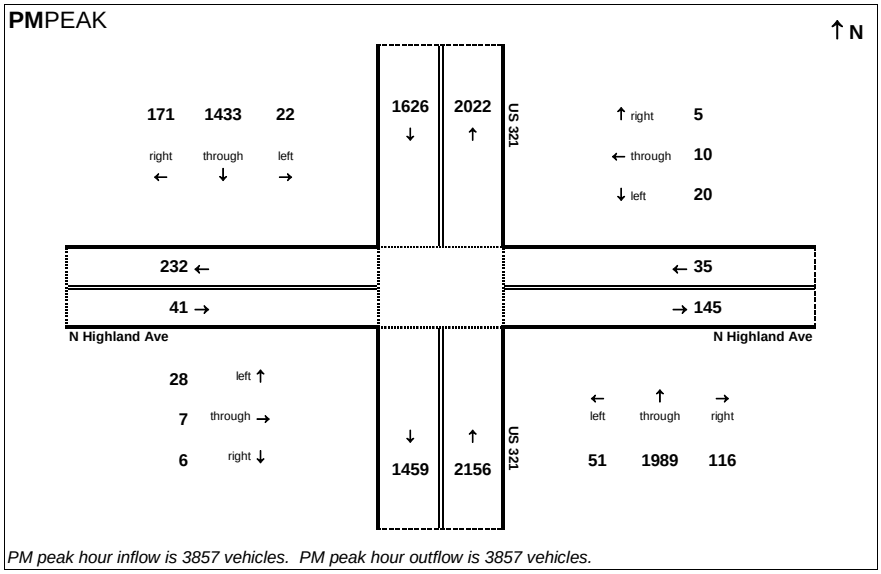
**Traffic Forecast Release Date:**
February-17

**Traffic Data Year:**
2040 Build 1

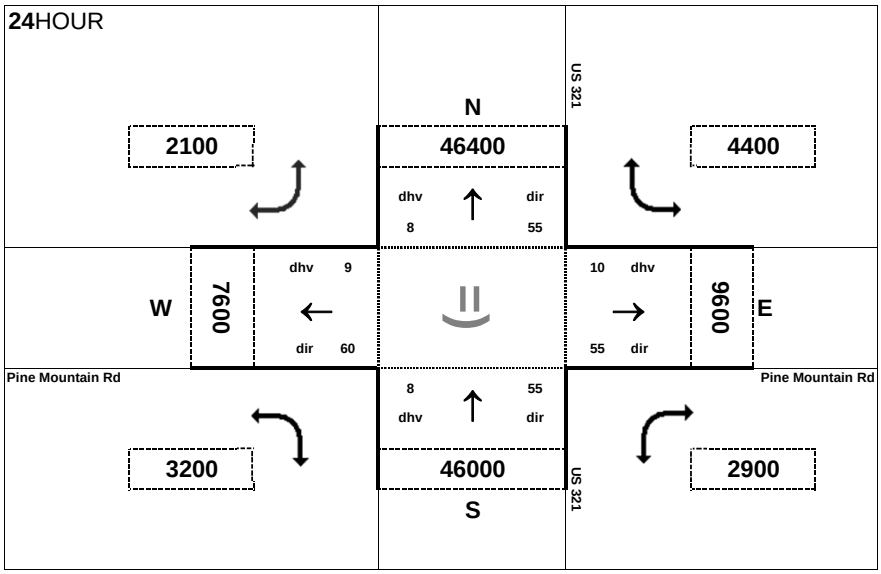
**Project:**
U-4700




*AM peak hour inflow is 3857 vehicles. AM peak hour outflow is 3857 vehicles.*




*PM peak hour inflow is 3857 vehicles. PM peak hour outflow is 3857 vehicles.*

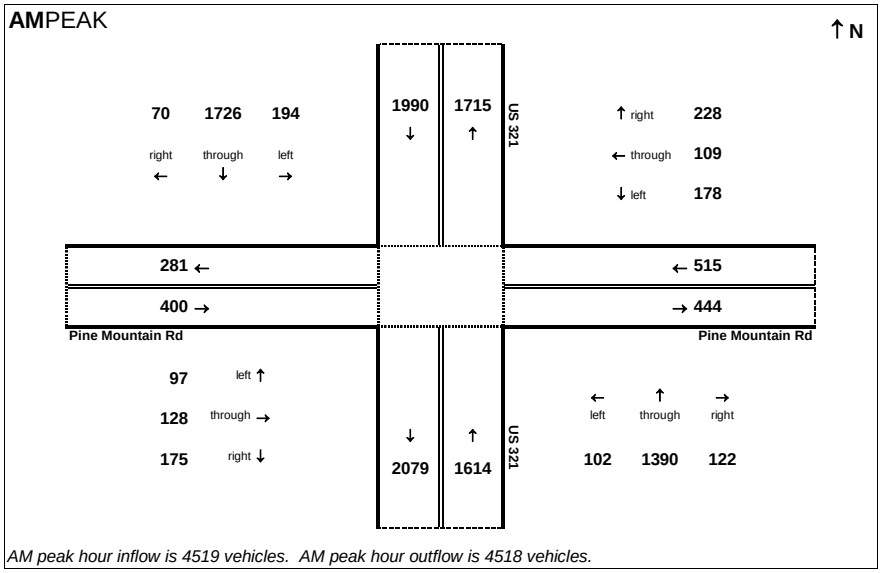



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and Pine Mountain Rd

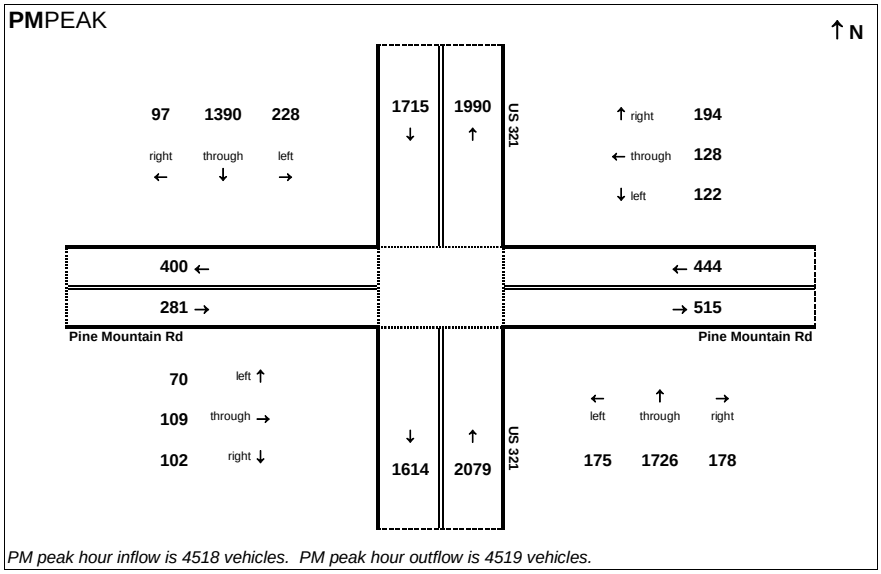
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 1

**Project:**
U-4700




*AM peak hour inflow is 4519 vehicles. AM peak hour outflow is 4518 vehicles.*



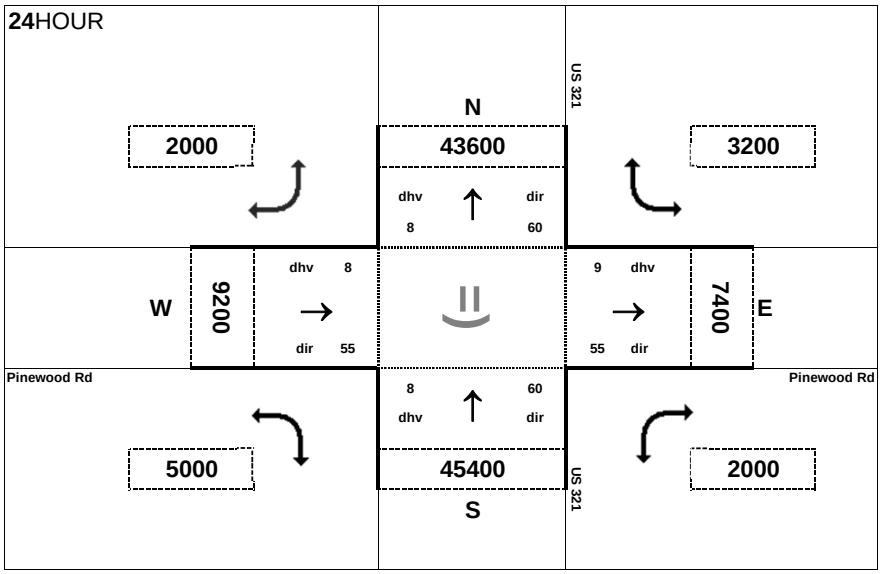

*PM peak hour inflow is 4518 vehicles. PM peak hour outflow is 4519 vehicles.*

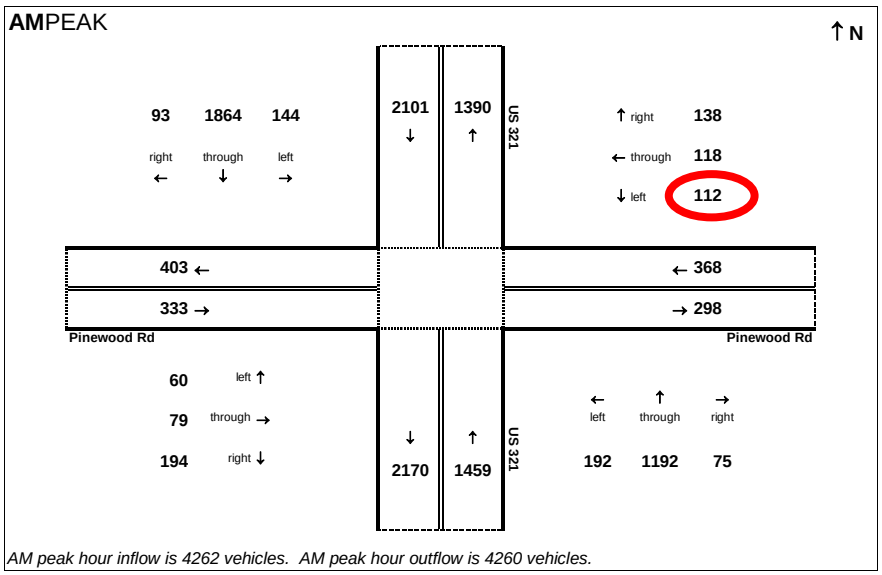
**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and Pinewood Rd

**Traffic Forecast Release Date:**
December-16

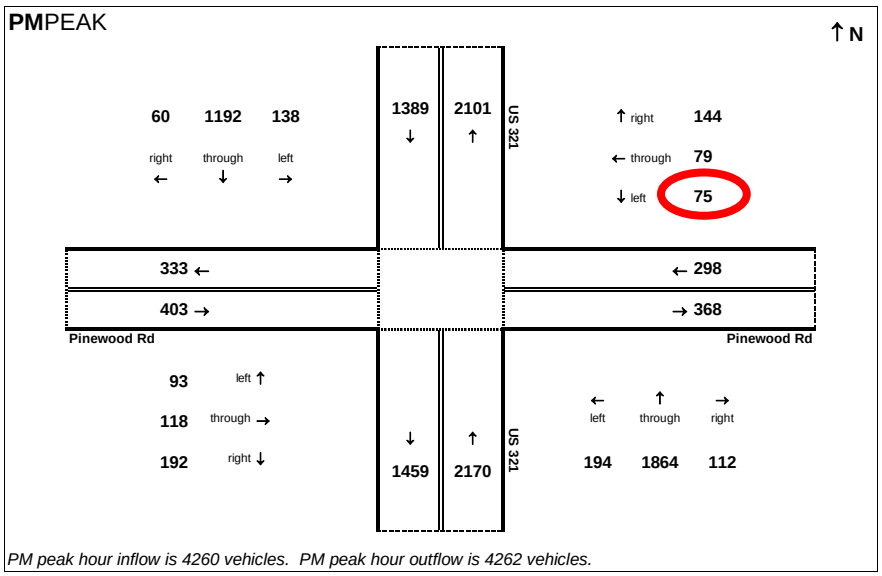
**Traffic Data Year:**
2040 Build 1

**Project:**
U-4700

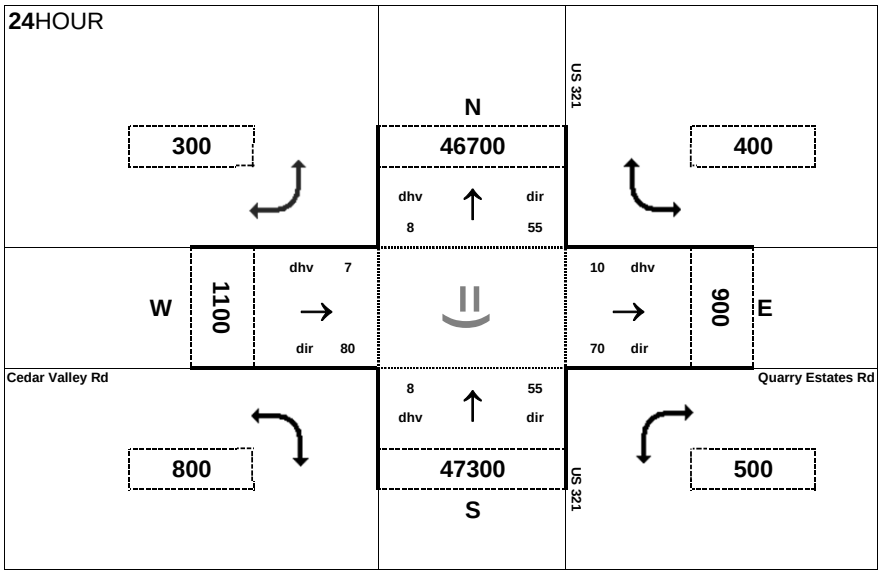



*AM peak hour inflow is 4262 vehicles. AM peak hour outflow is 4260 vehicles.*




*PM peak hour inflow is 4260 vehicles. PM peak hour outflow is 4262 vehicles.*

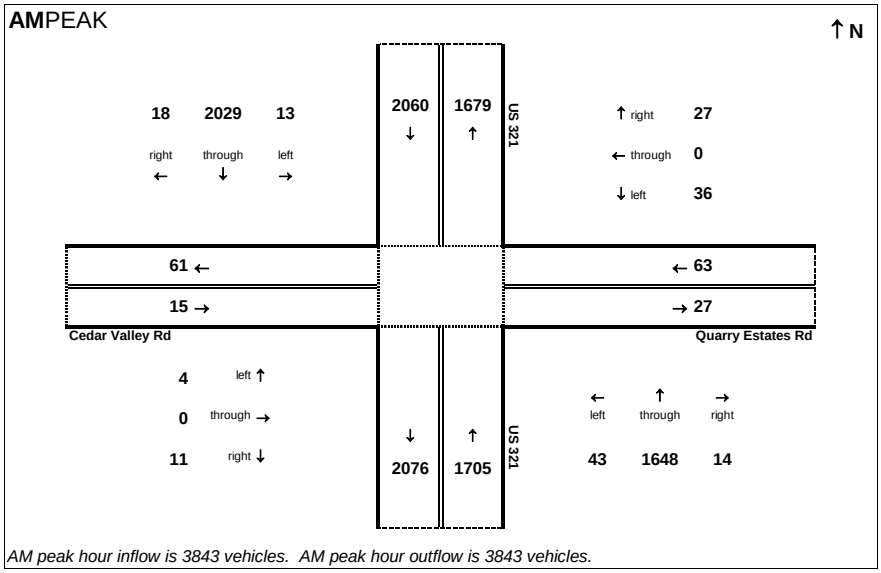



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and Quarry Estates Rd / Cedar Valley Rd

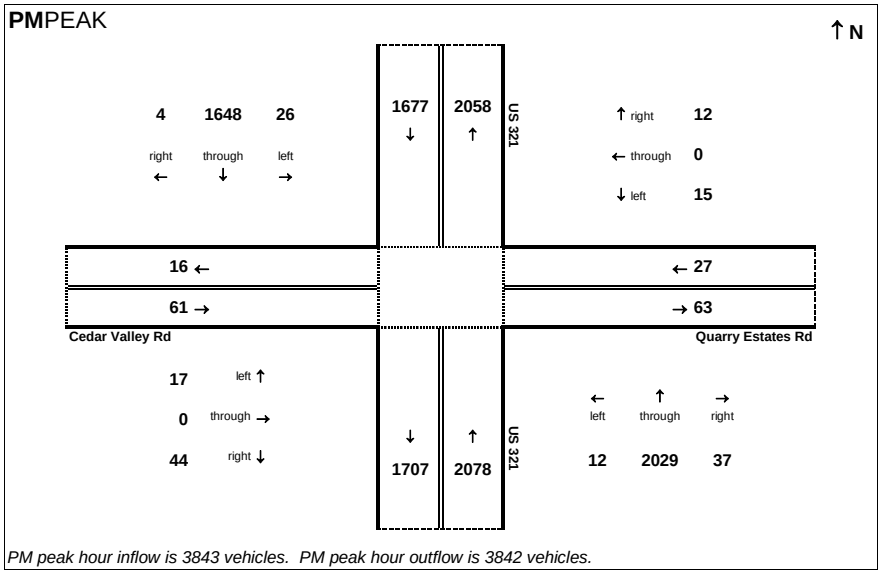
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 1

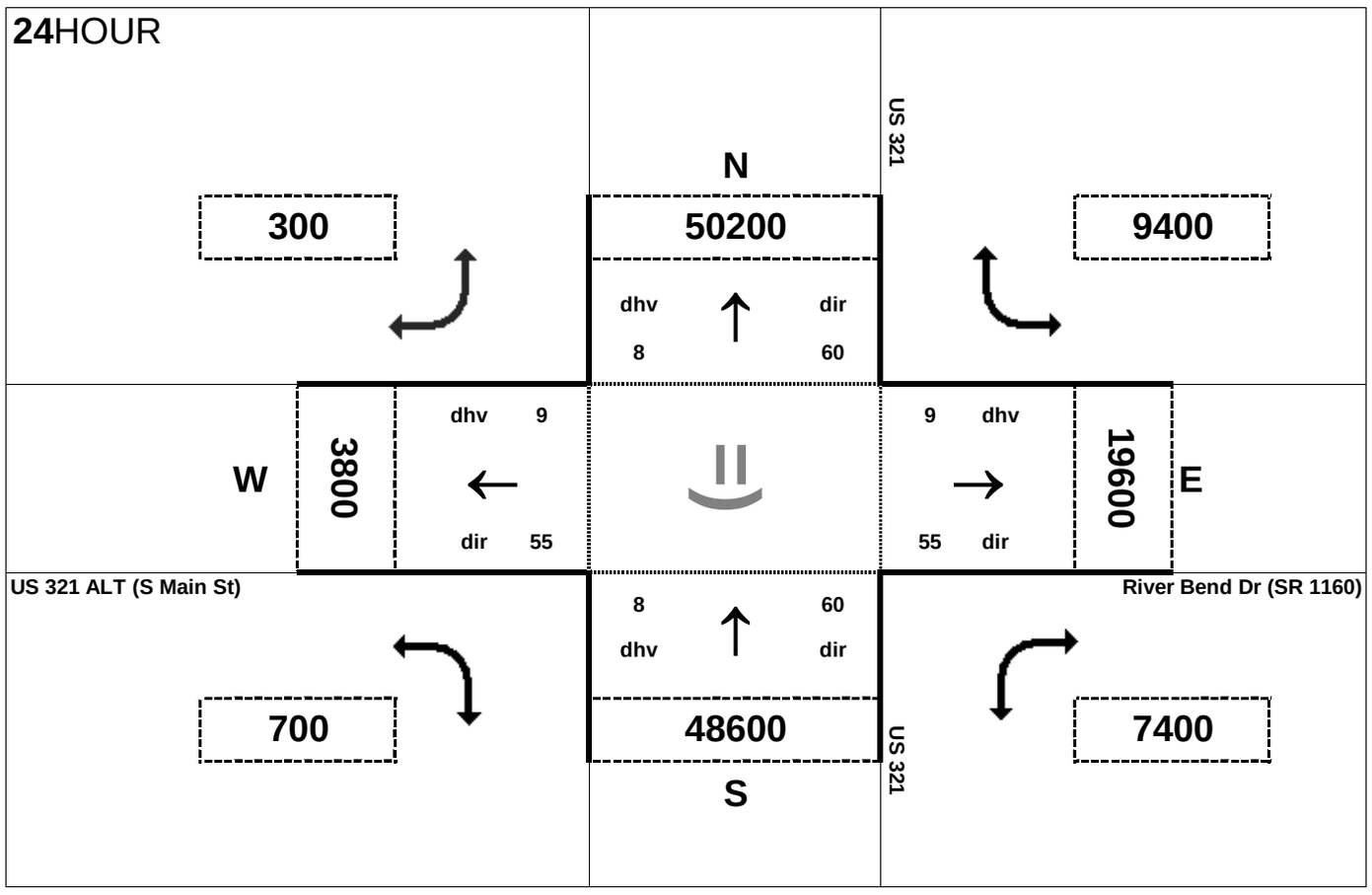
**Project:**
U-4700




*AM peak hour inflow is 3843 vehicles. AM peak hour outflow is 3843 vehicles.*




*PM peak hour inflow is 3843 vehicles. PM peak hour outflow is 3842 vehicles.*

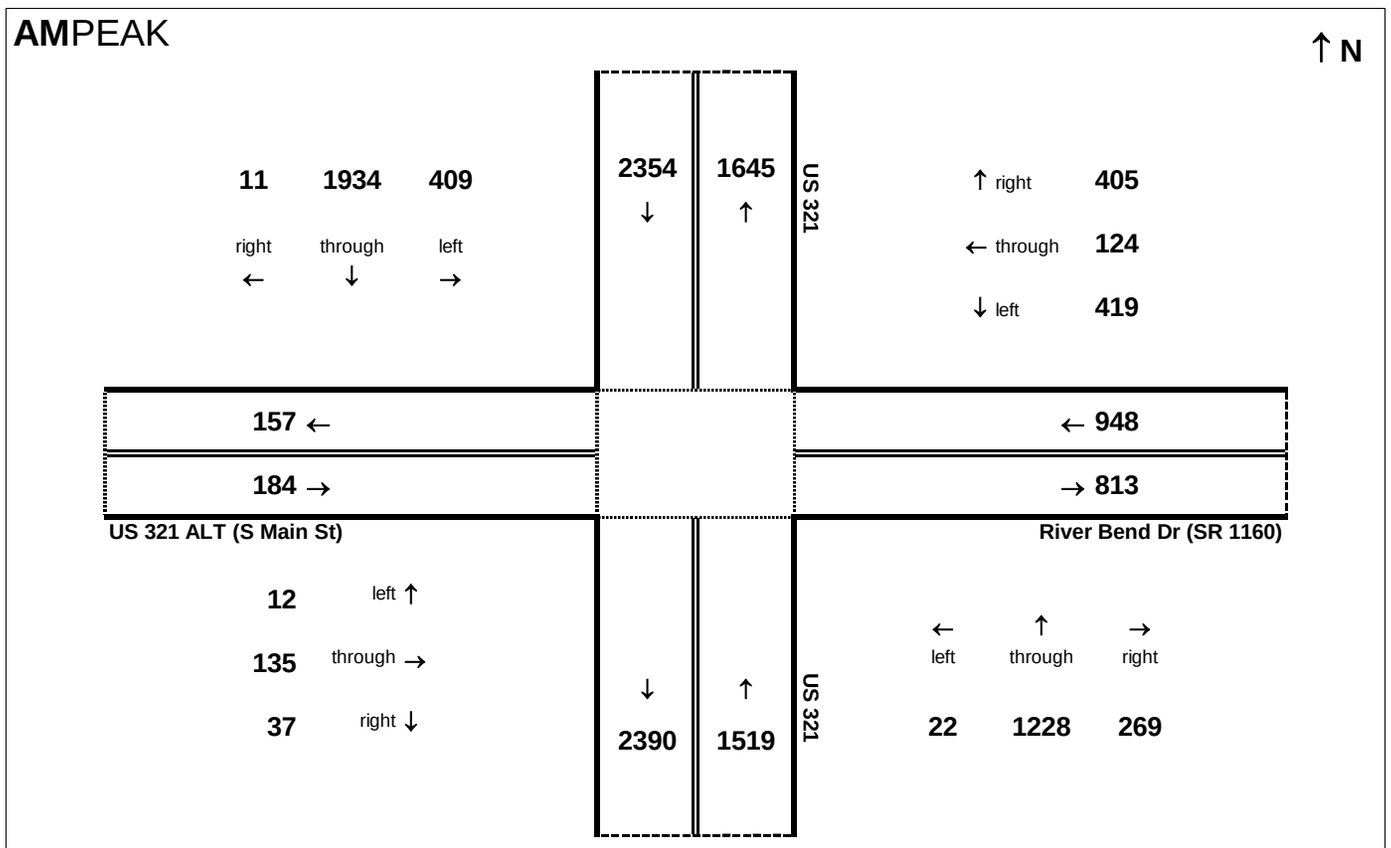



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and US 321 ALT

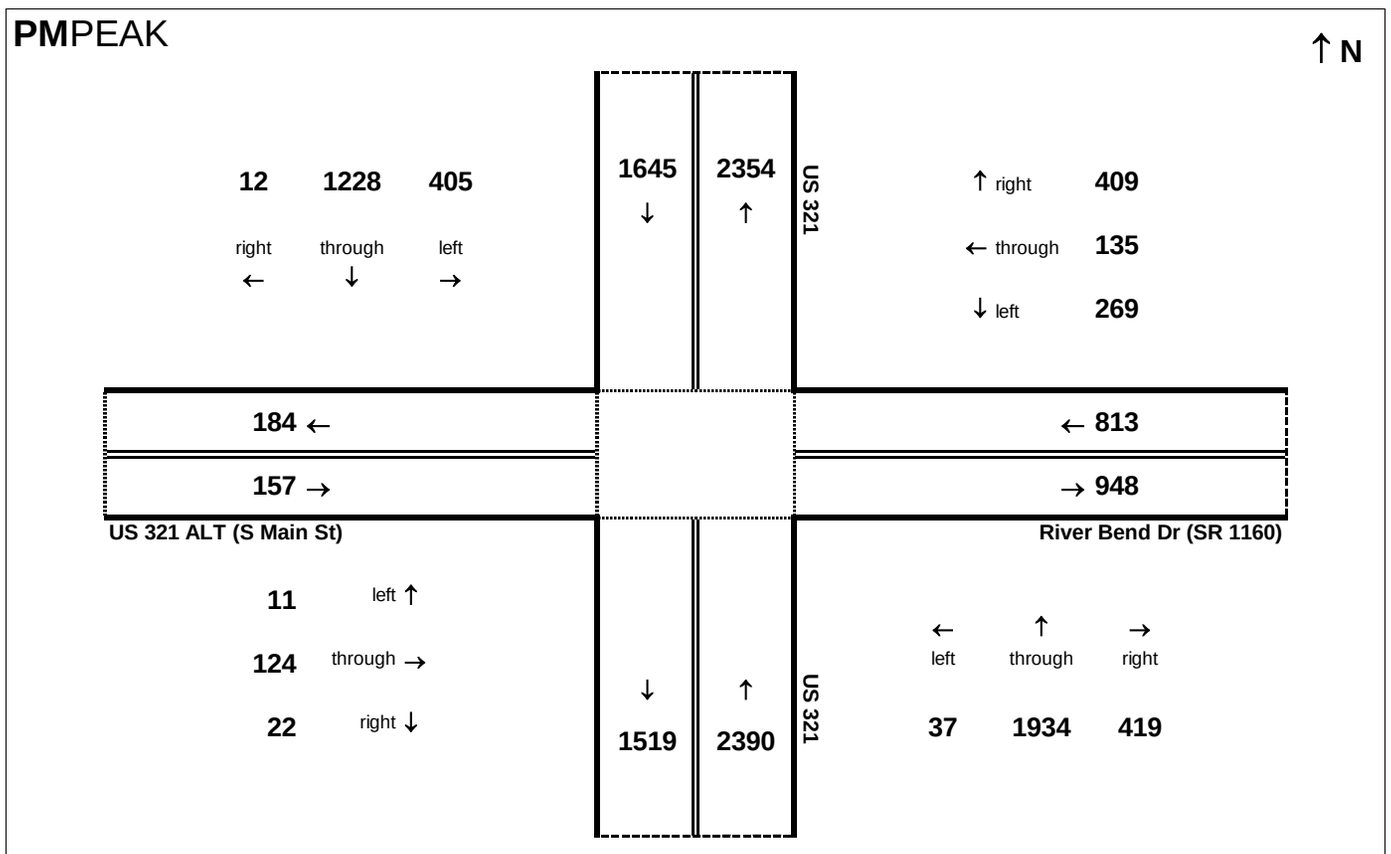
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 1

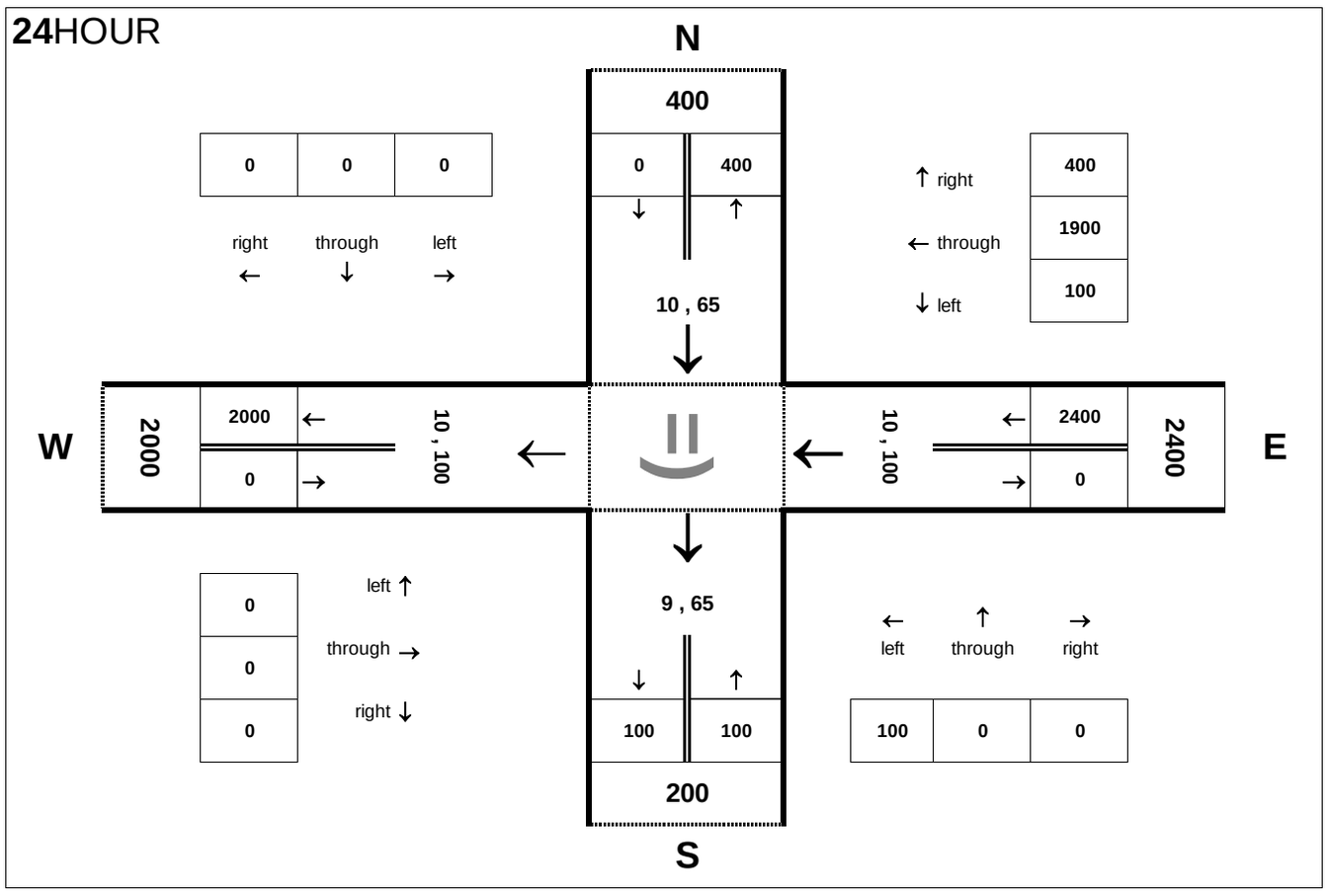
**Project:**
U-4700

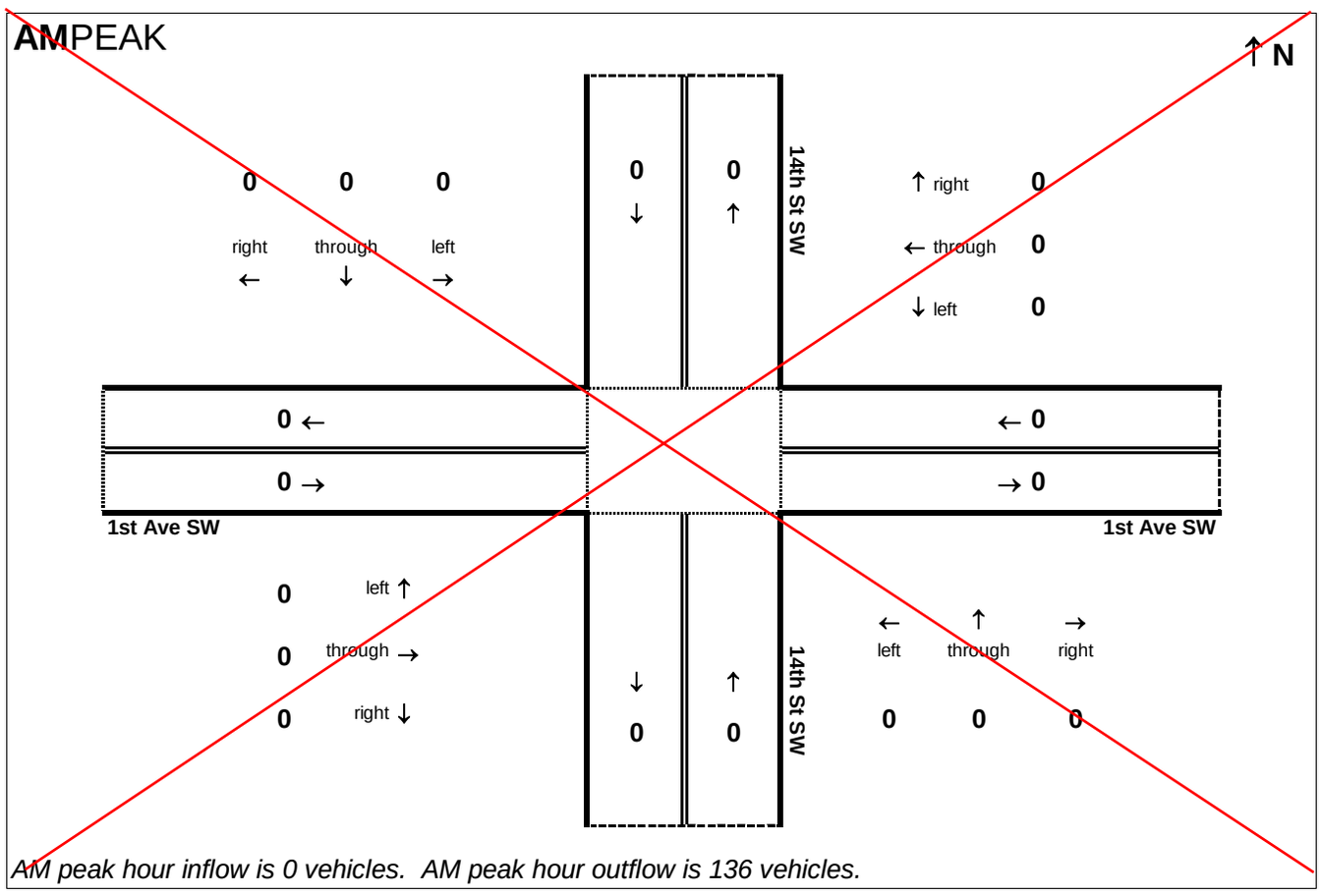



*AM peak hour inflow is 5005 vehicles. AM peak hour outflow is 5005 vehicles.*

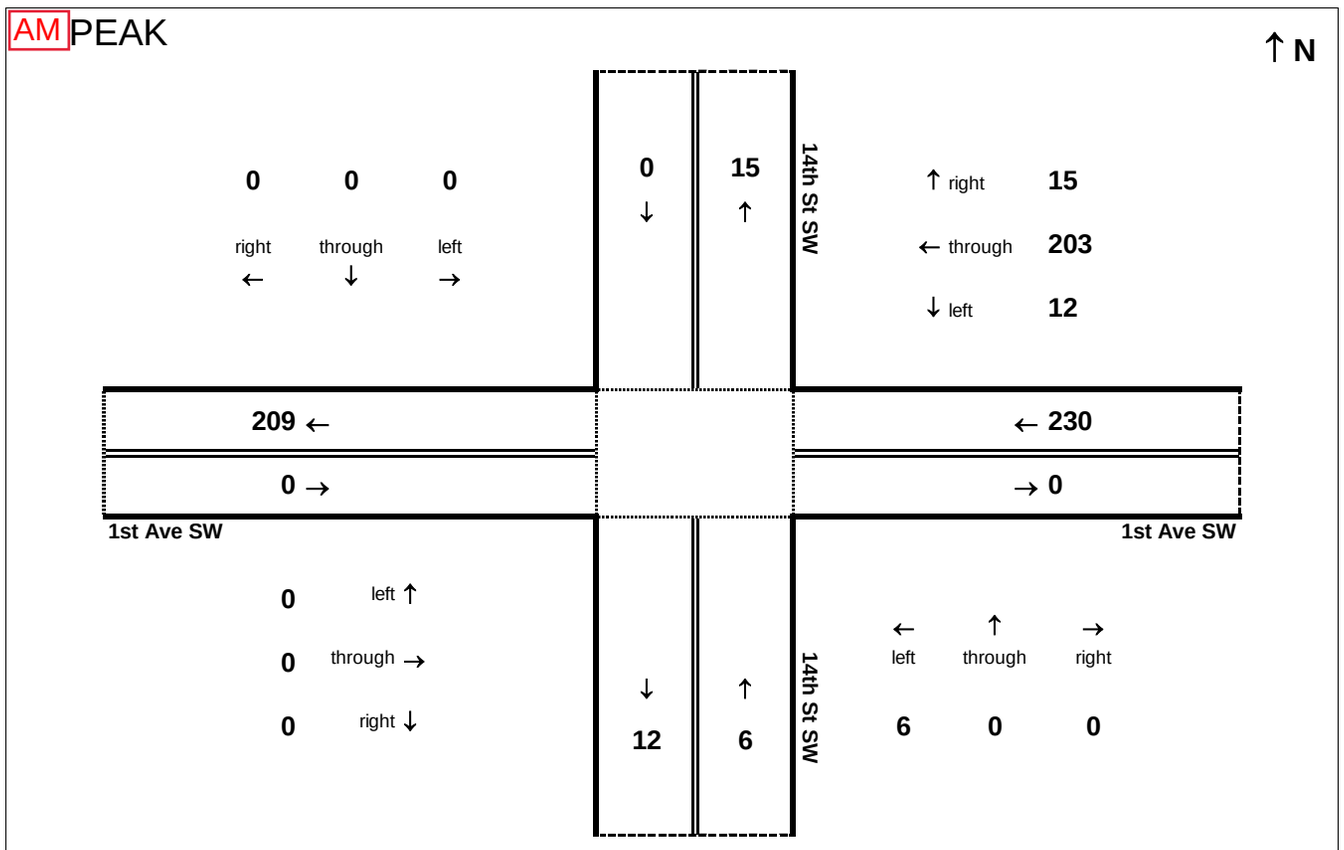



*PM peak hour inflow is 5005 vehicles. PM peak hour outflow is 5005 vehicles.*




*AM peak hour inflow is 0 vehicles. AM peak hour outflow is 136 vehicles.*




*PM peak hour inflow is 236 vehicles. PM peak hour outflow is 236 vehicles.*

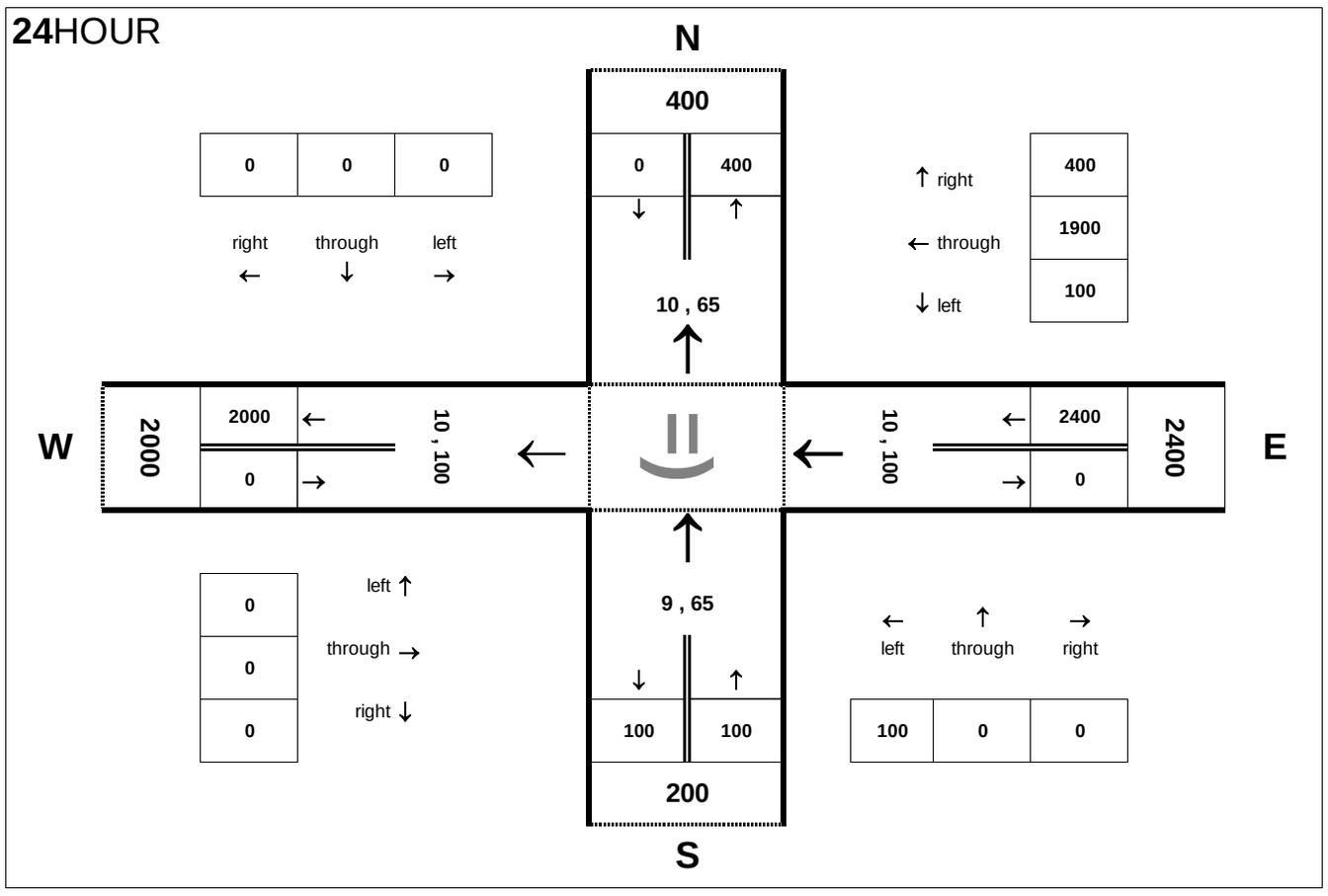
**Peak Hour Volume Breakouts Report:**
Intersection of 1st Ave SW and 14th St SW

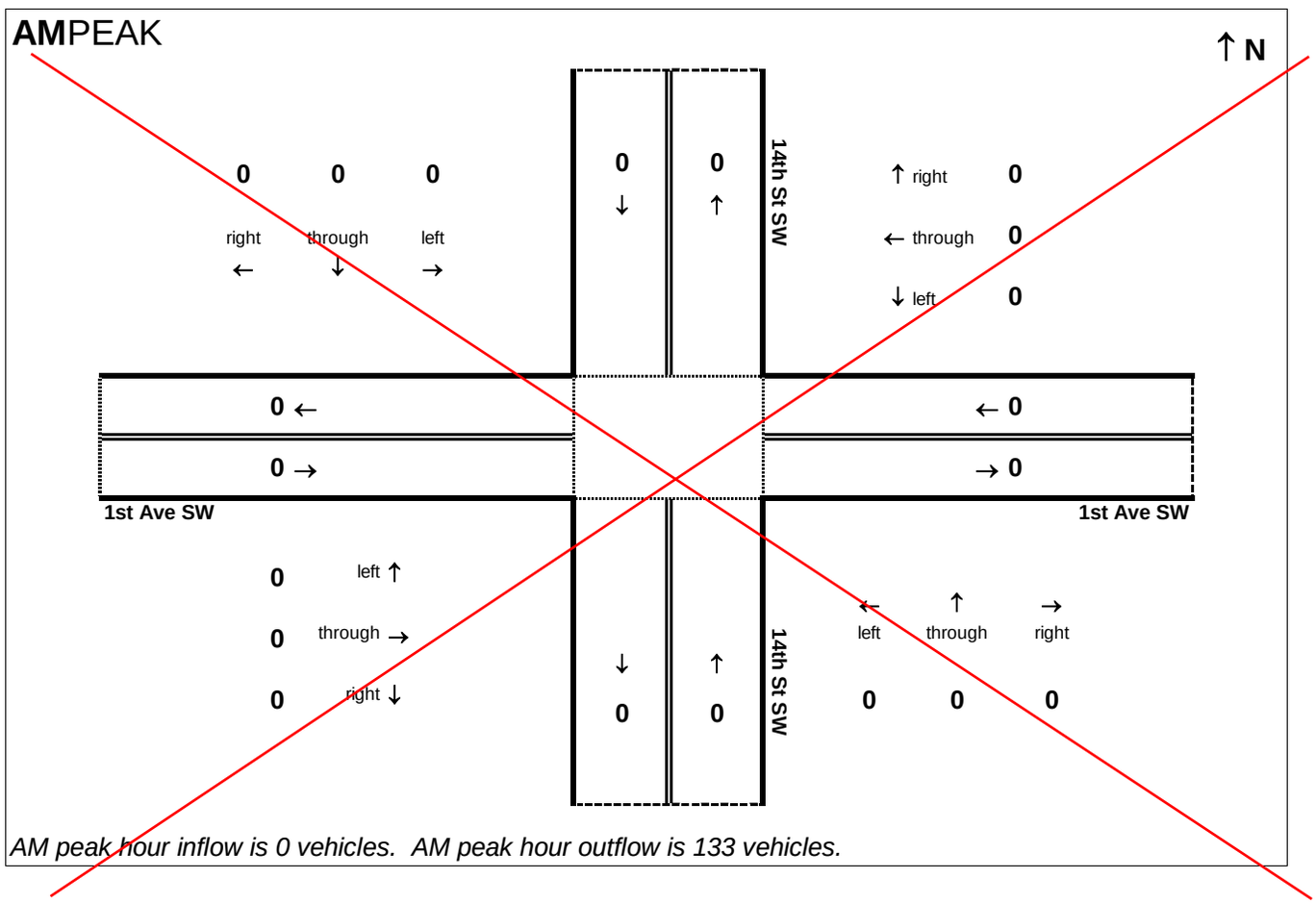
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 2

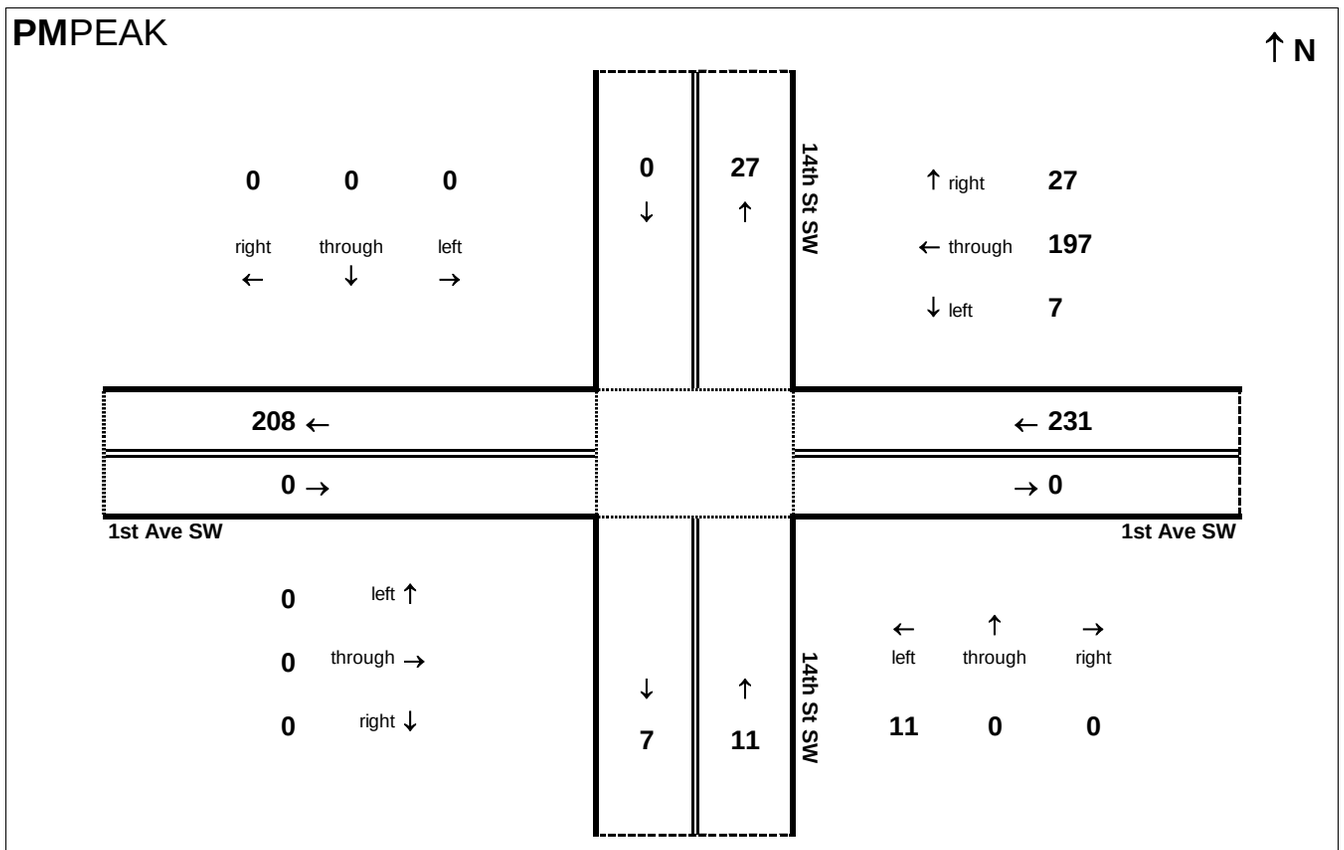
**Project:**
U-4700

Note: In order to use the spreadsheet program, and use the 100% directional in the AM on the one-way street(s), the input directionals for the two way moves were reversed, and the pm output data was used for the am.




*AM peak hour inflow is 0 vehicles. AM peak hour outflow is 133 vehicles.*



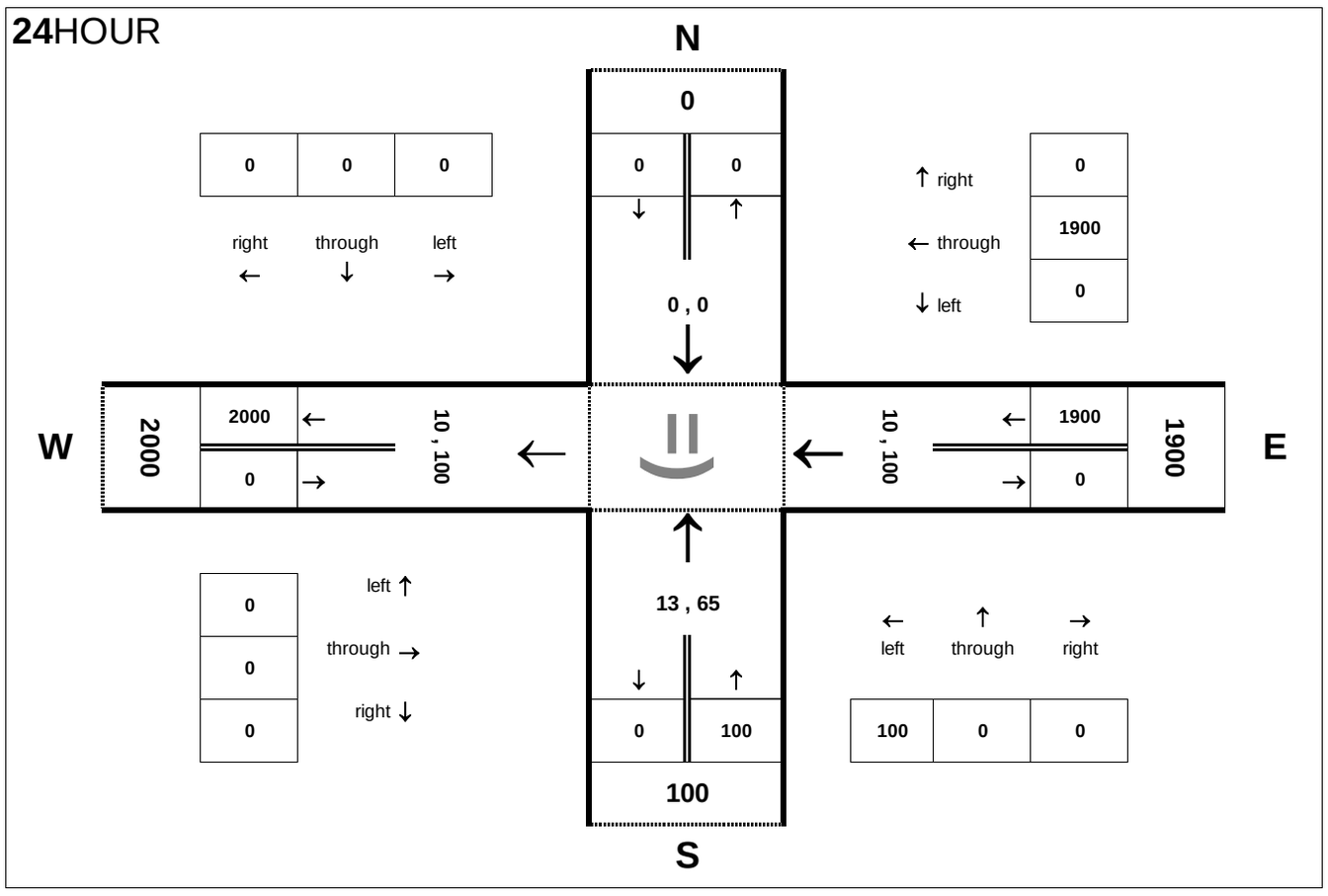

*PM peak hour inflow is 242 vehicles. PM peak hour outflow is 242 vehicles.*

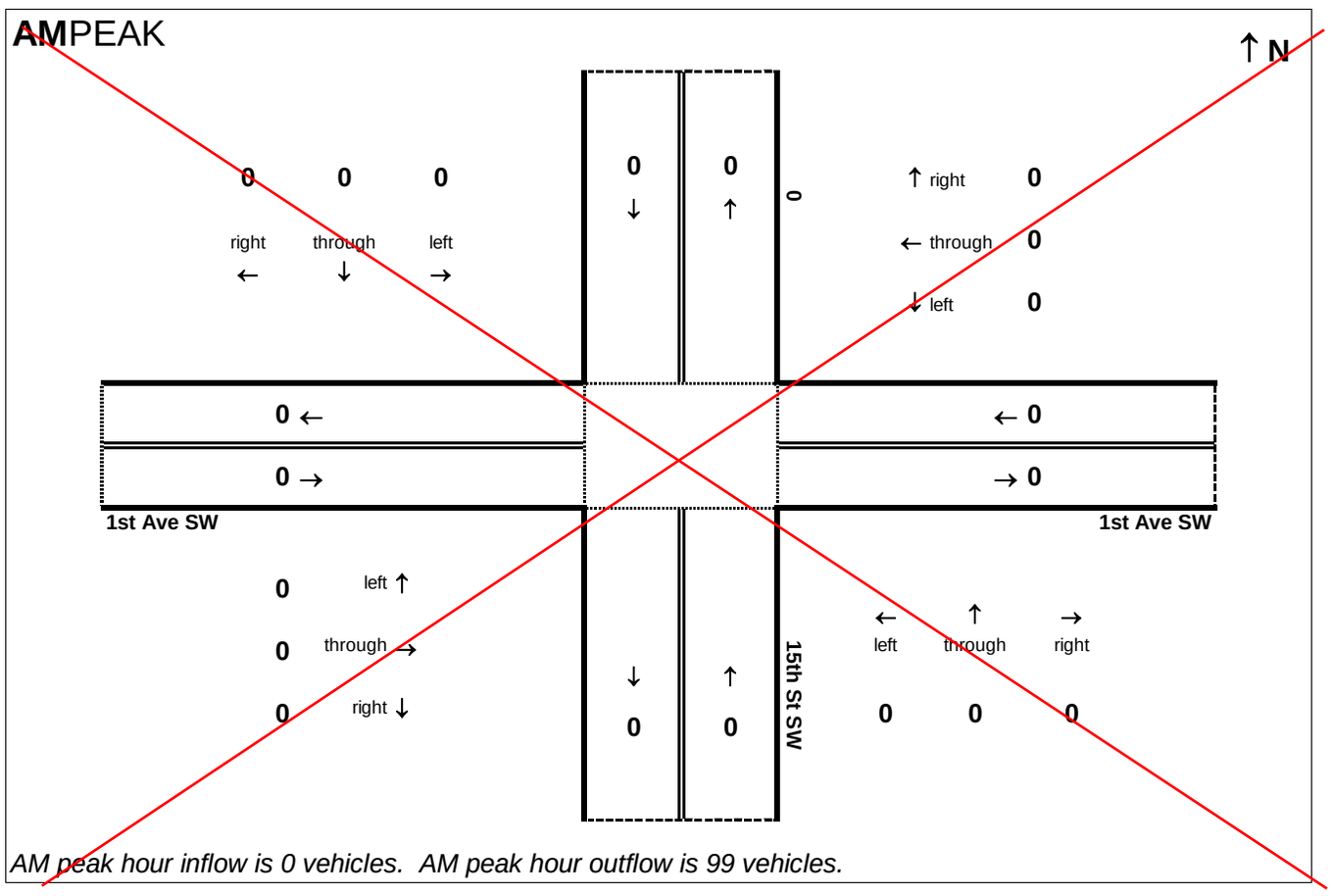
**Peak Hour Volume Breakouts Report:**
Intersection of 1st Ave SW and 14th St SW

**Traffic Forecast Release Date:**
December-16

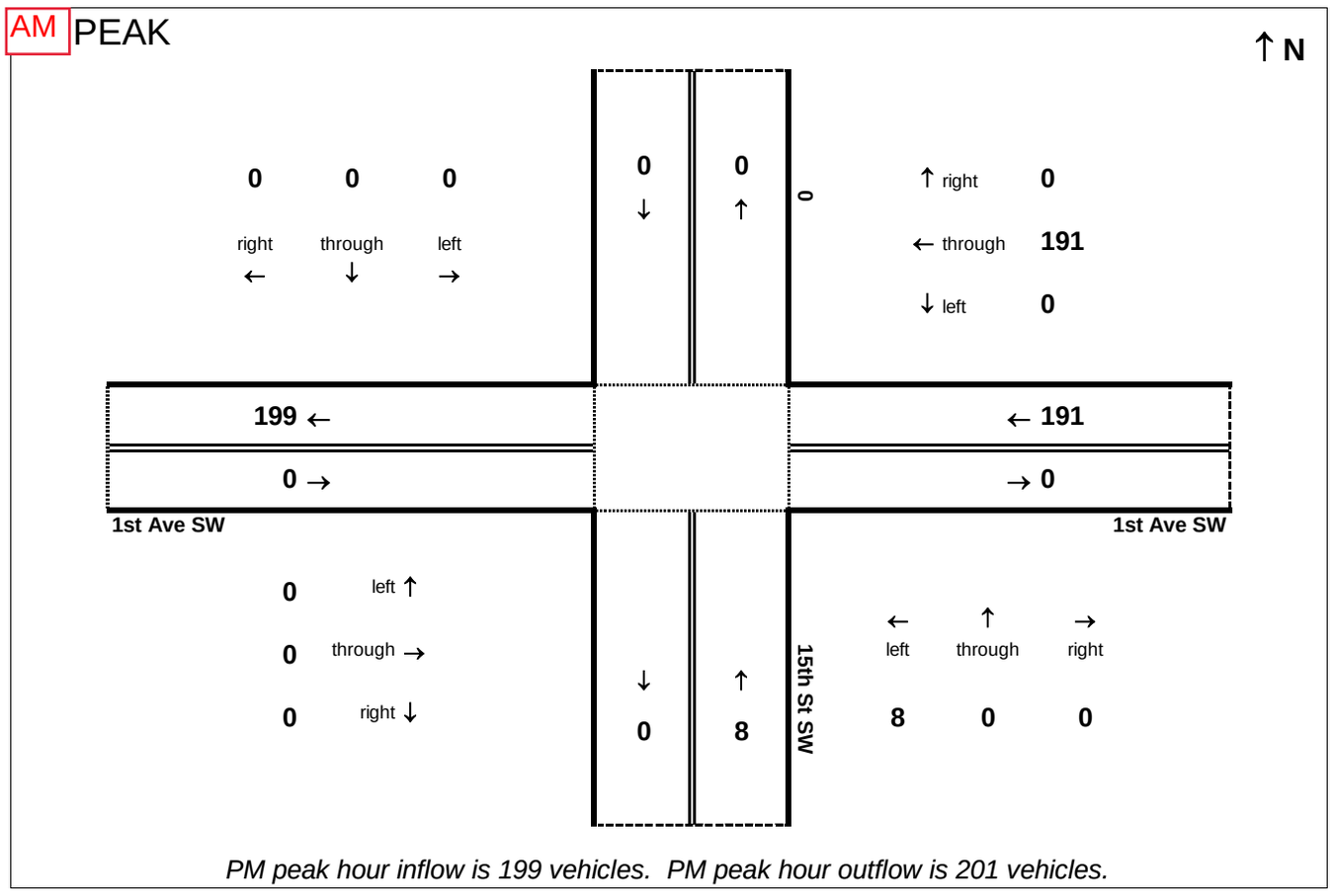
**Traffic Data Year:**
2040 Build 2

**Project:**
U-4700




*AM peak hour inflow is 0 vehicles. AM peak hour outflow is 99 vehicles.*




*PM peak hour inflow is 199 vehicles. PM peak hour outflow is 201 vehicles.*

**Peak Hour Volume Breakouts Report:**
Intersection of 1st Ave SW and 15th St SW

**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 2

**Project:**
U-4700

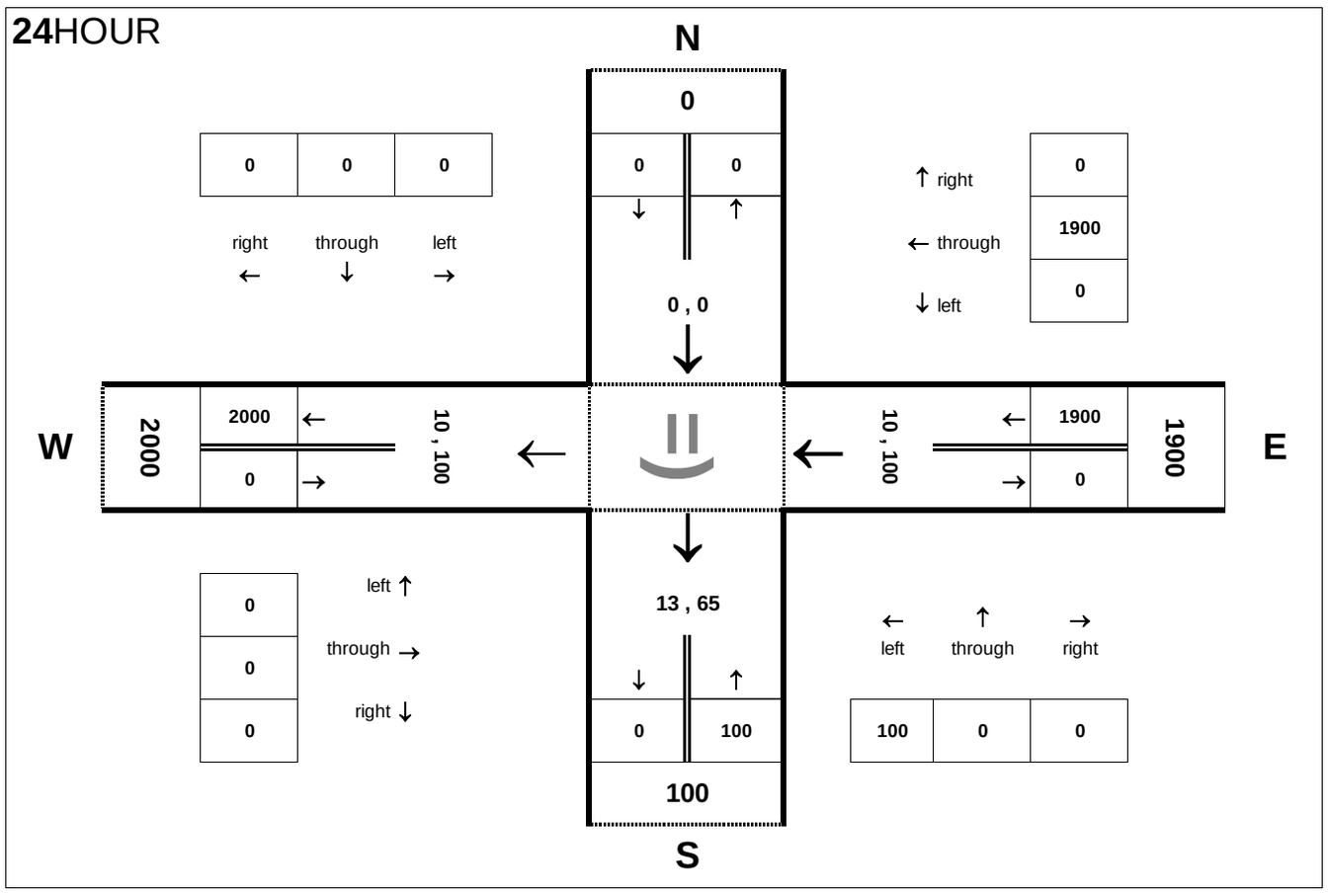
Note: In order to use the spreadsheet program, and use the 100% directional in the AM on the one-way street(s), the input directionals for the two way moves were reversed, and the pm output data was used for the am.

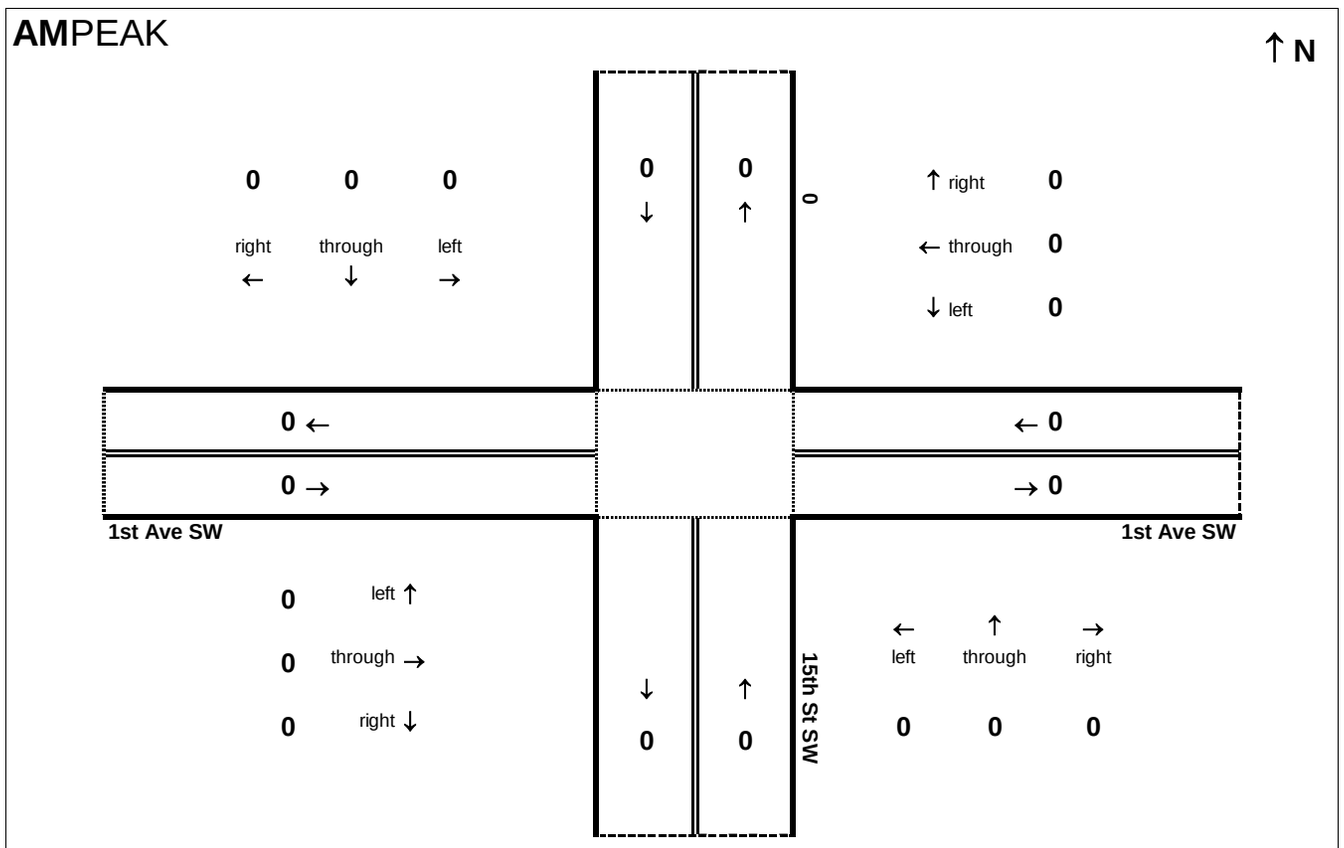
**Peak Hour Volume Breakouts Report:**
Intersection of 1st Ave SW and 15th St SW

**Traffic Forecast Release Date:**
December-16

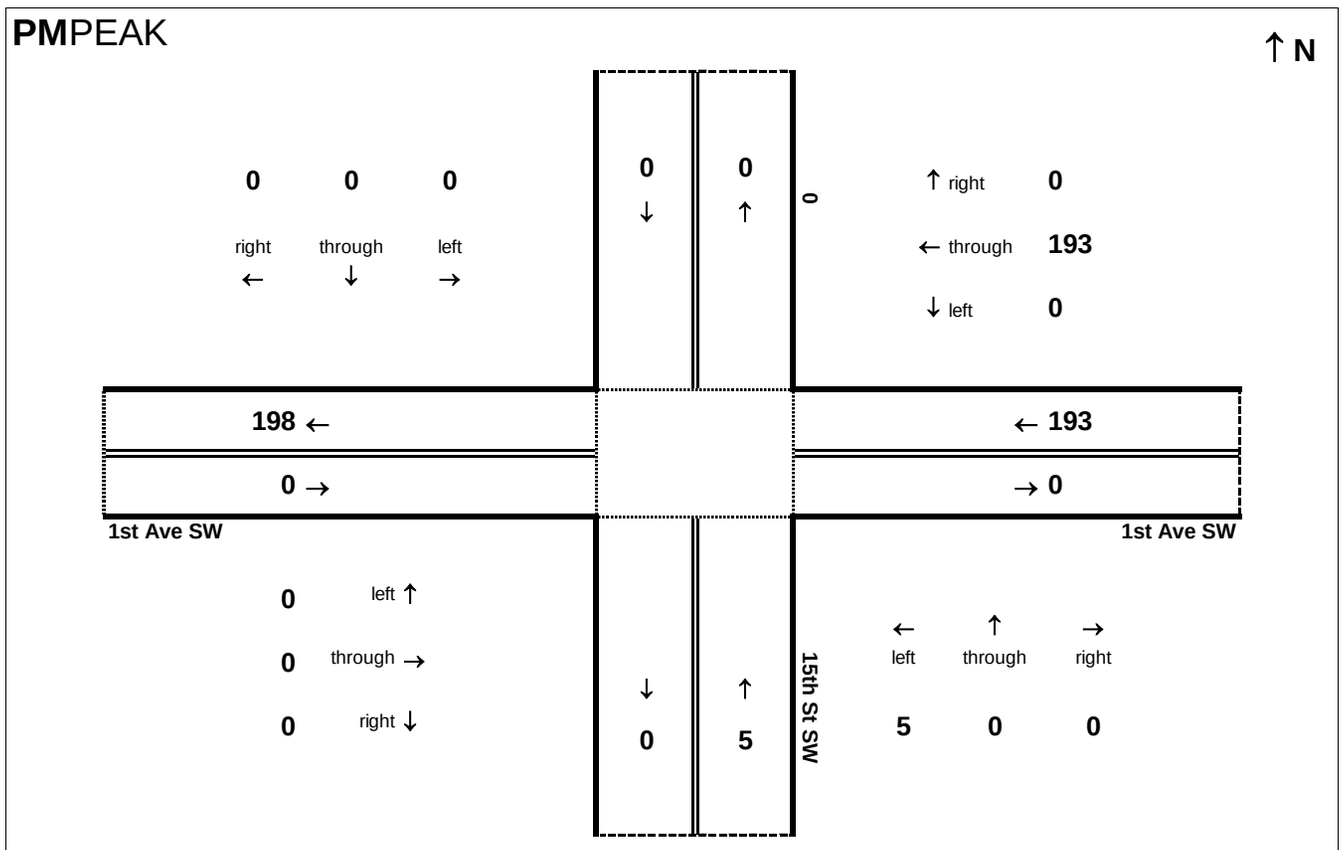
**Traffic Data Year:**
2040 Build 2

**Project:**
U-4700

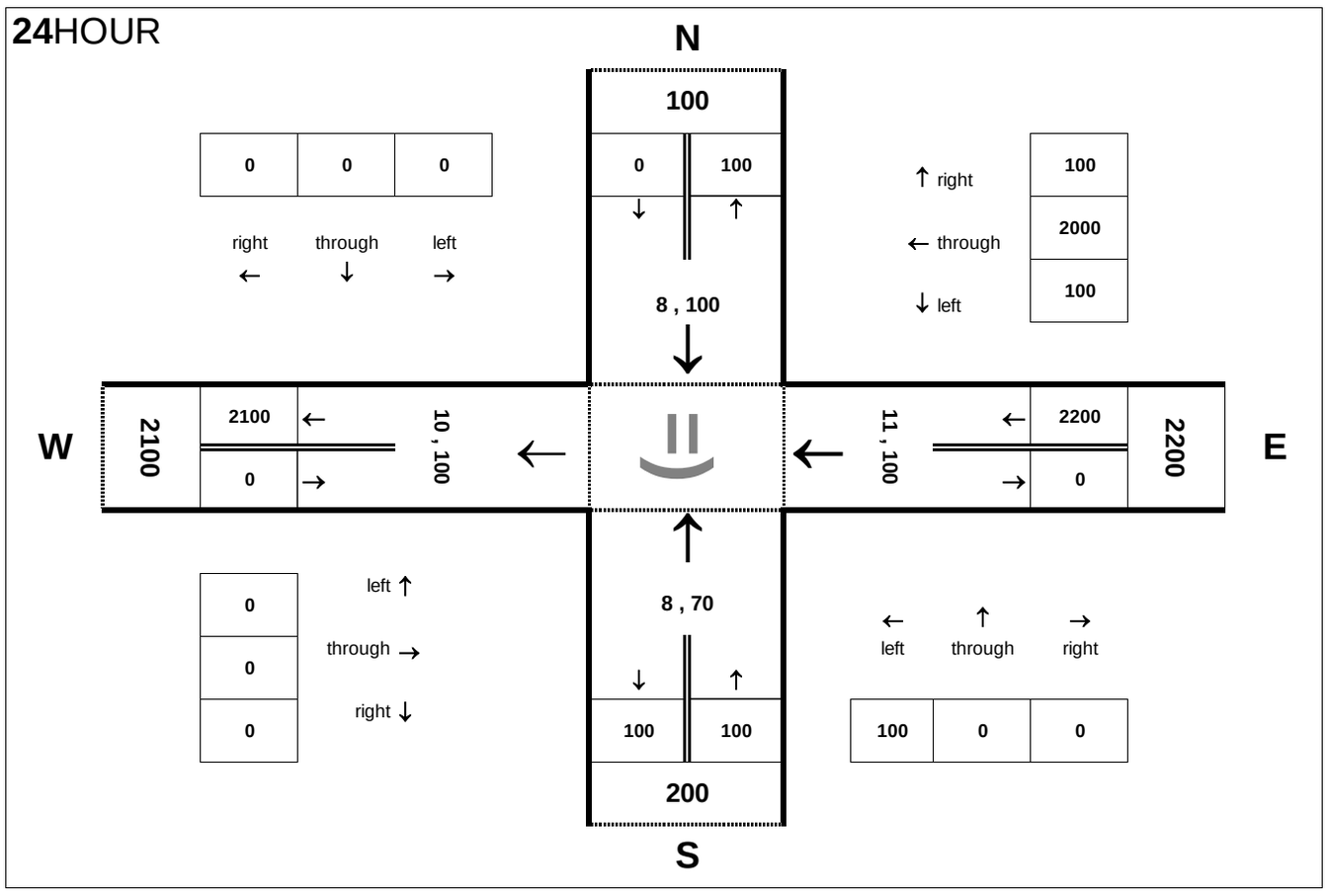


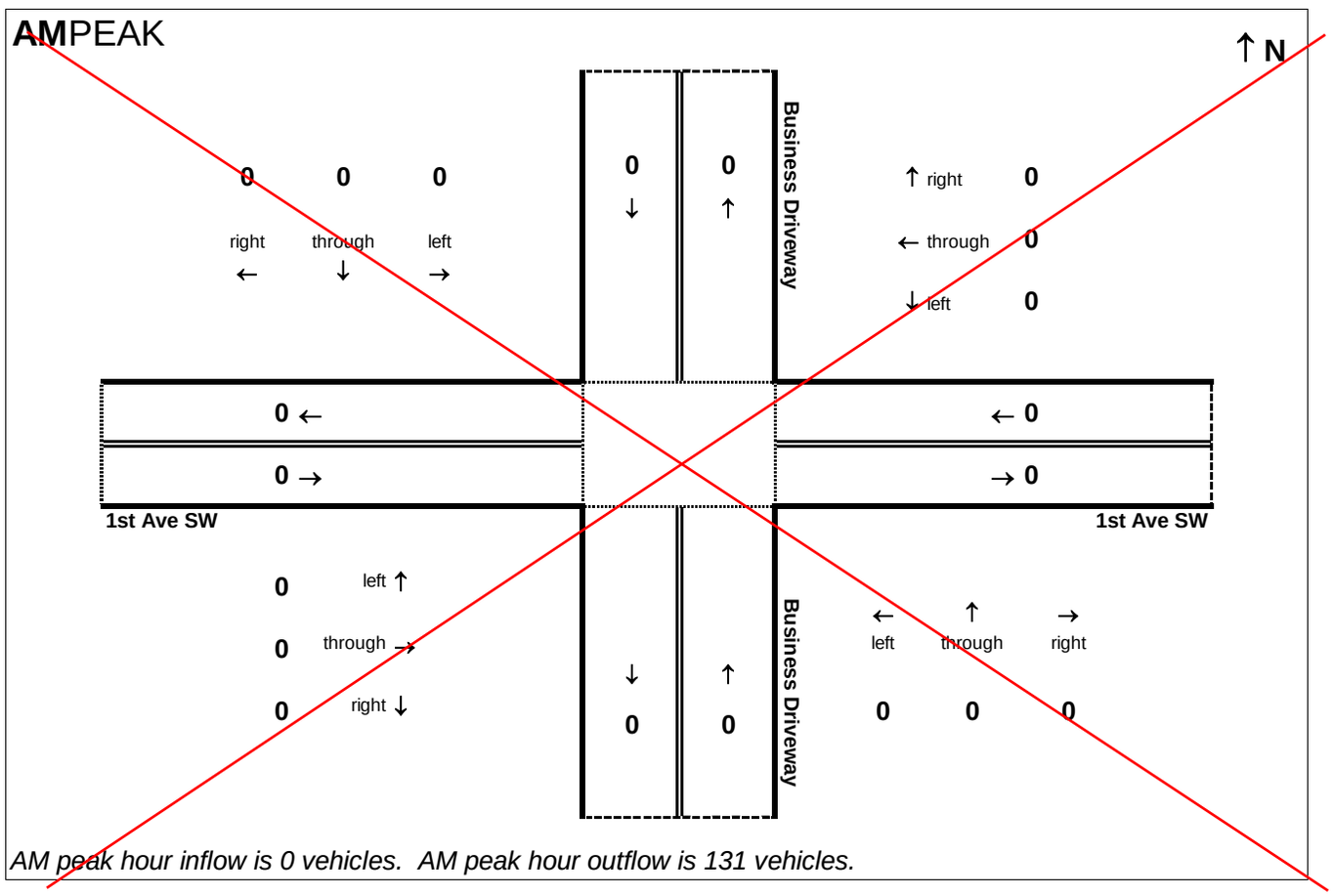



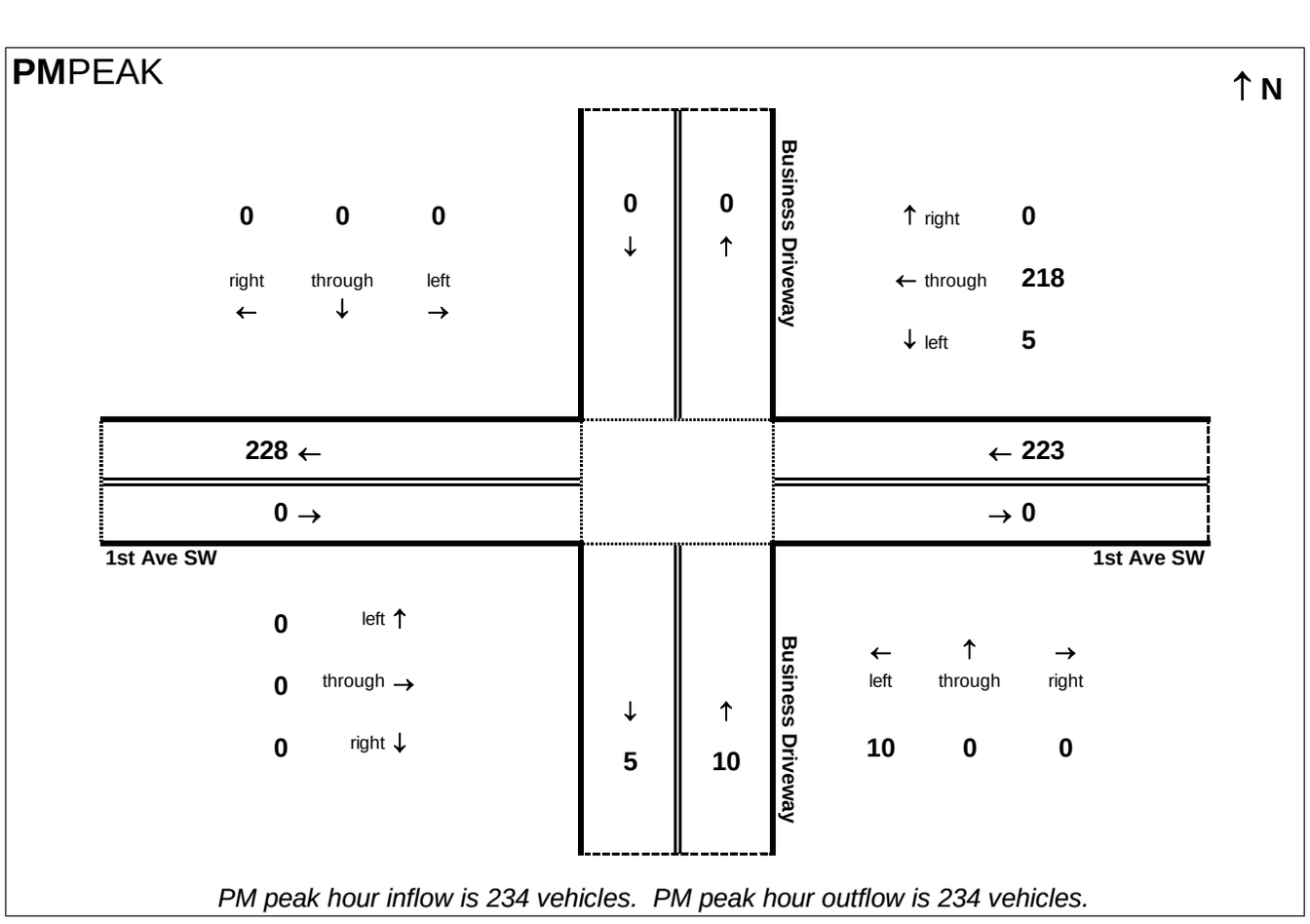

*AM peak hour inflow is 0 vehicles. AM peak hour outflow is 97 vehicles.*




*PM peak hour inflow is 198 vehicles. PM peak hour outflow is 201 vehicles.*



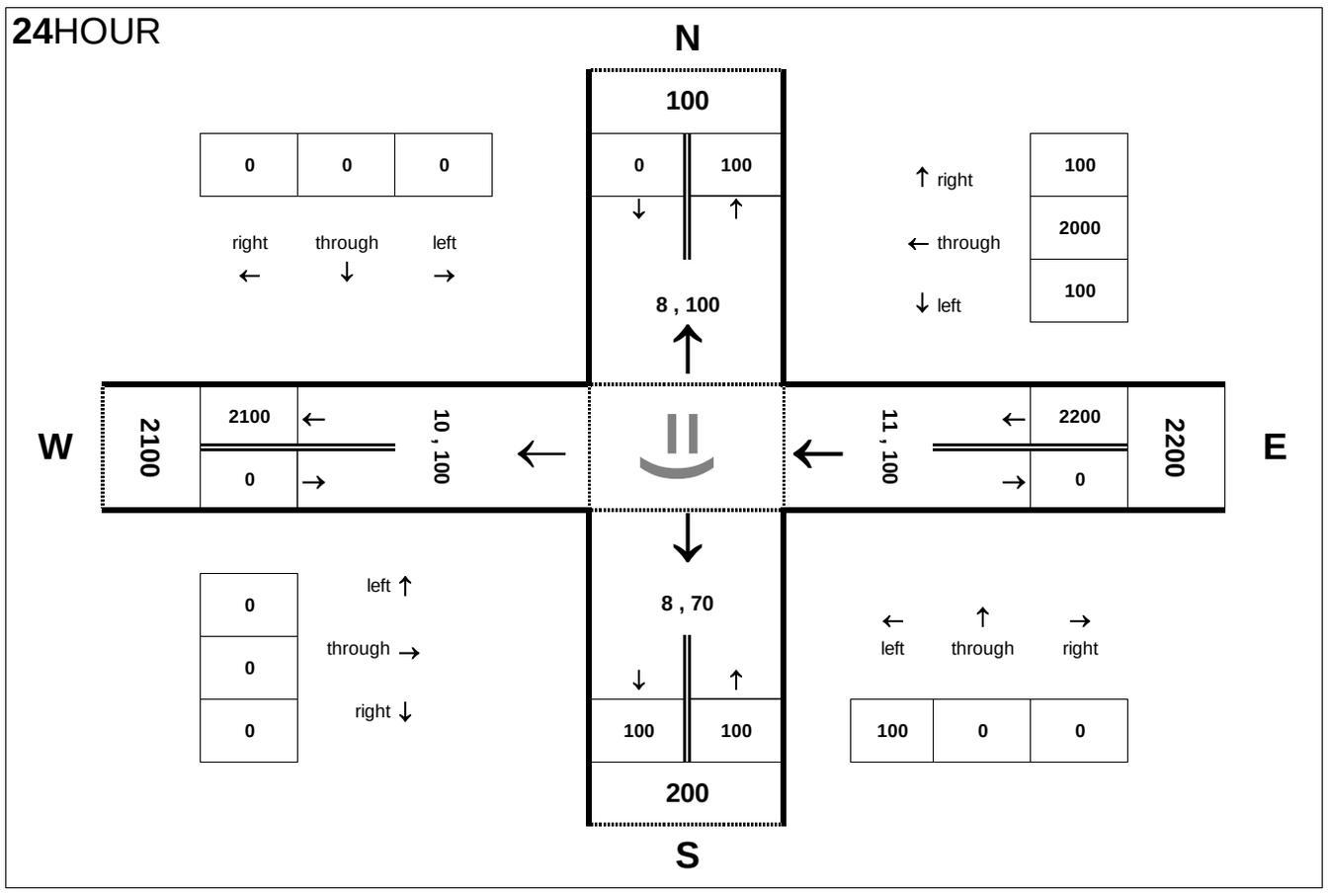

**Peak Hour Volume Breakouts Report:**
Intersection of 1st Ave SW and Business Driveway

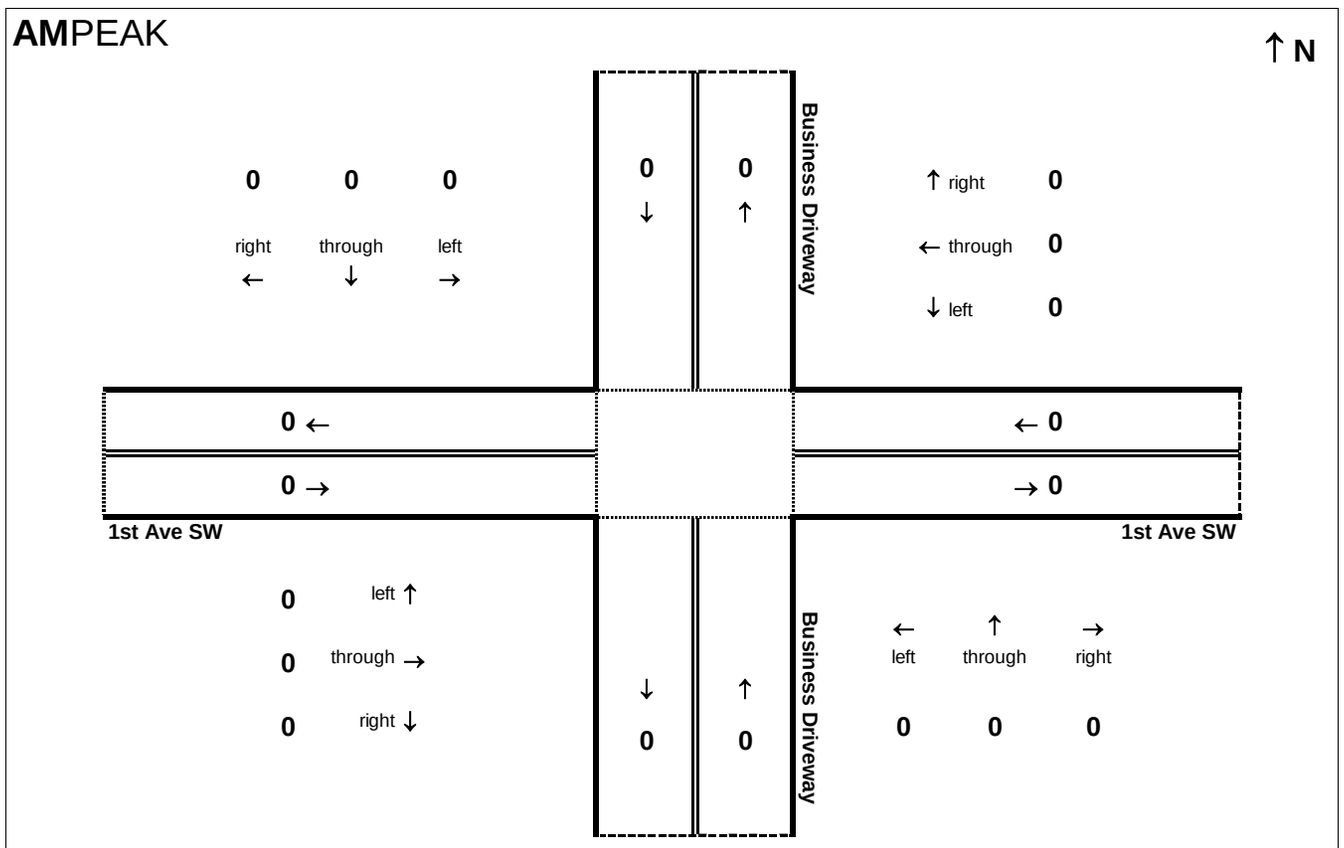
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 2

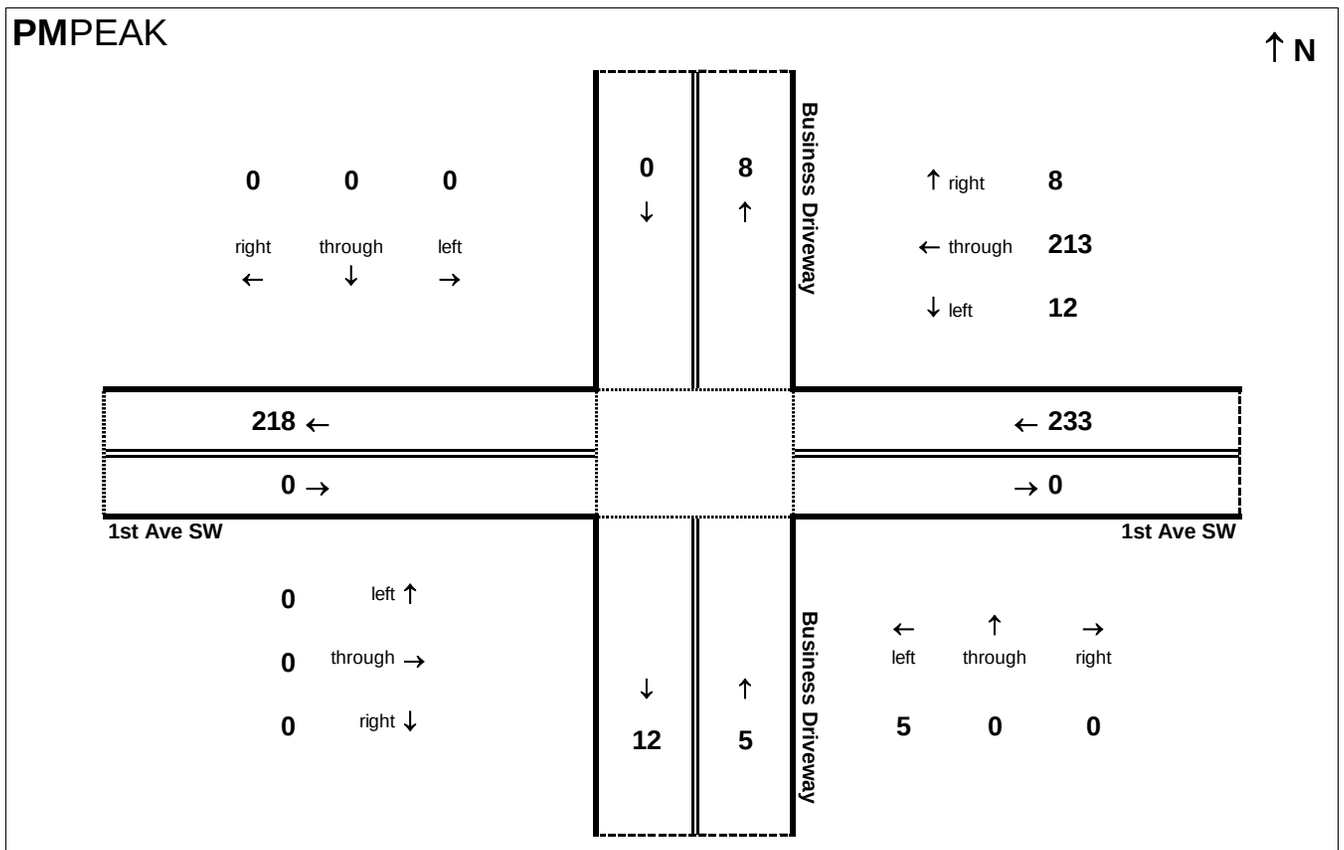
**Project:**
U-4700

Note: In order to use the spreadsheet program, and use the 100% directional in the AM on the one-way street(s), the input directionals for the two way moves were reversed, and the pm output data was used for the am.




*AM peak hour inflow is 0 vehicles.  AM peak hour outflow is 123 vehicles.*



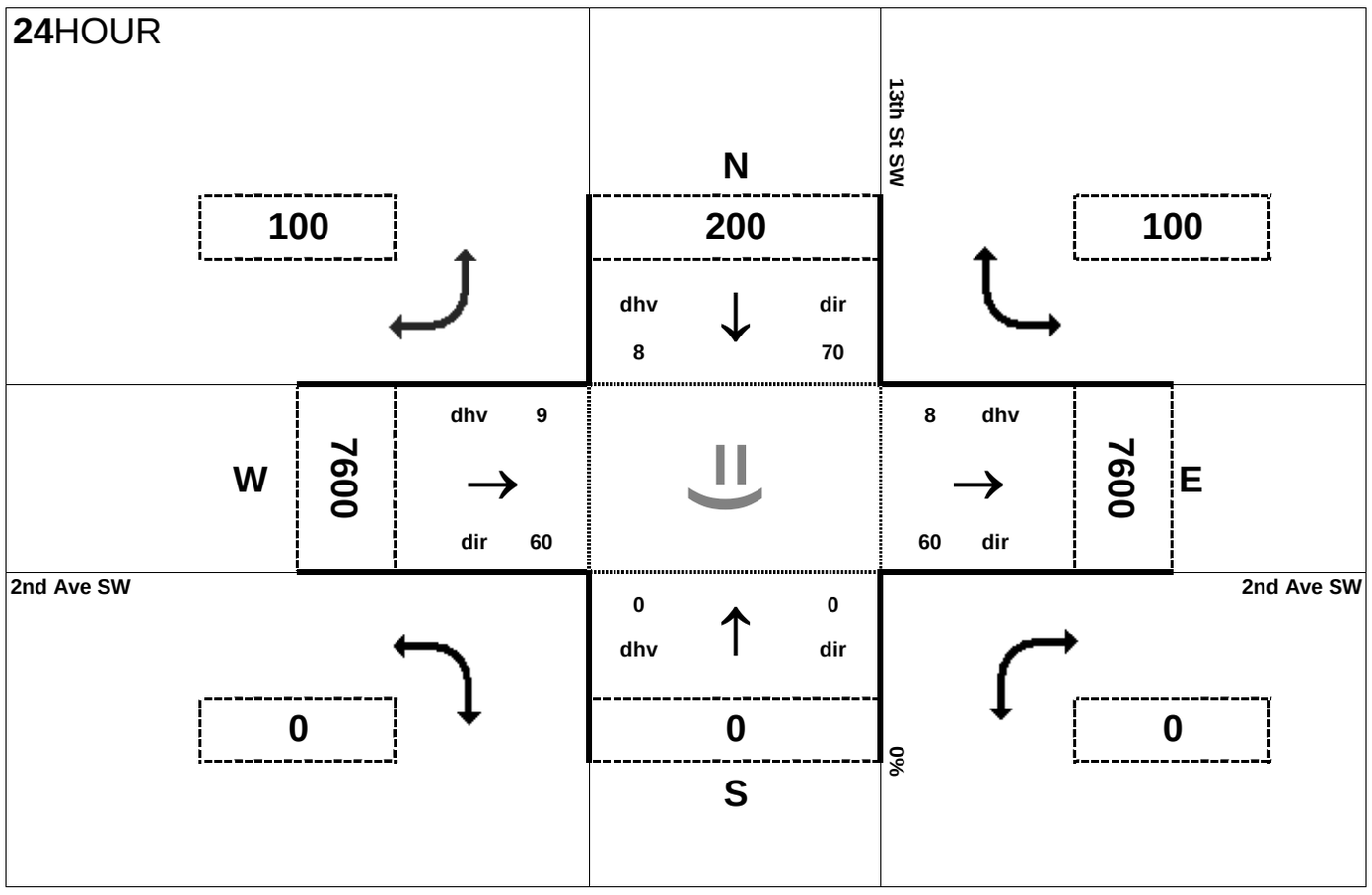

*PM peak hour inflow is 238 vehicles.  PM peak hour outflow is 238 vehicles.*

**Peak Hour Volume Breakouts Report:**
Intersection of 1st Ave SW and Business Driveway

**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 2

**Project:**
U-4700

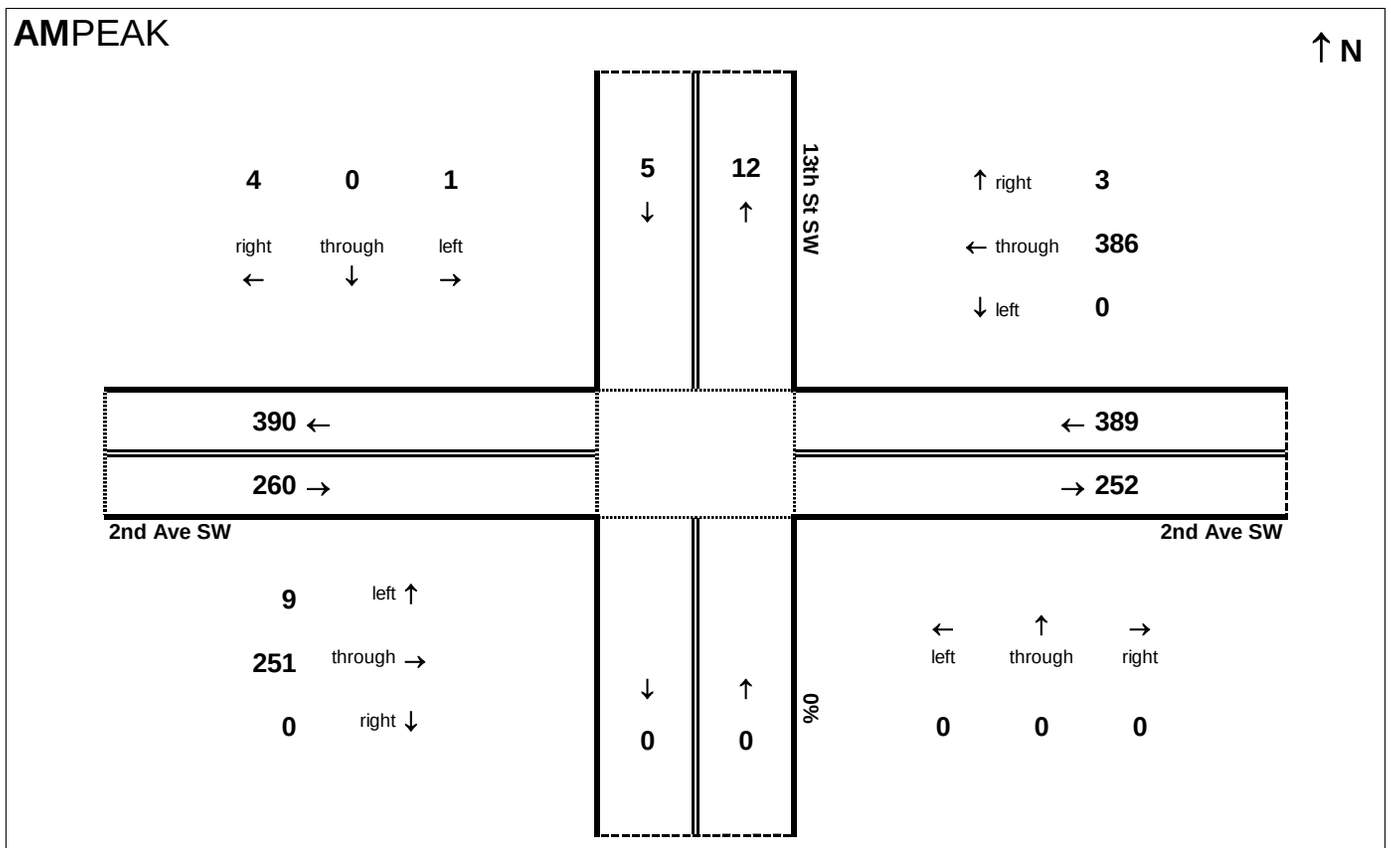



**Peak Hour Volume Breakouts Report:**
Intersection of 2nd Ave SW and 13th St SW

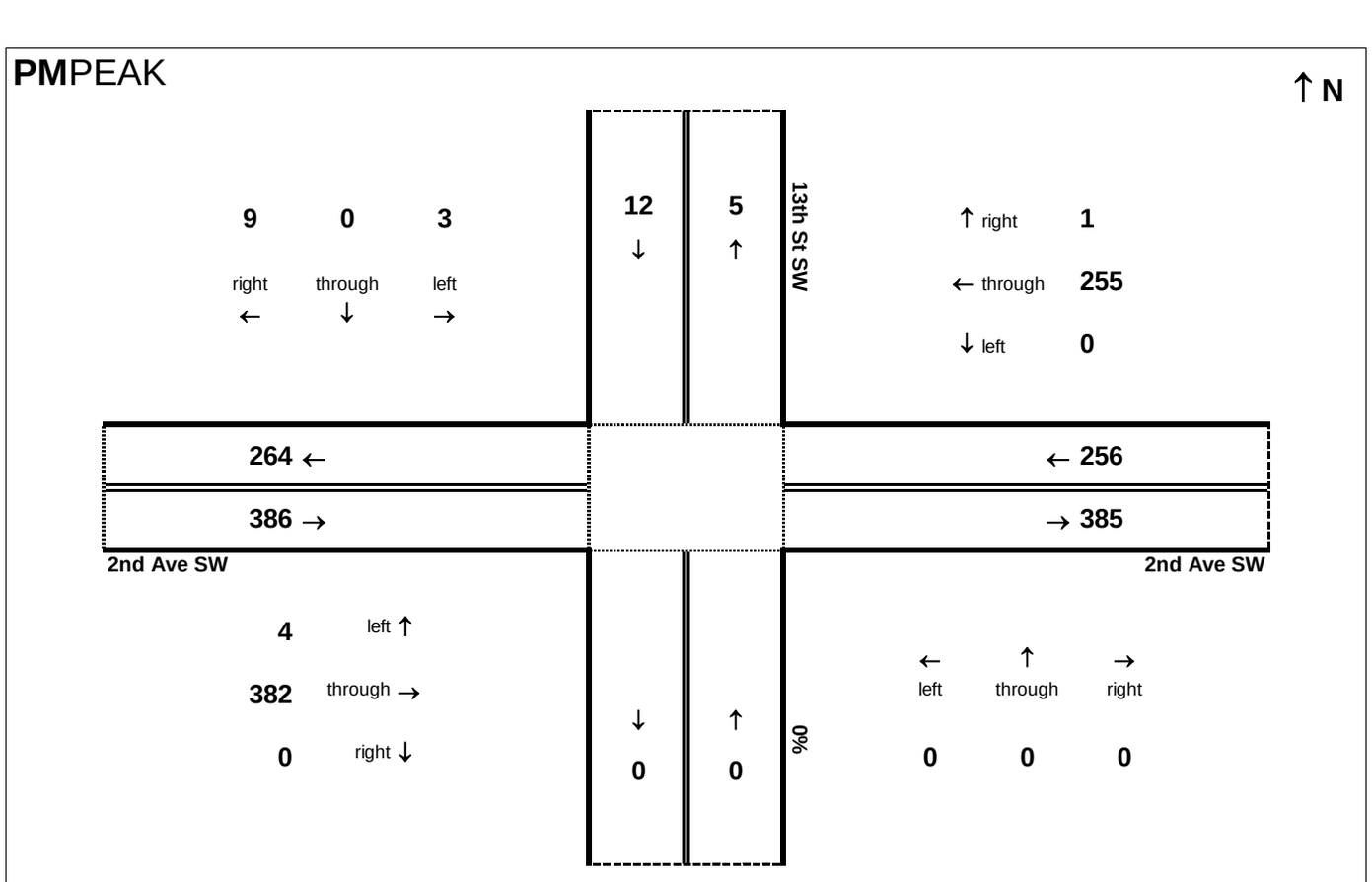
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 2

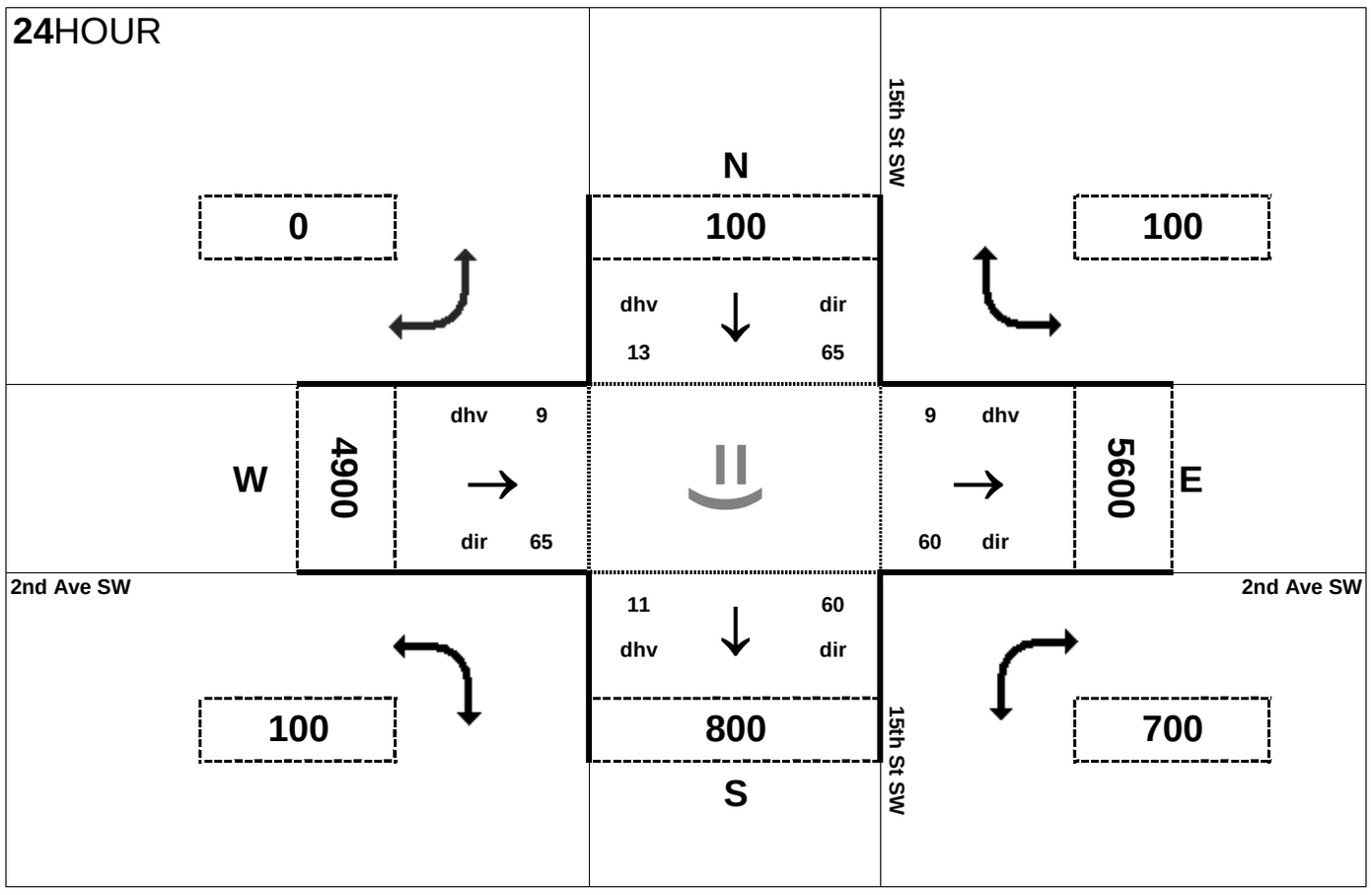
**Project:**
U-4700




*AM peak hour inflow is 654 vehicles. AM peak hour outflow is 654 vehicles.*




*PM peak hour inflow is 655 vehicles. PM peak hour outflow is 654 vehicles.*

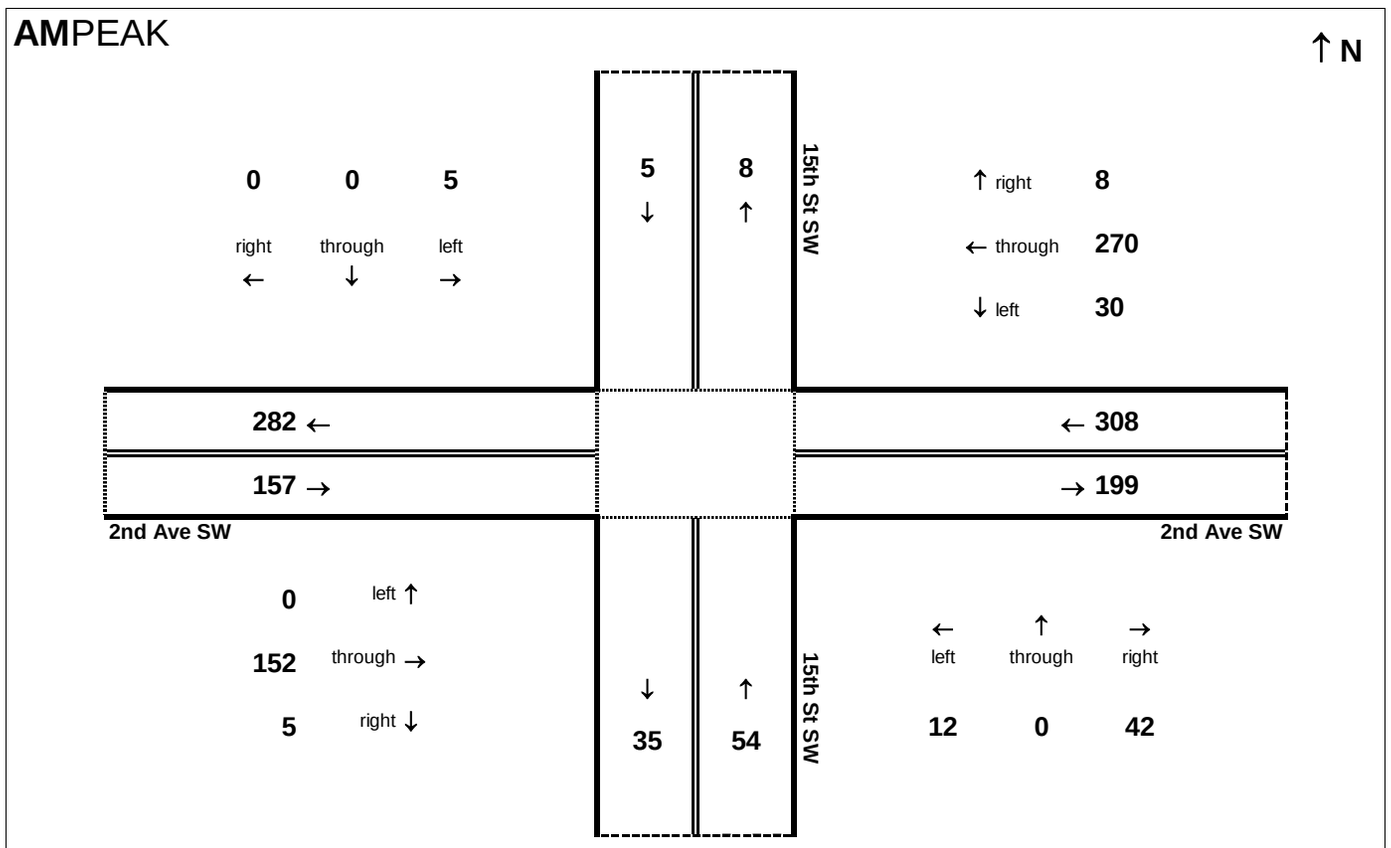



**Peak Hour Volume Breakouts Report:**
Intersection of 2nd Ave SW and 15th St SW

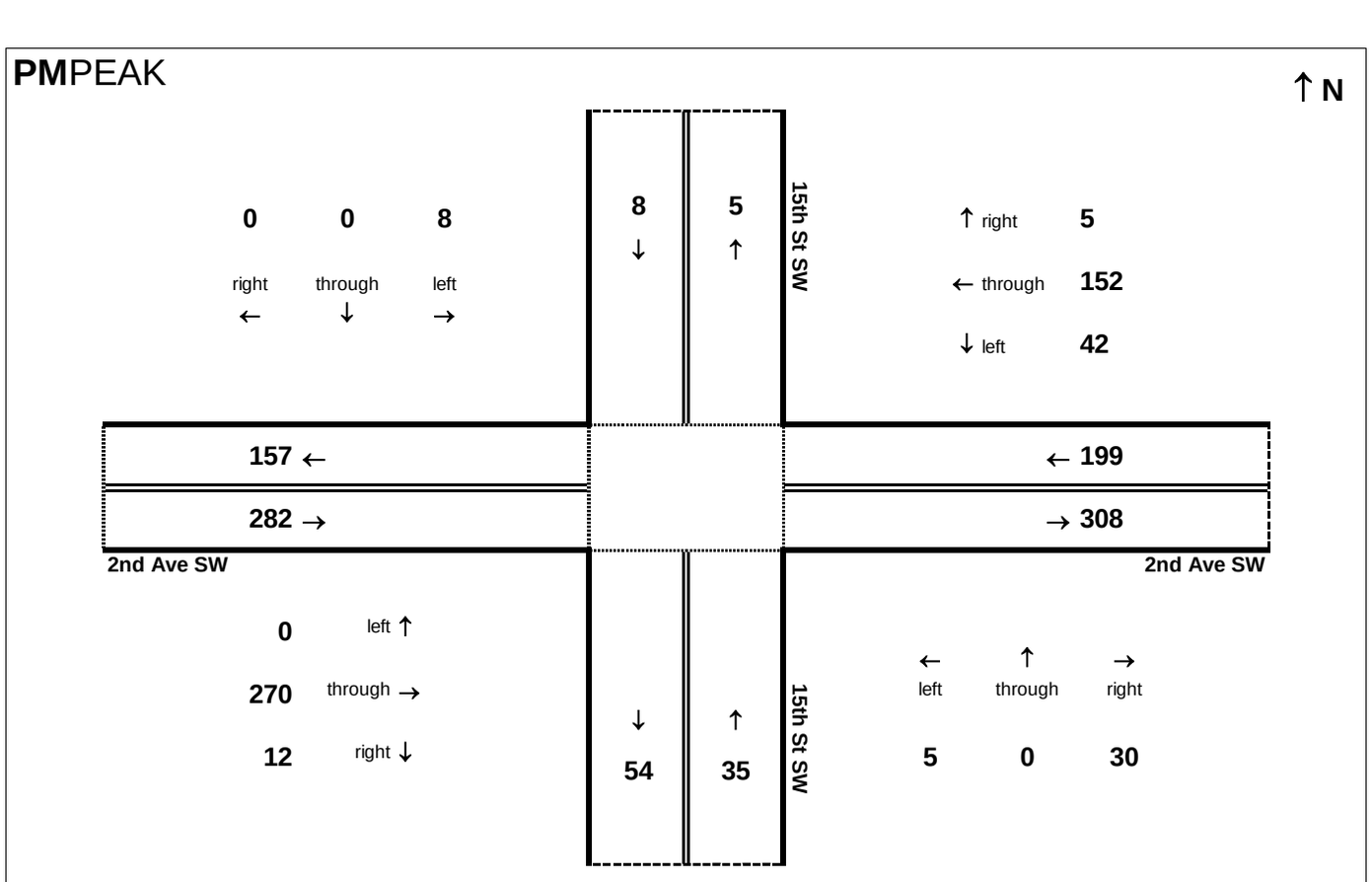
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 2

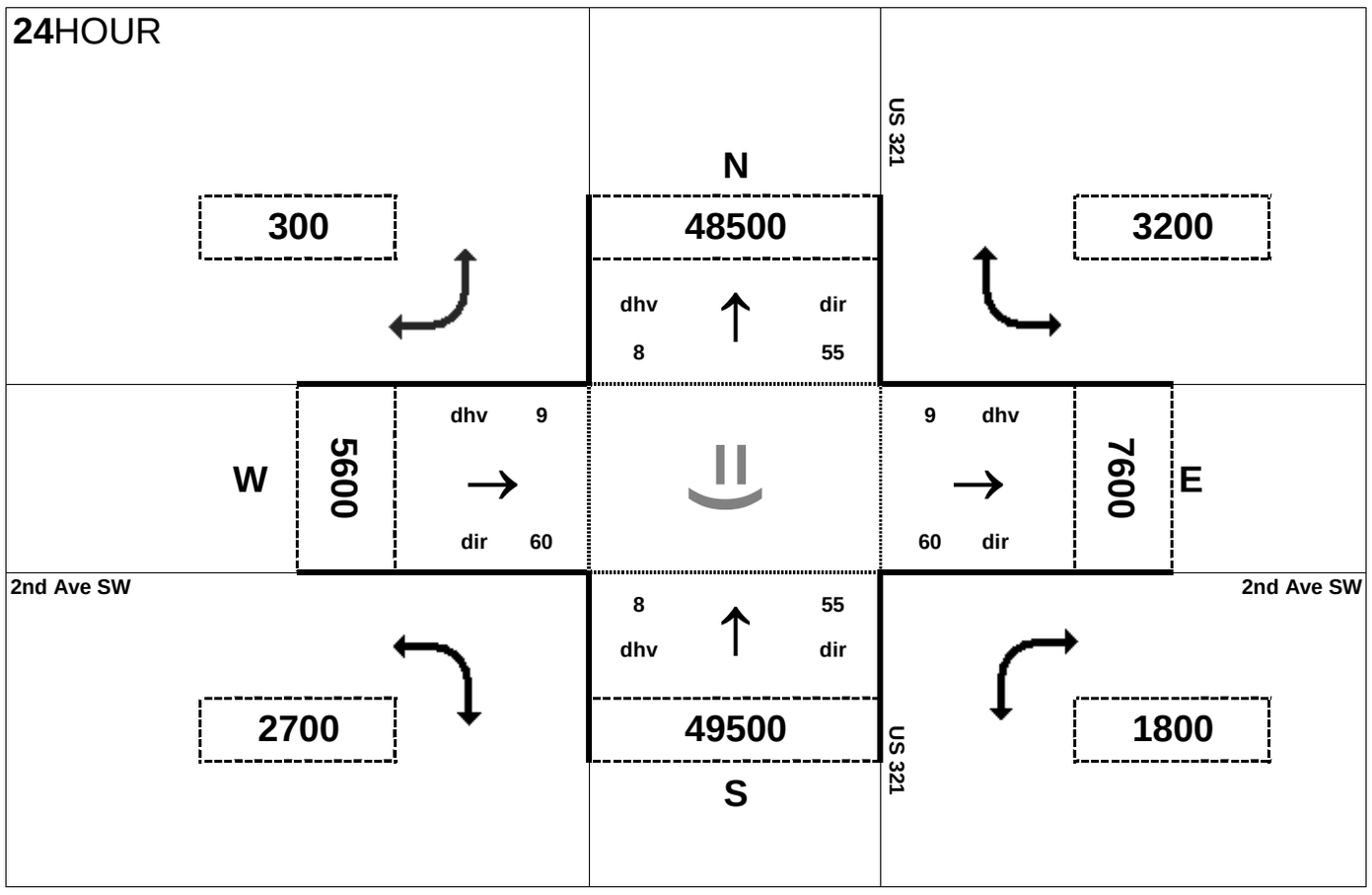
**Project:**
U-4700




*AM peak hour inflow is 524 vehicles. AM peak hour outflow is 523 vehicles.*




*PM peak hour inflow is 523 vehicles. PM peak hour outflow is 524 vehicles.*

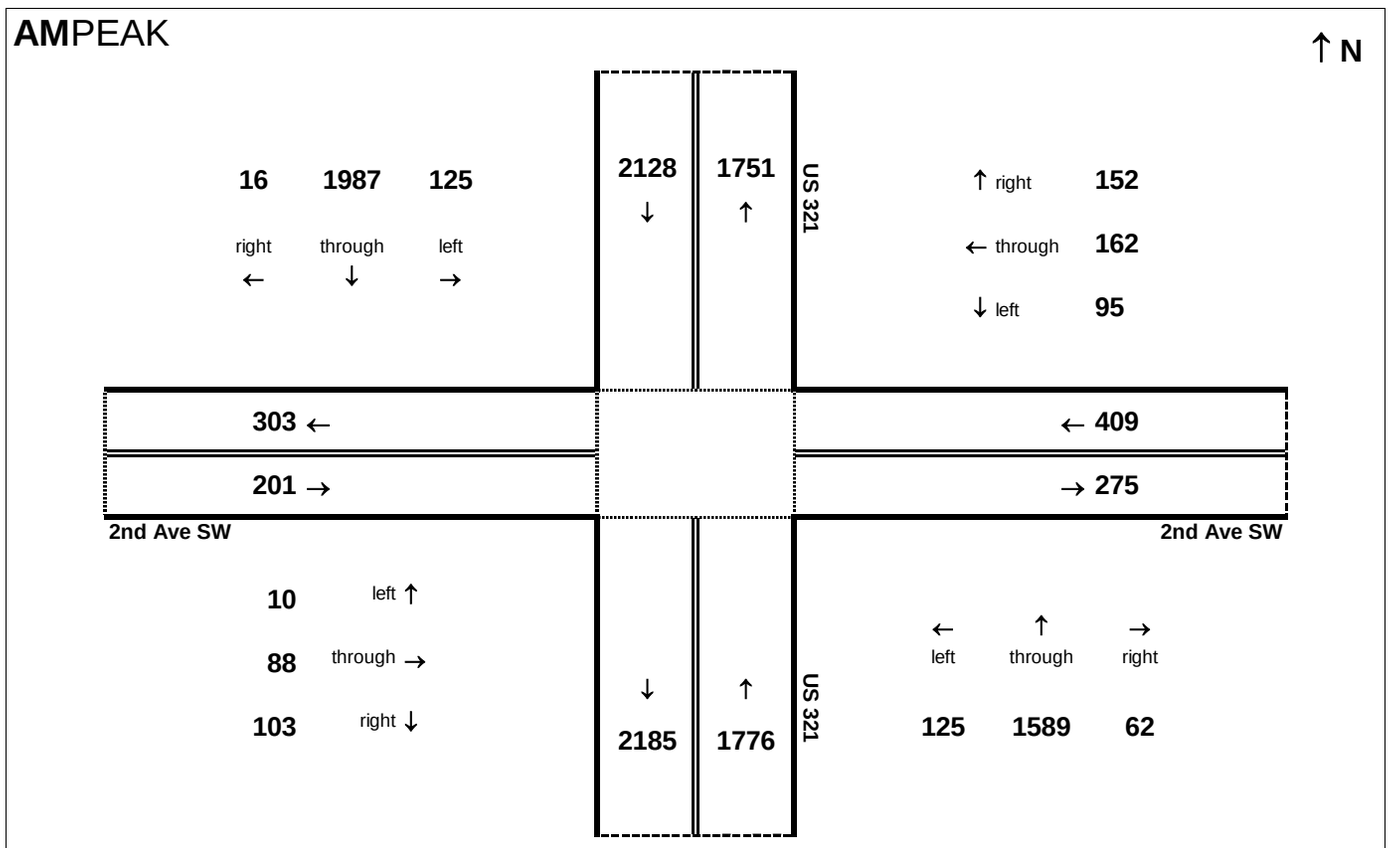



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and 2nd Ave SW

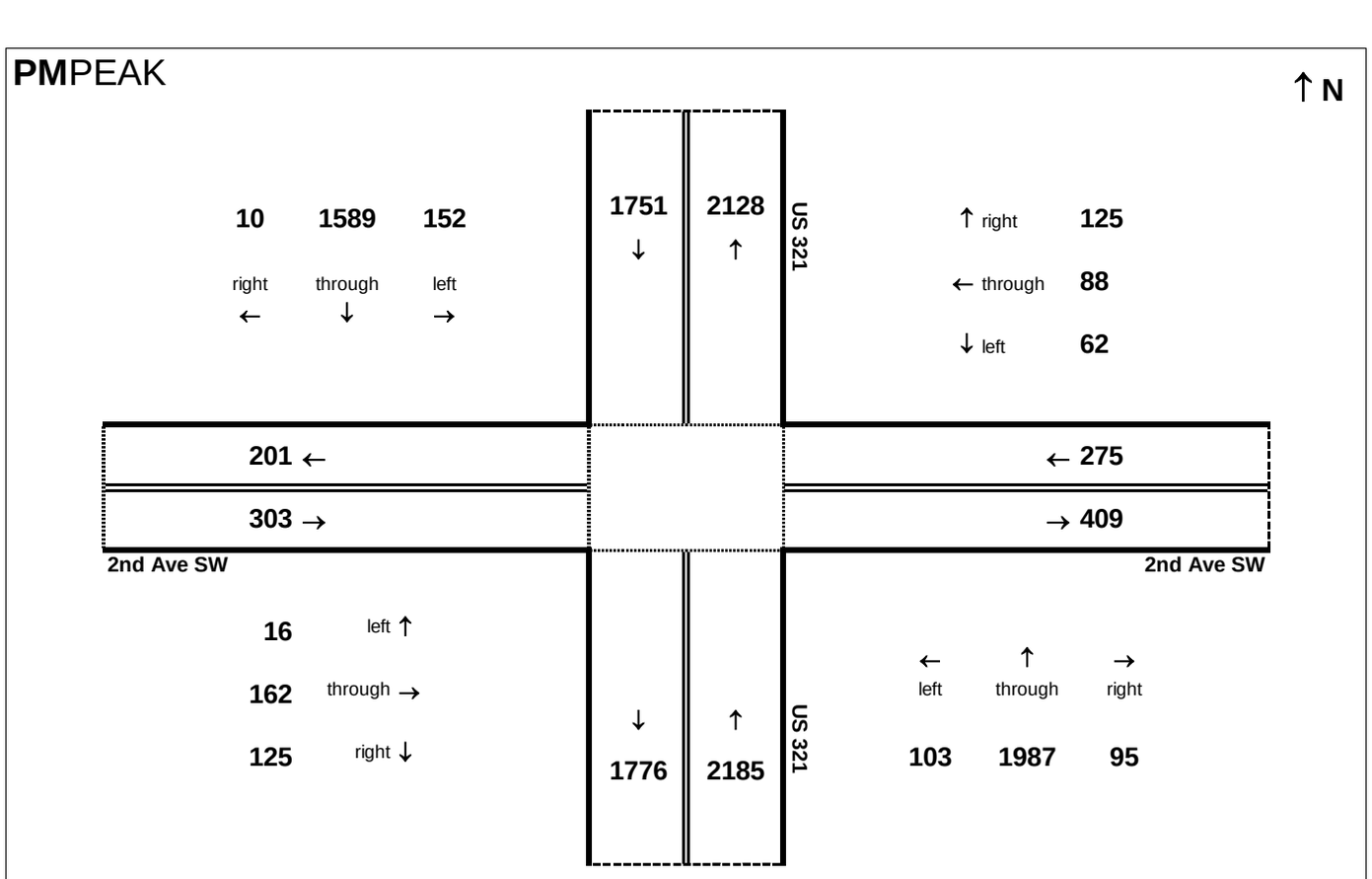
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 2

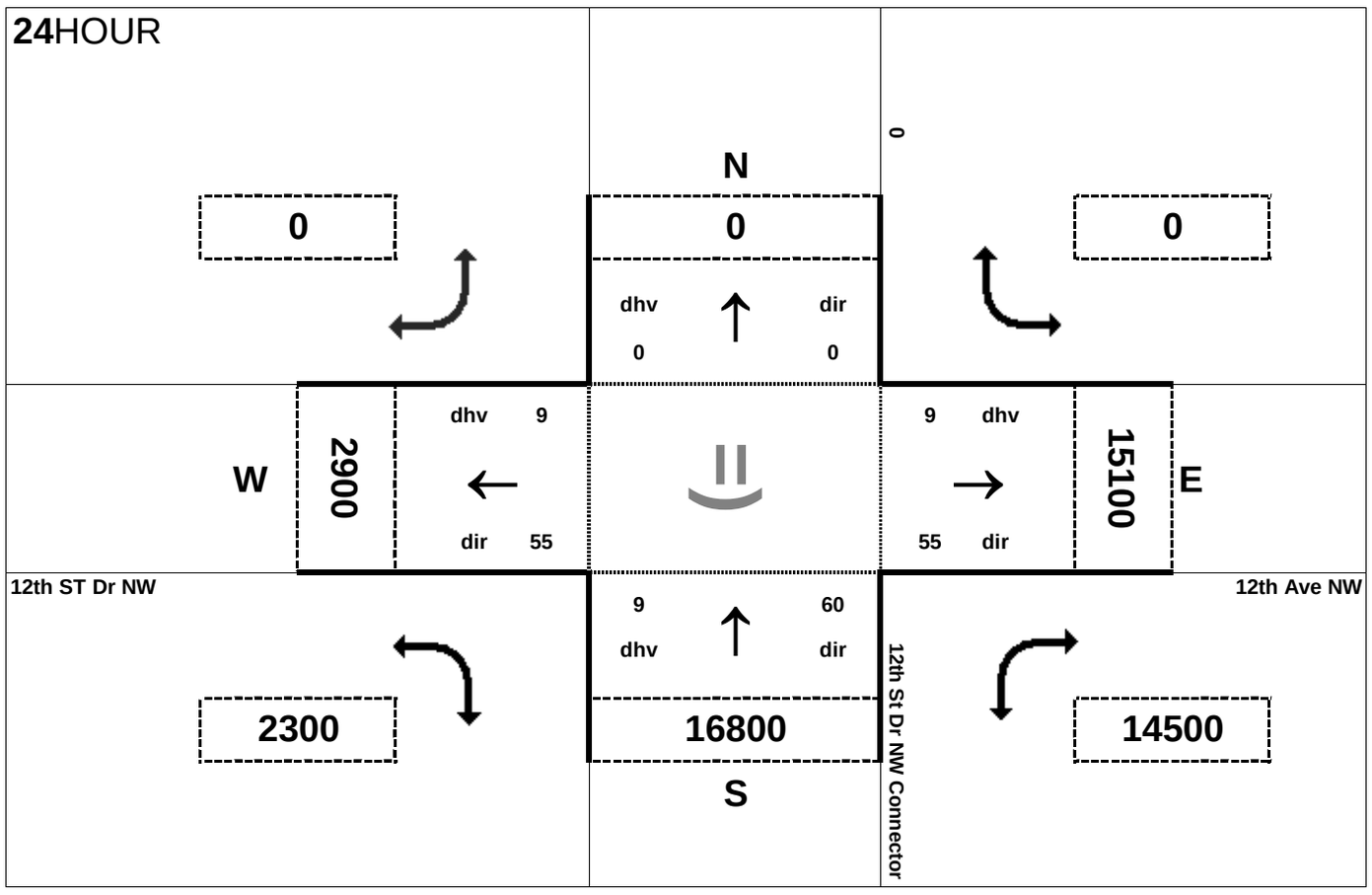
**Project:**
U-4700




*AM peak hour inflow is 4514 vehicles. AM peak hour outflow is 4513 vehicles.*




*PM peak hour inflow is 4513 vehicles. PM peak hour outflow is 4514 vehicles.*

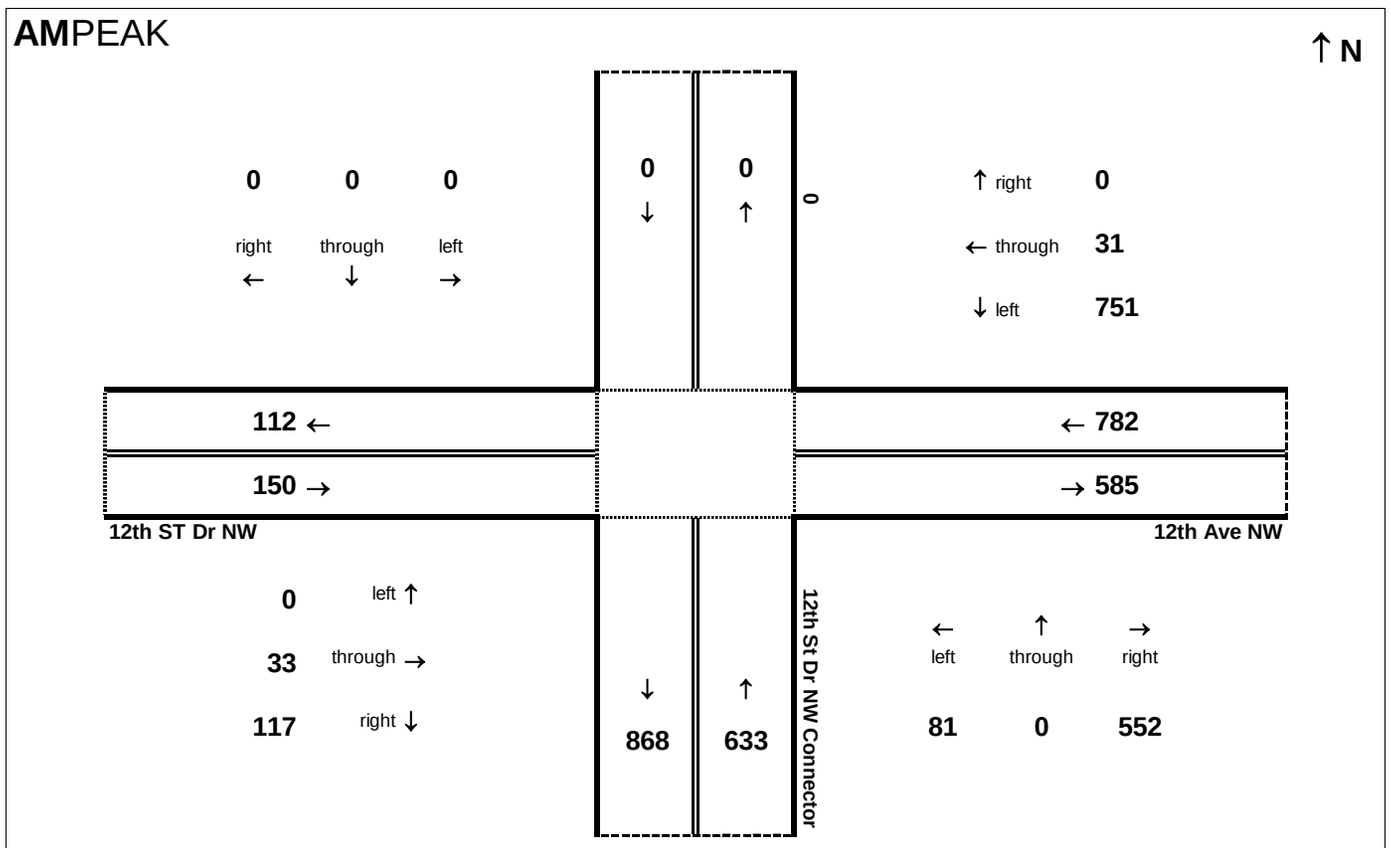



**Peak Hour Volume Breakouts Report:**
Intersection of 12th Ave NW at 12th St Dr NW

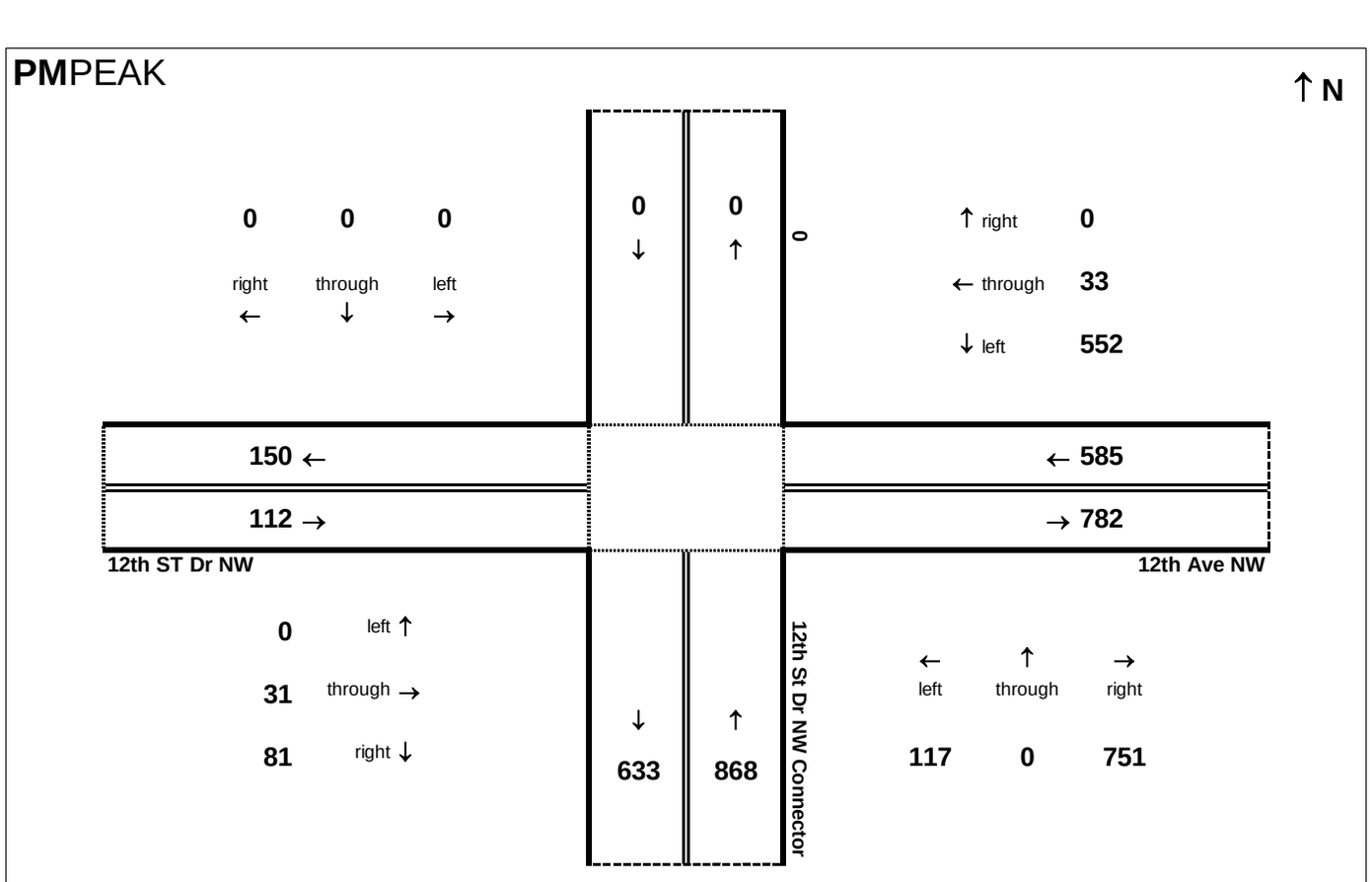
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 2

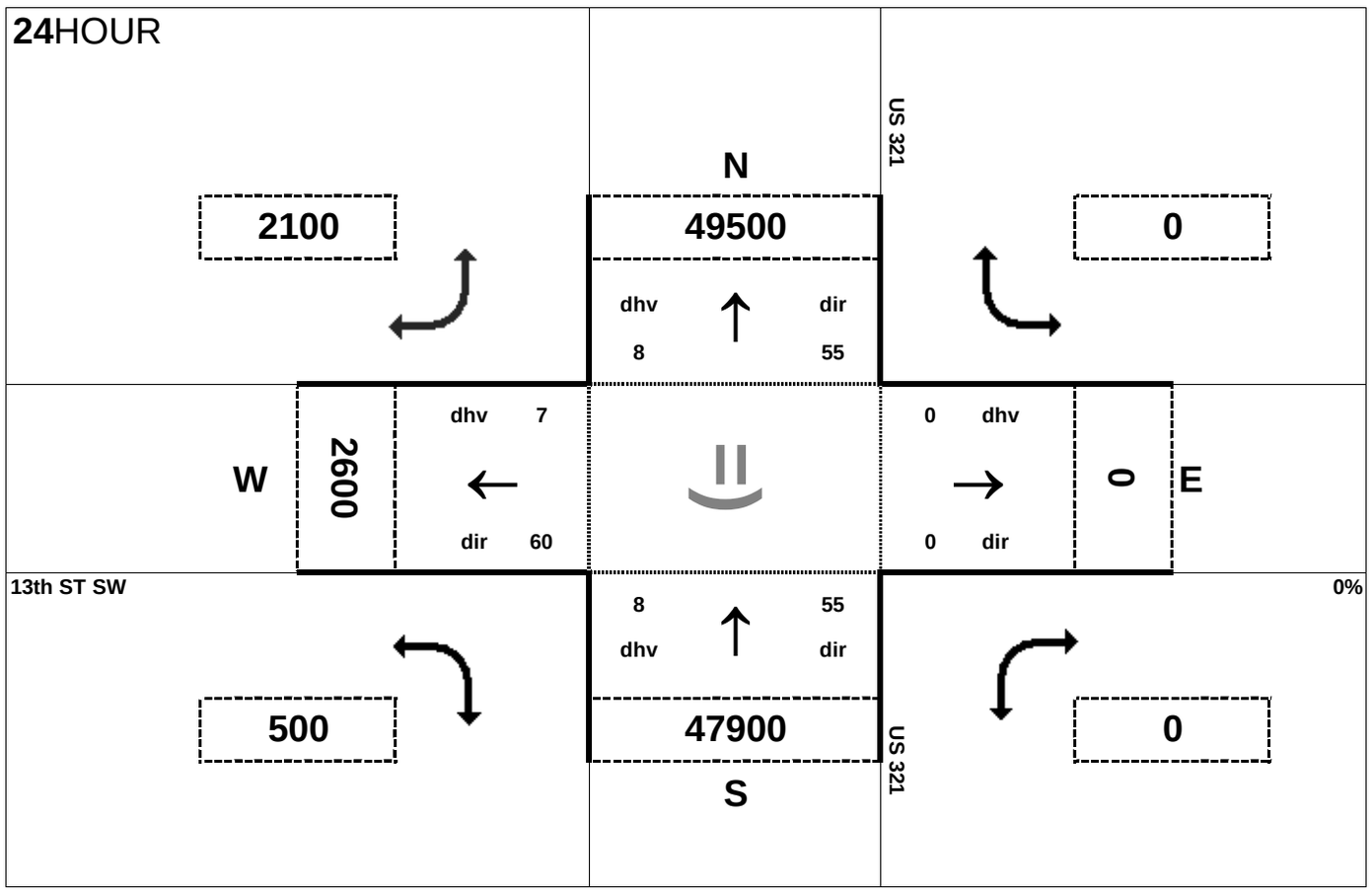
**Project:**
U-4700




*AM peak hour inflow is 1565 vehicles. AM peak hour outflow is 1565 vehicles.*




*PM peak hour inflow is 1565 vehicles. PM peak hour outflow is 1565 vehicles.*

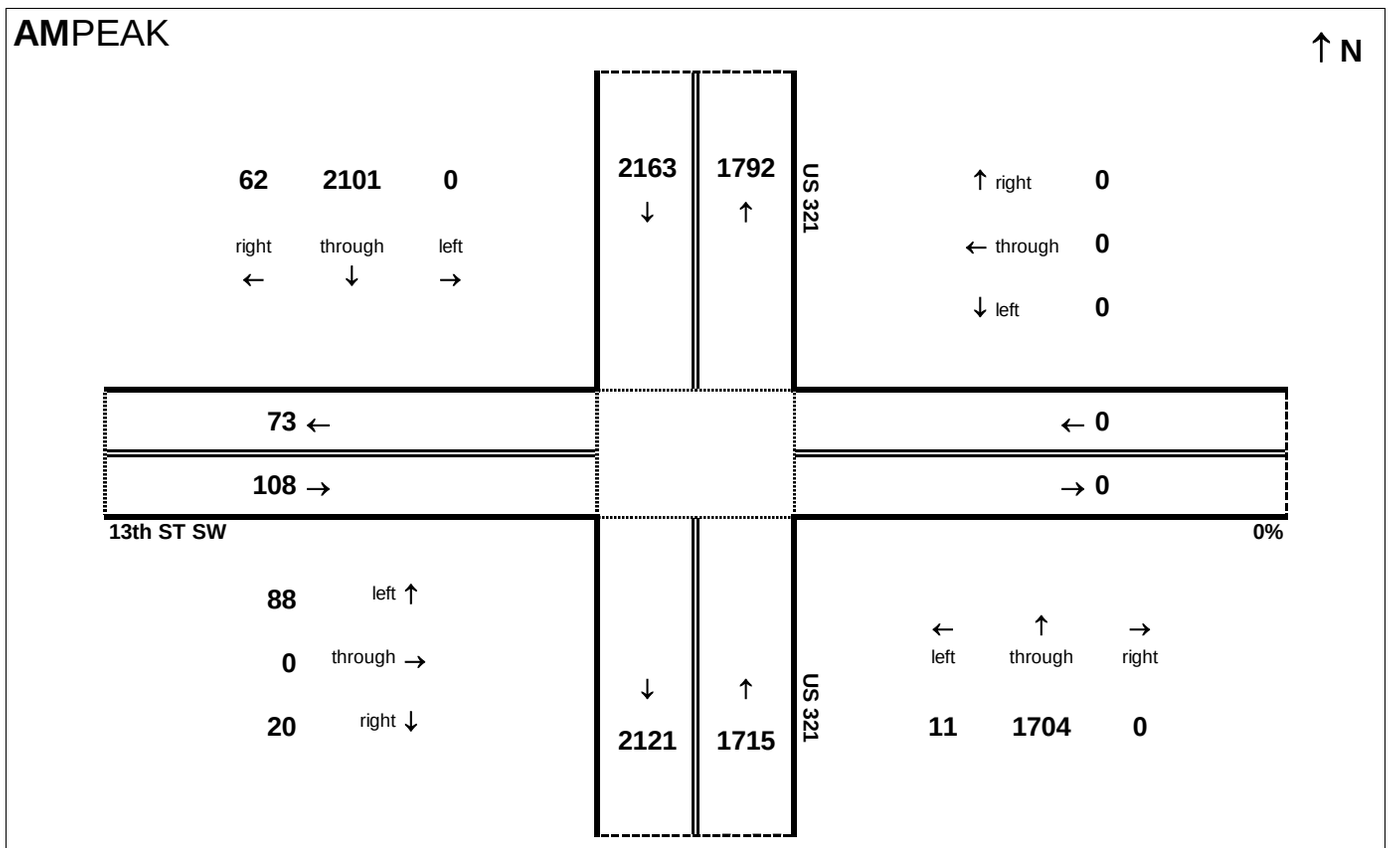



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and 13th St SW

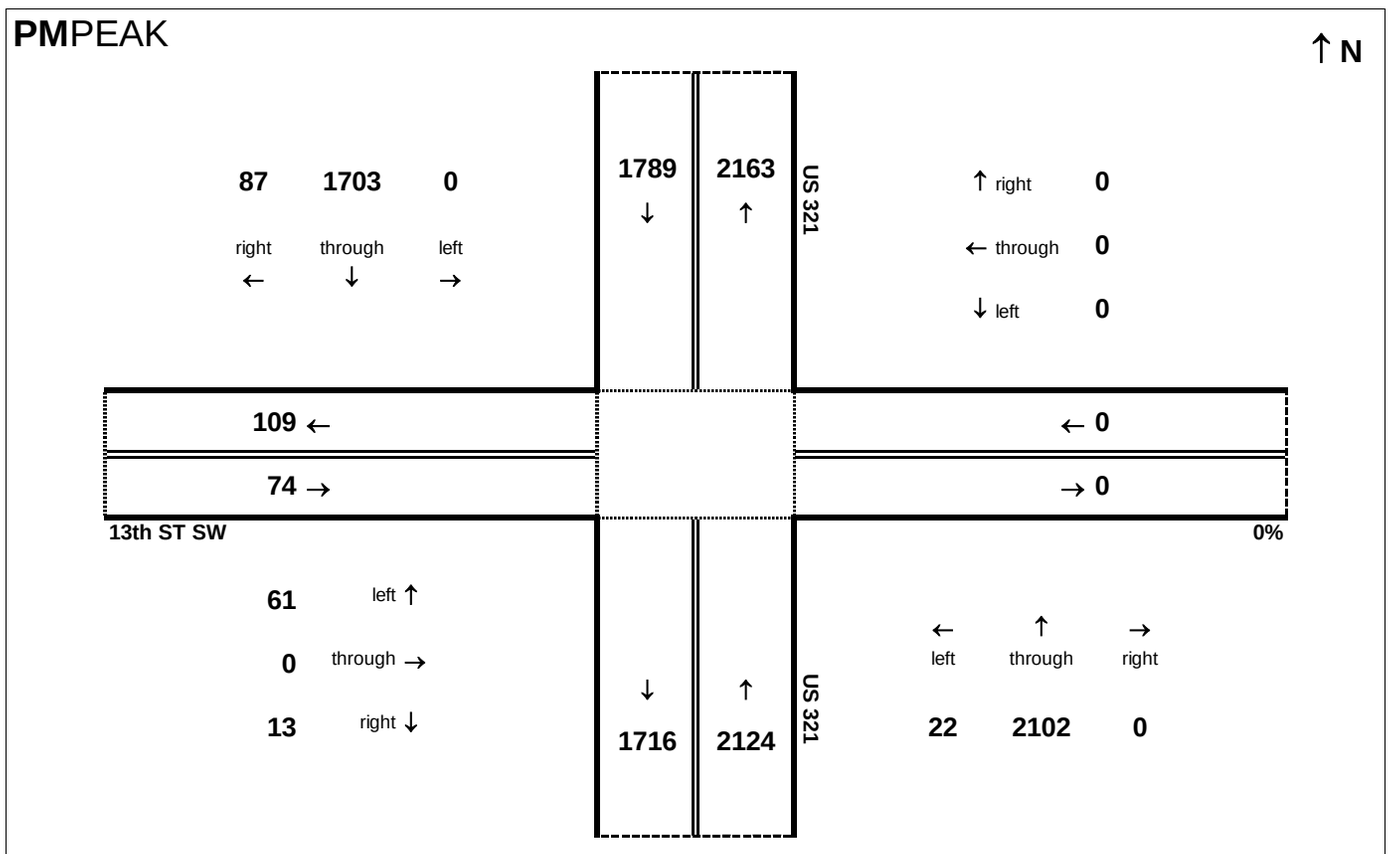
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 2

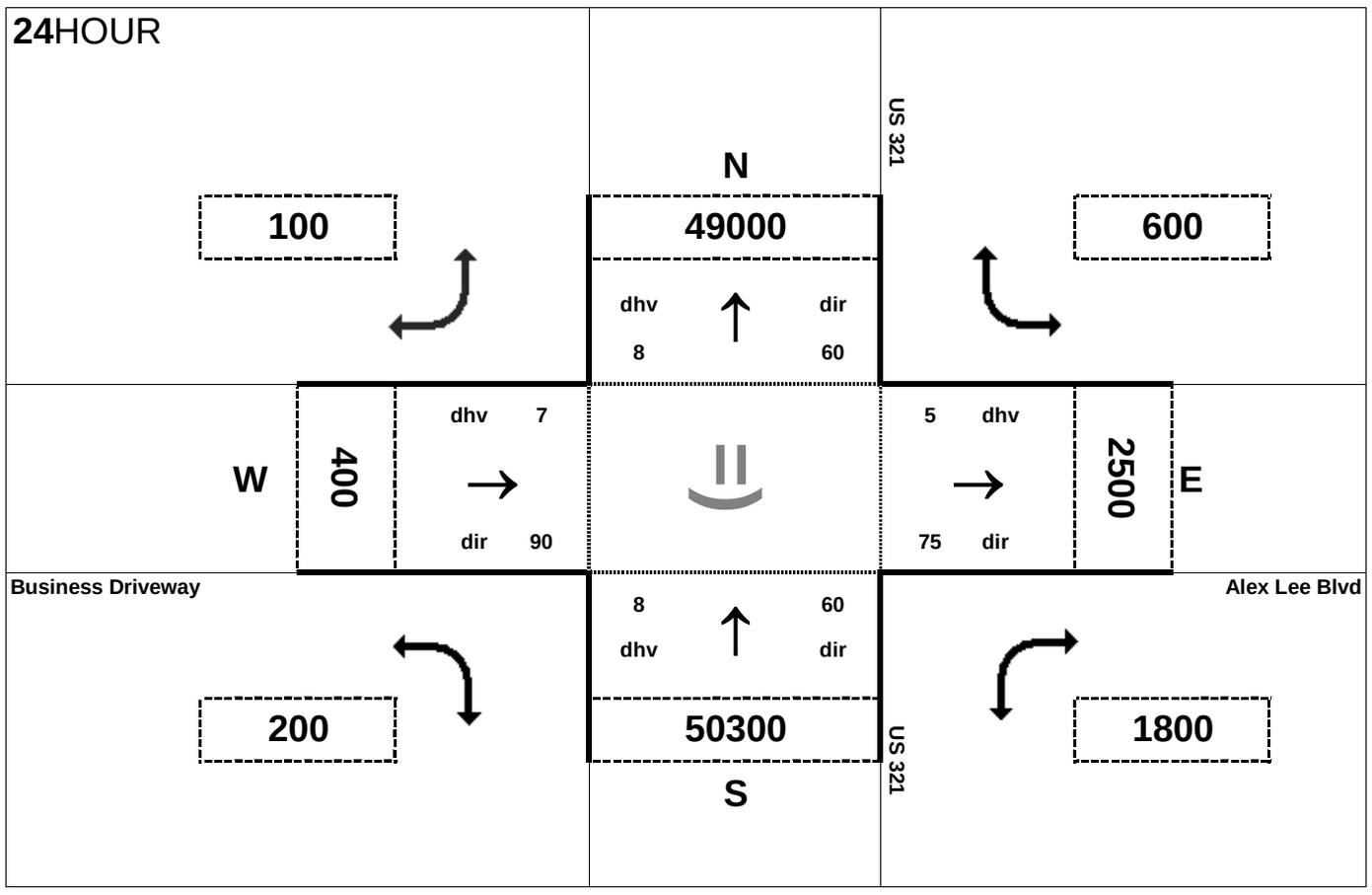
**Project:**
U-4700




*AM peak hour inflow is 3987 vehicles. AM peak hour outflow is 3986 vehicles.*




*PM peak hour inflow is 3986 vehicles. PM peak hour outflow is 3987 vehicles.*

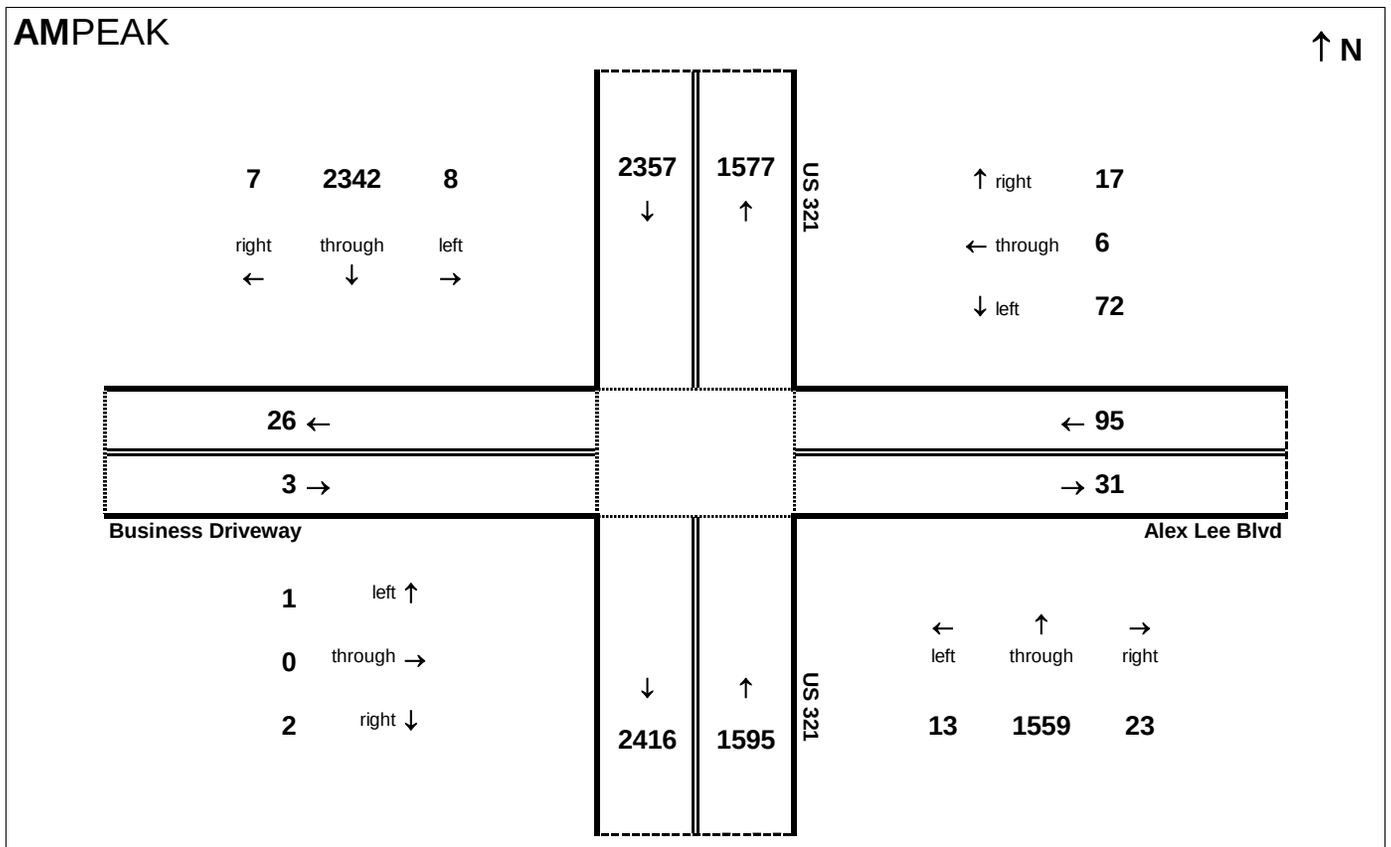



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and Alex Lee Blvd

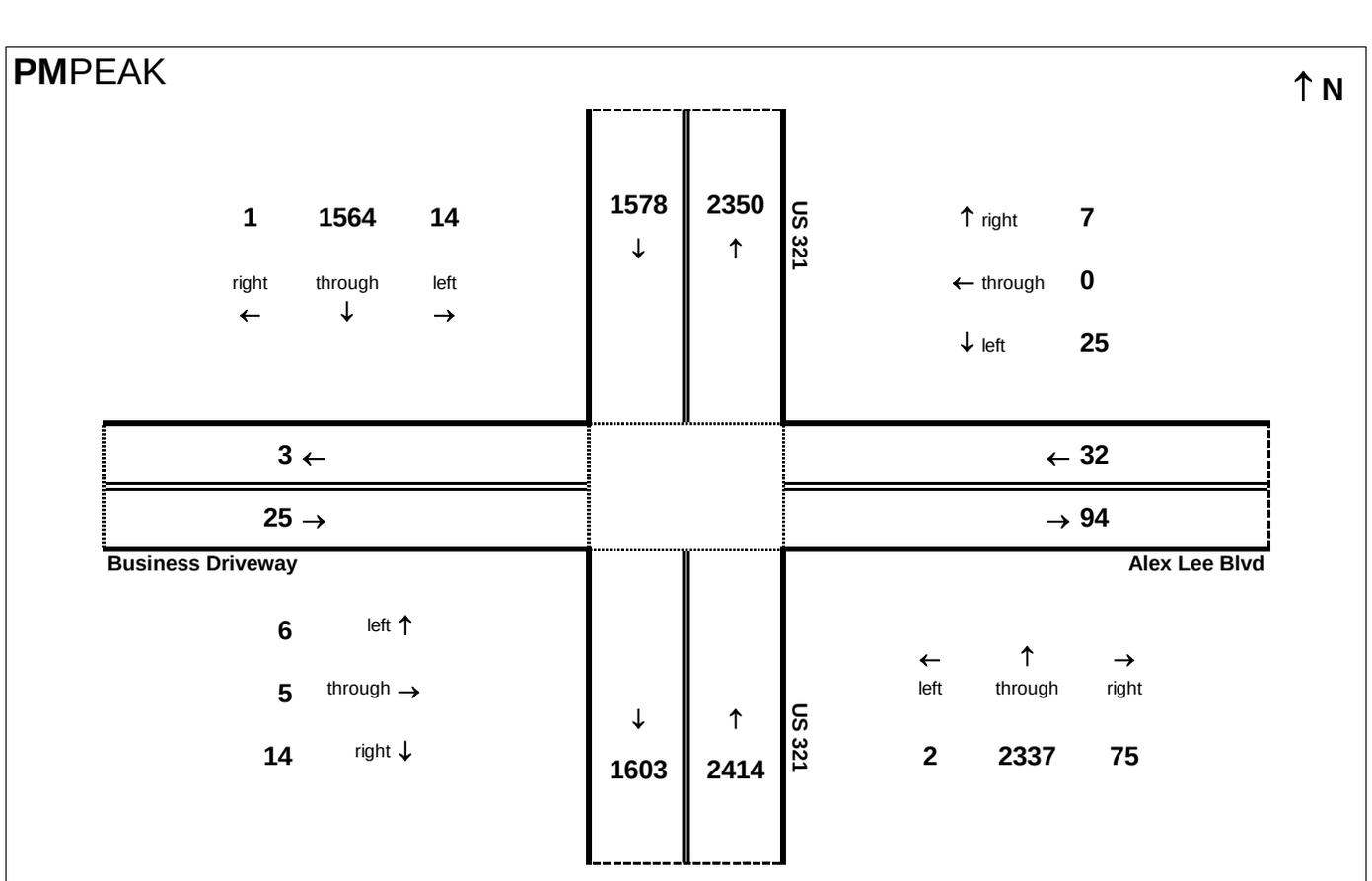
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 2

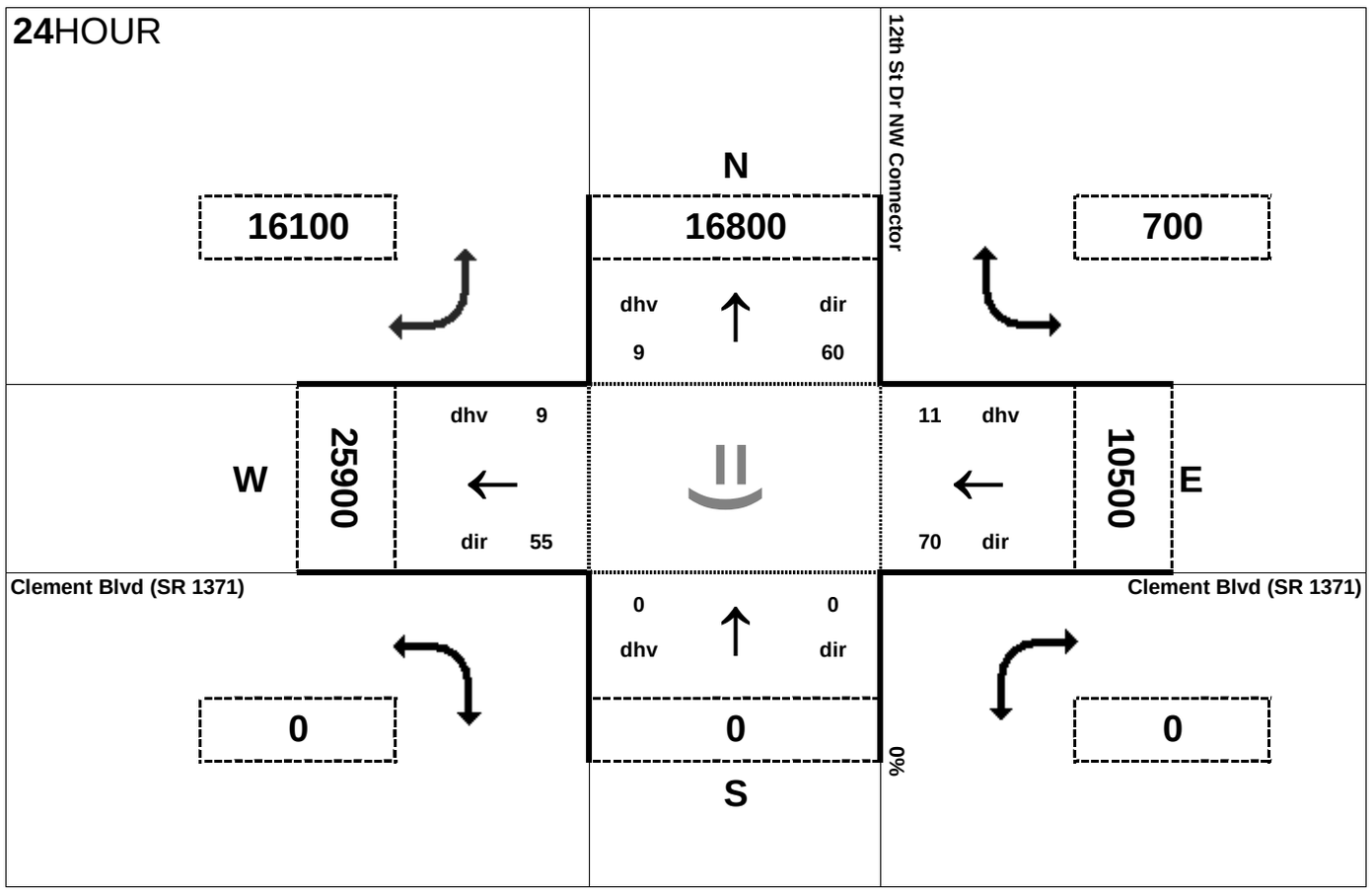
**Project:**
U-4700




*AM peak hour inflow is 4049 vehicles. AM peak hour outflow is 4048 vehicles.*




*PM peak hour inflow is 4048 vehicles. PM peak hour outflow is 4049 vehicles.*

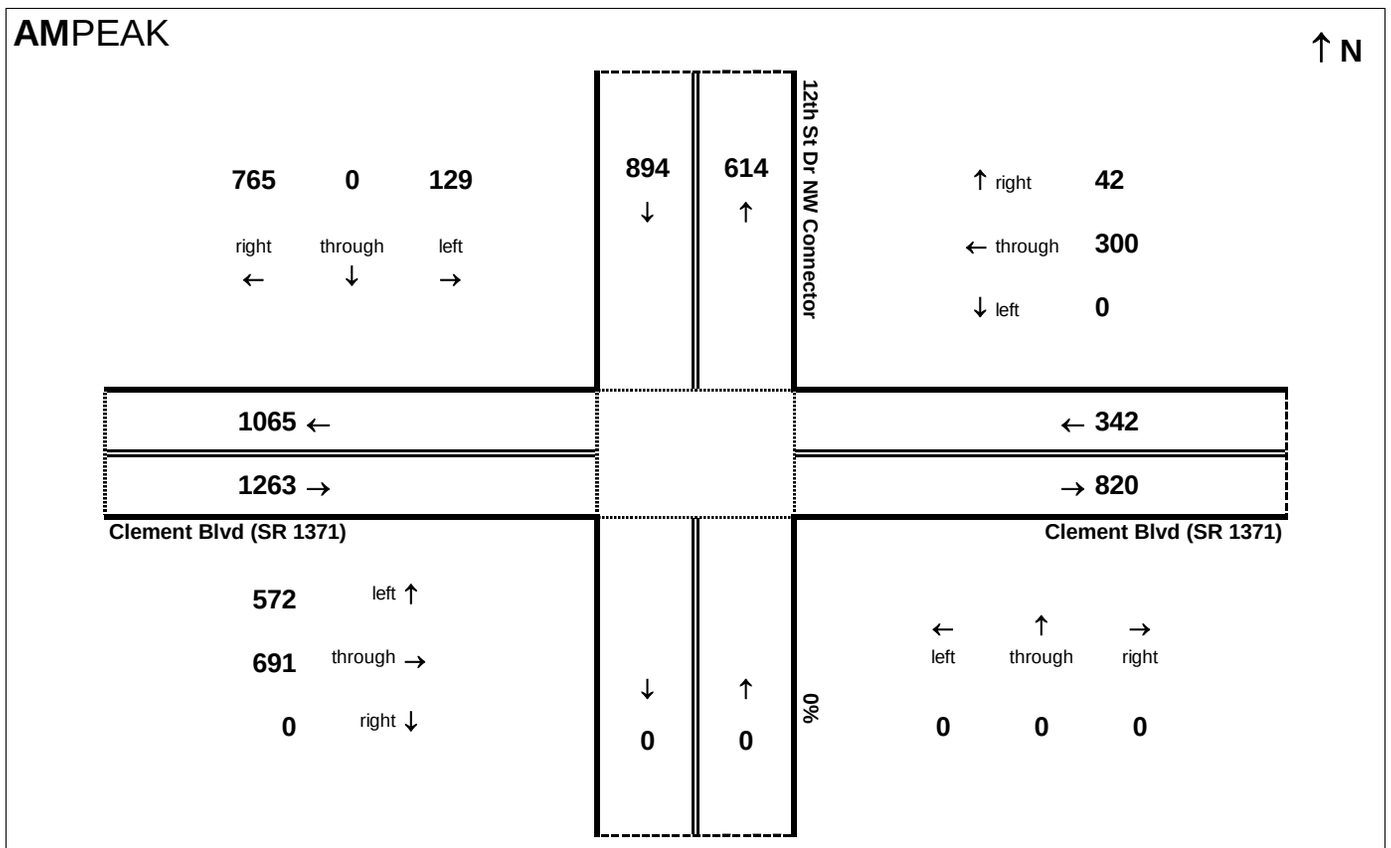



**Peak Hour Volume Breakouts Report:**
Intersection of Clement Blvd at 12th St Dr NW Connector

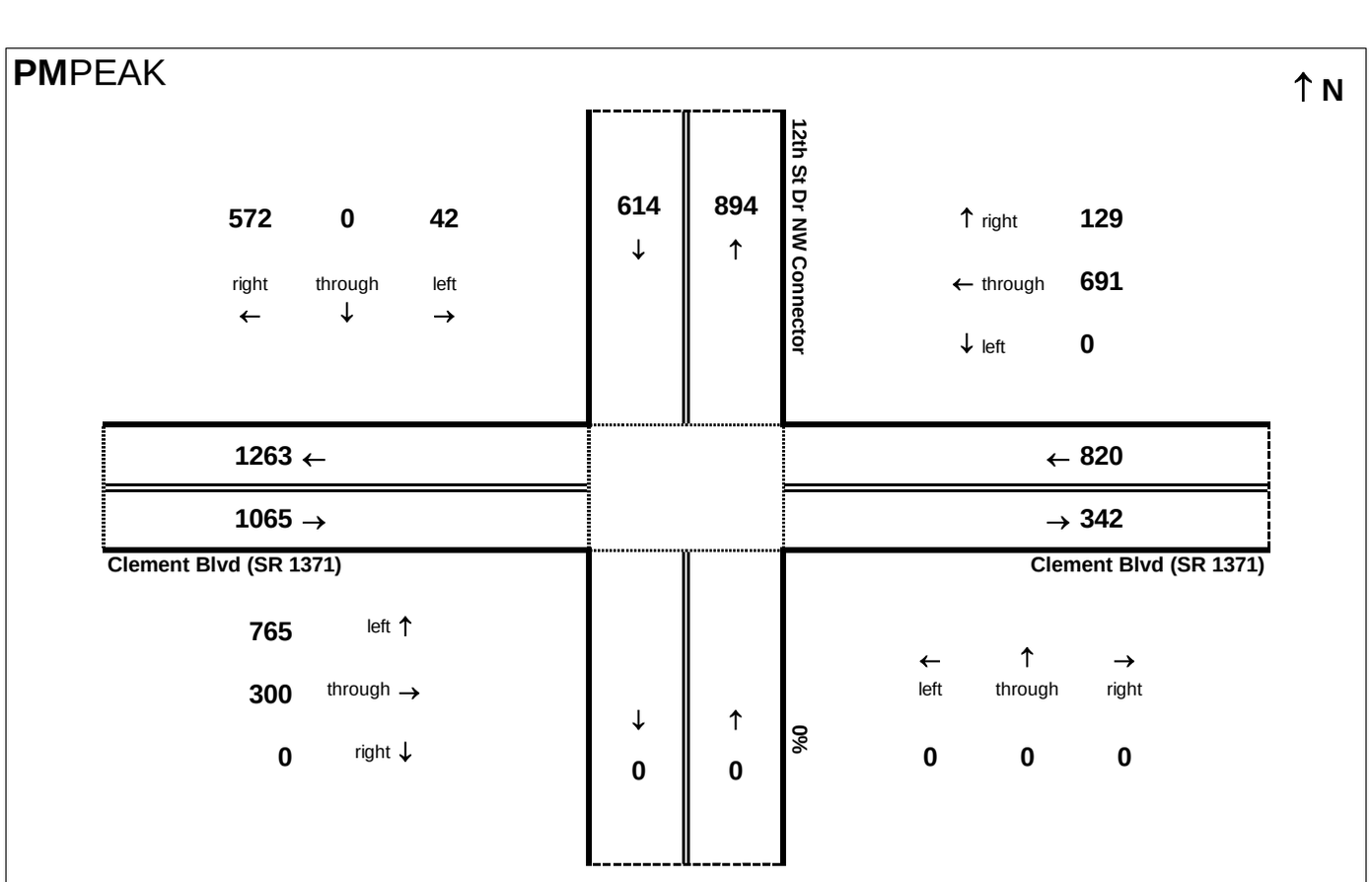
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 2

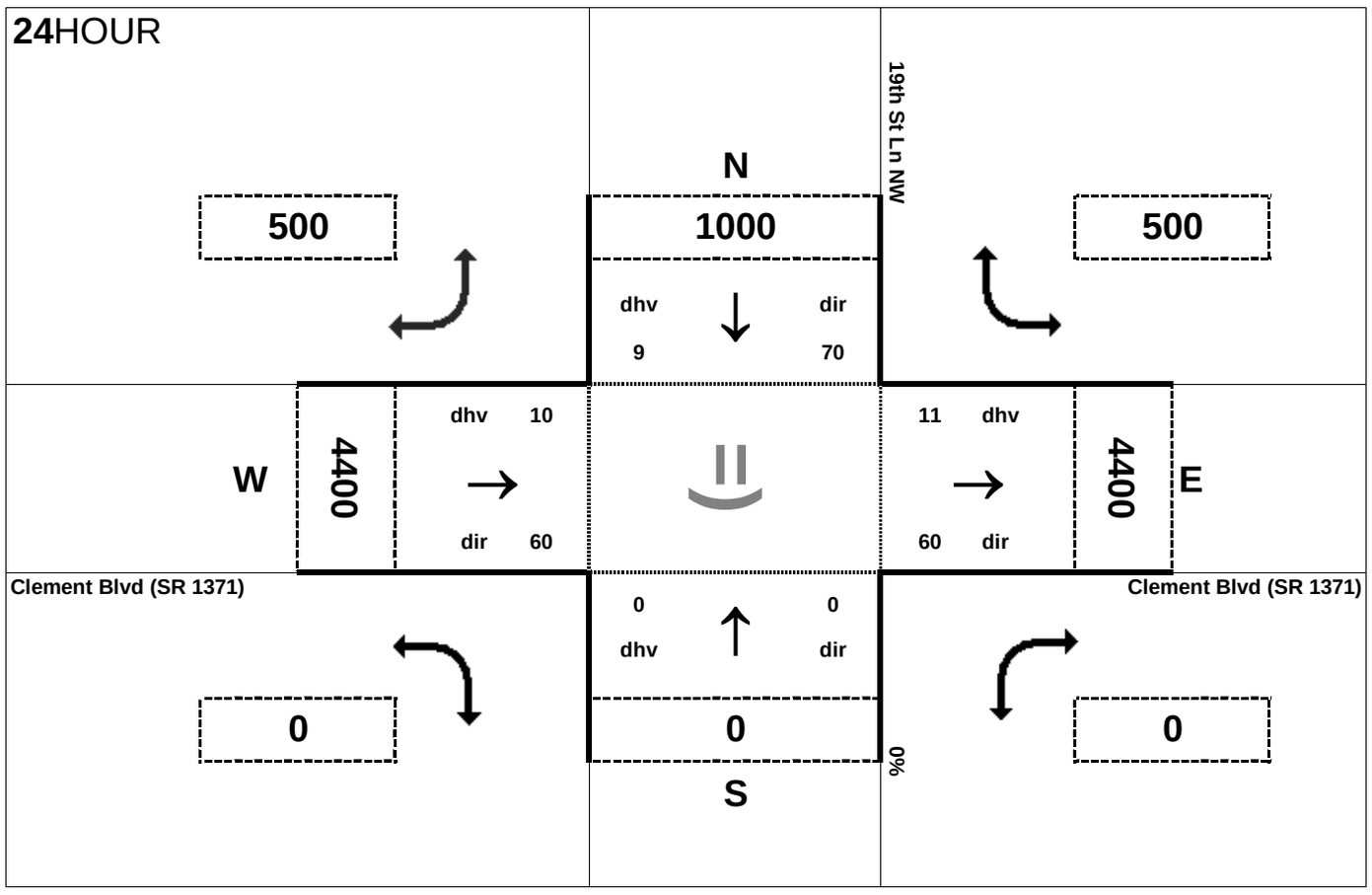
**Project:**
U-4700




*AM peak hour inflow is 2498 vehicles. AM peak hour outflow is 2500 vehicles.*




*PM peak hour inflow is 2500 vehicles. PM peak hour outflow is 2498 vehicles.*

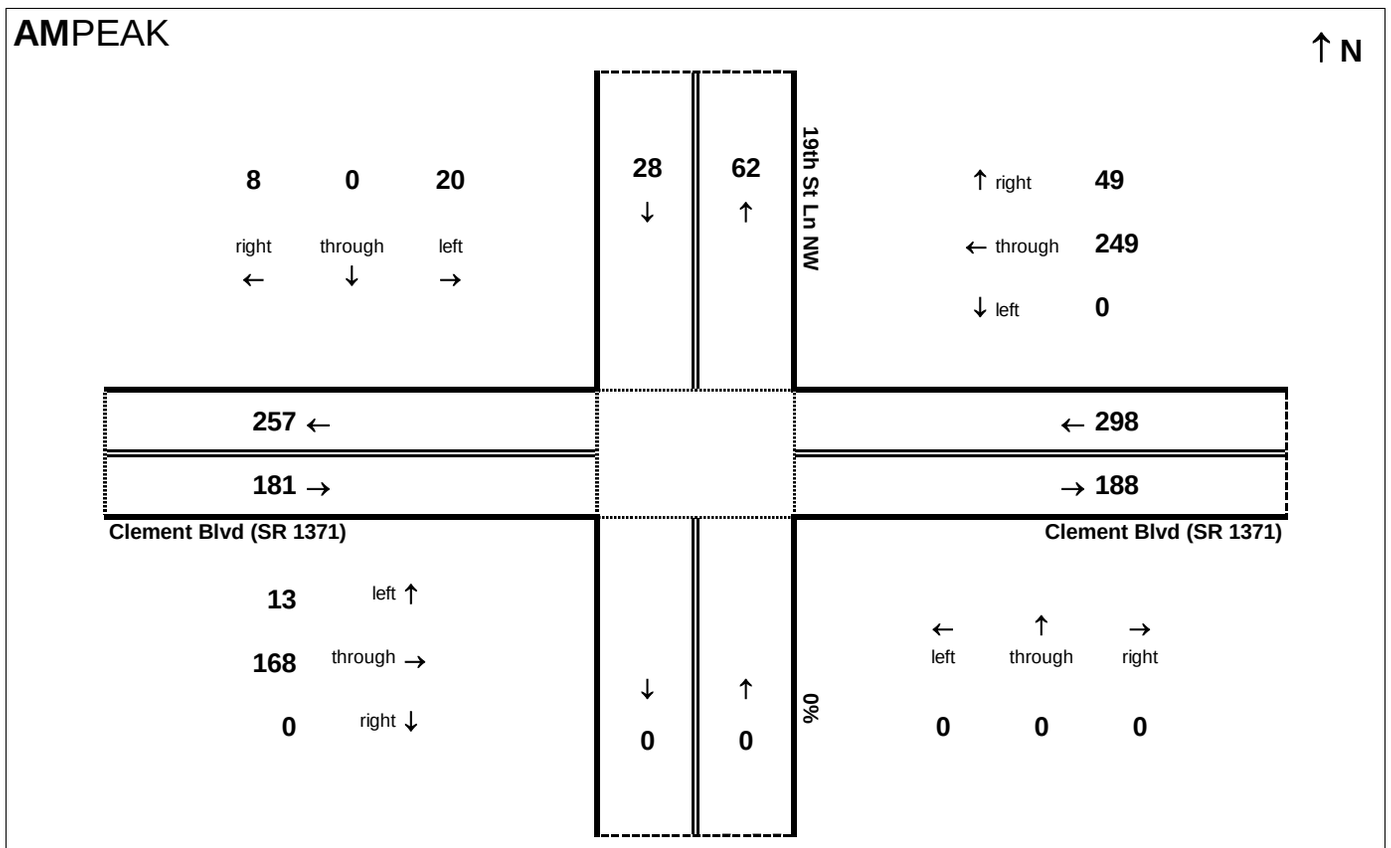



**Peak Hour Volume Breakouts Report:**
Intersection of Clement Blvd and 19th St Ln NW

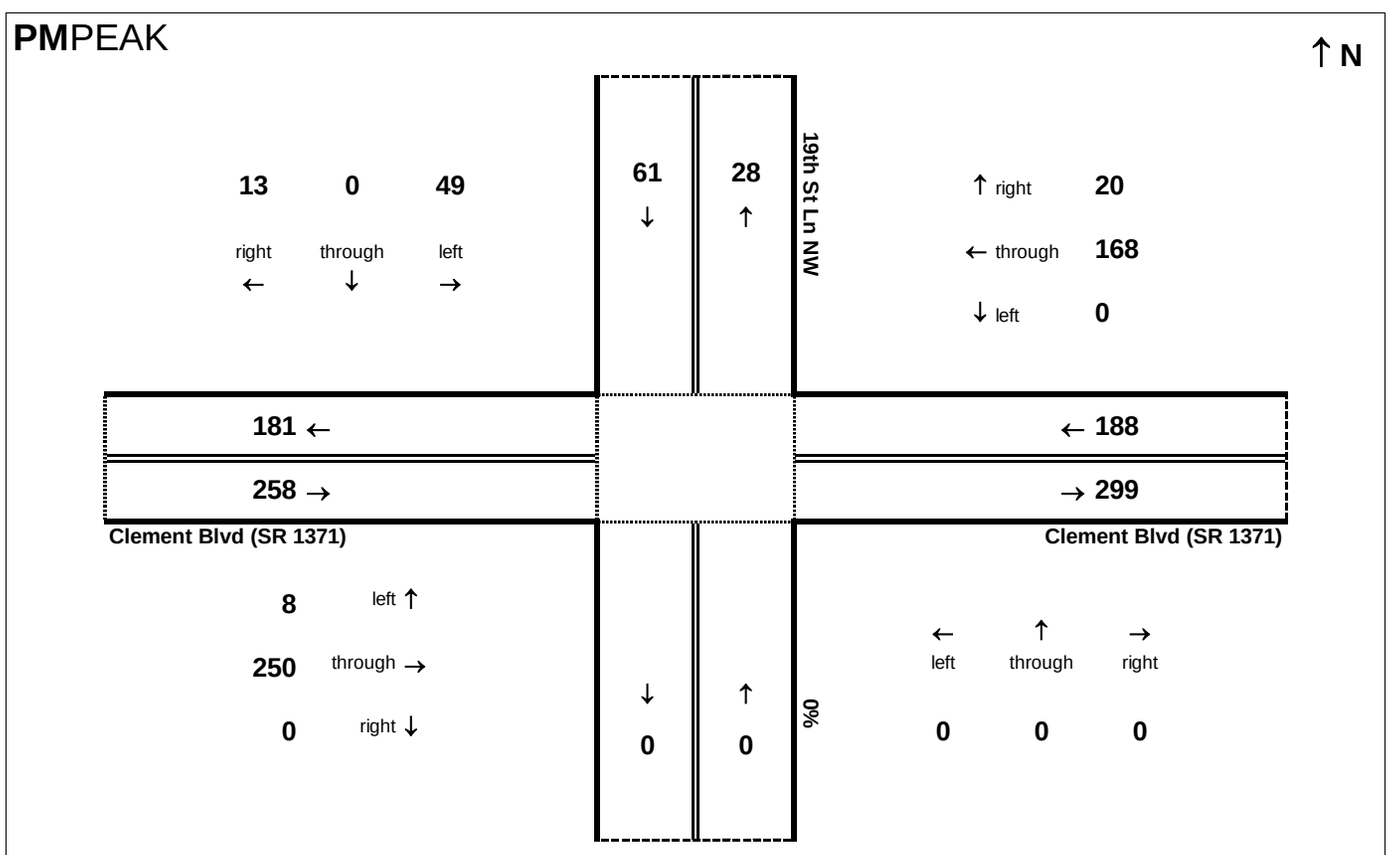
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 2

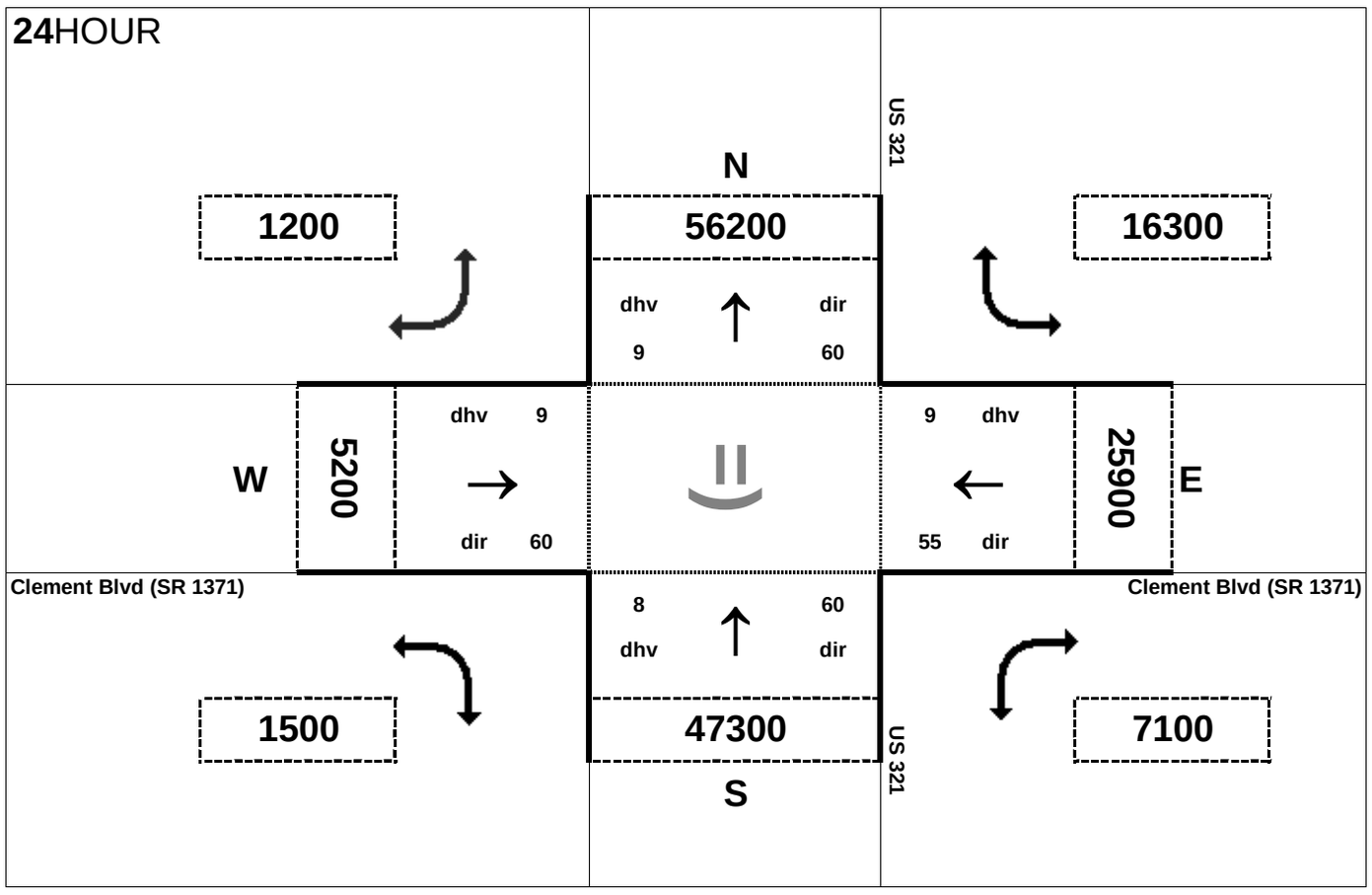
**Project:**
U-4700




*AM peak hour inflow is 507 vehicles. AM peak hour outflow is 507 vehicles.*




*PM peak hour inflow is 506 vehicles. PM peak hour outflow is 507 vehicles.*

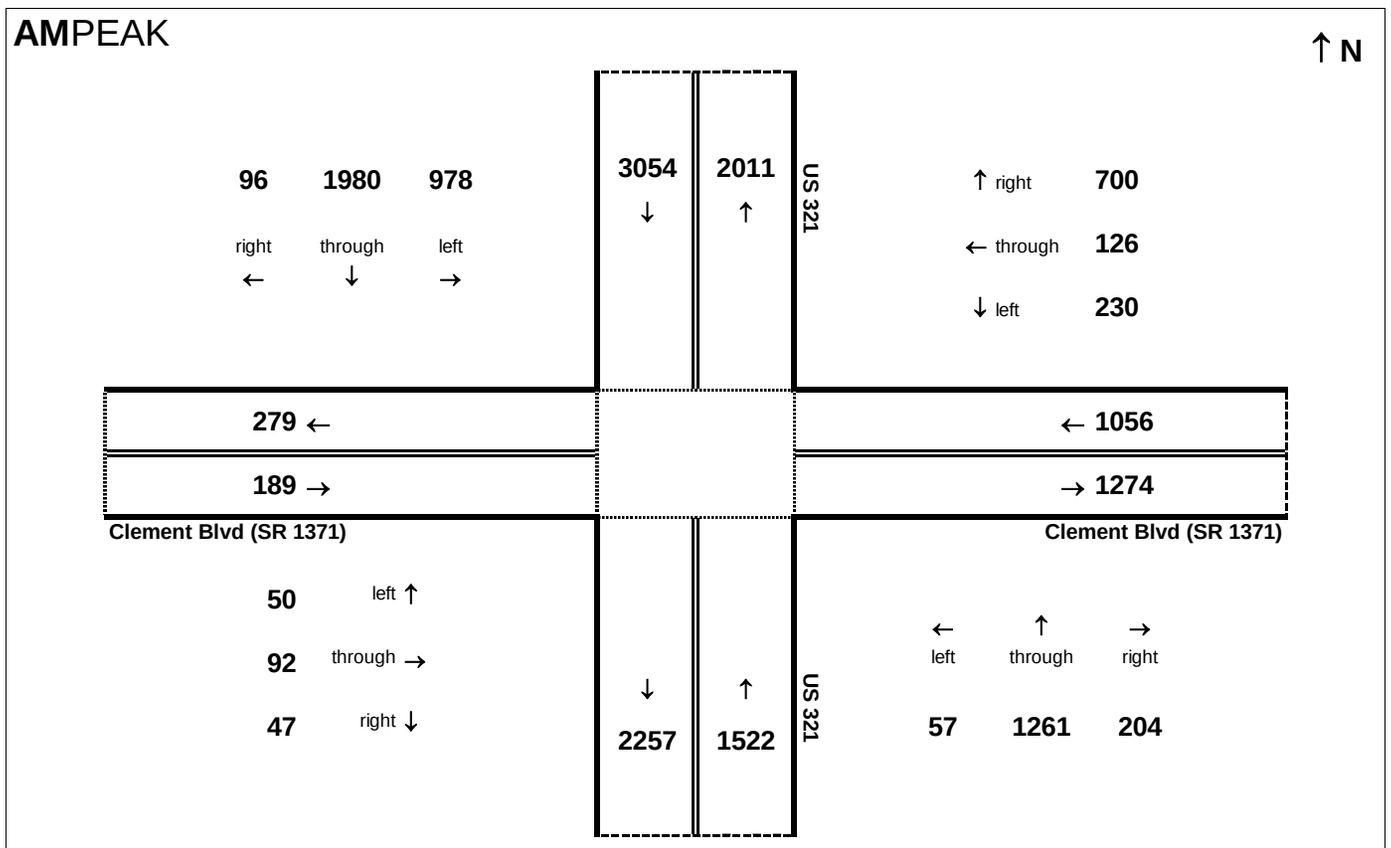



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and Clement Blvd

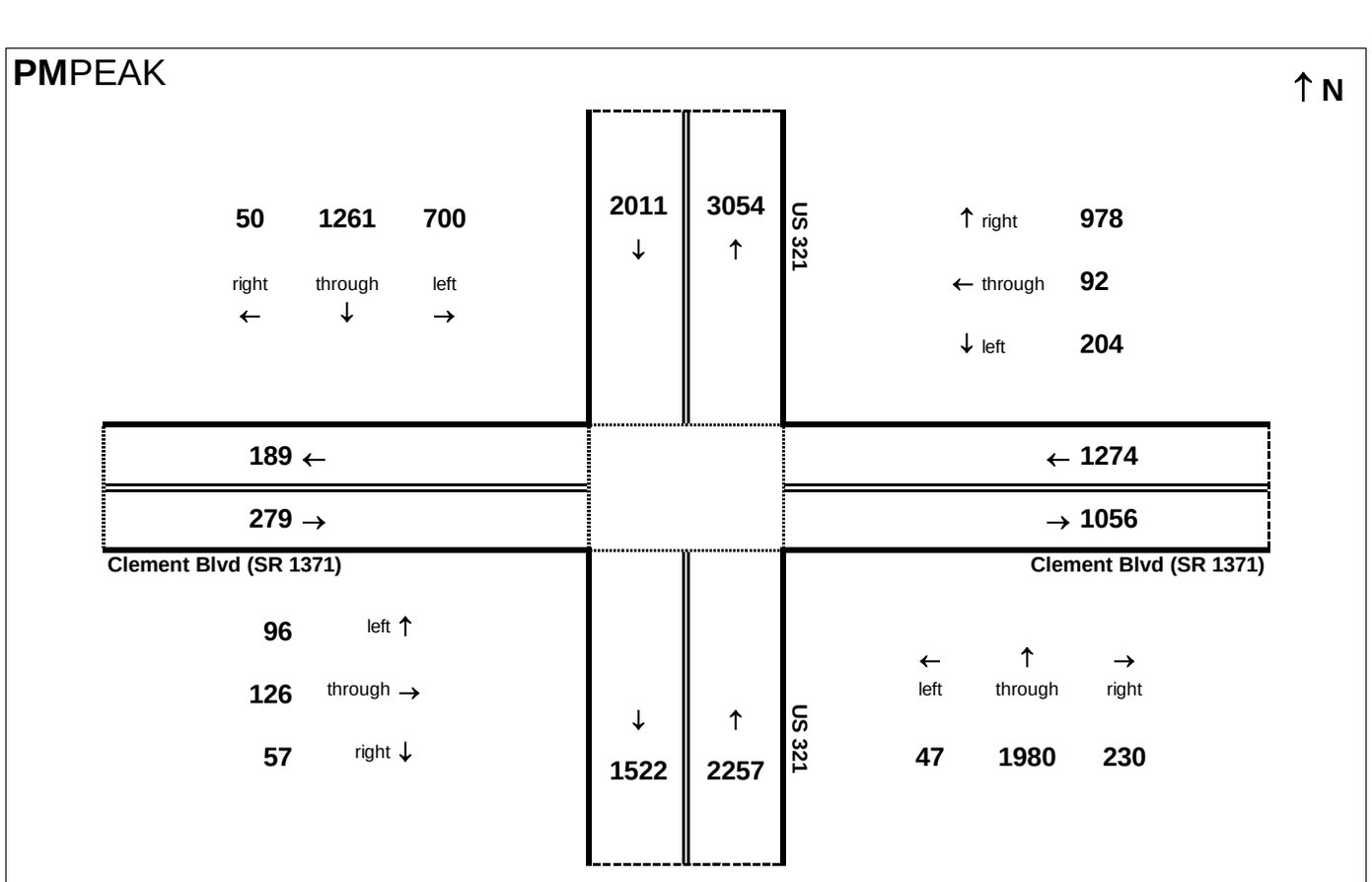
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 2

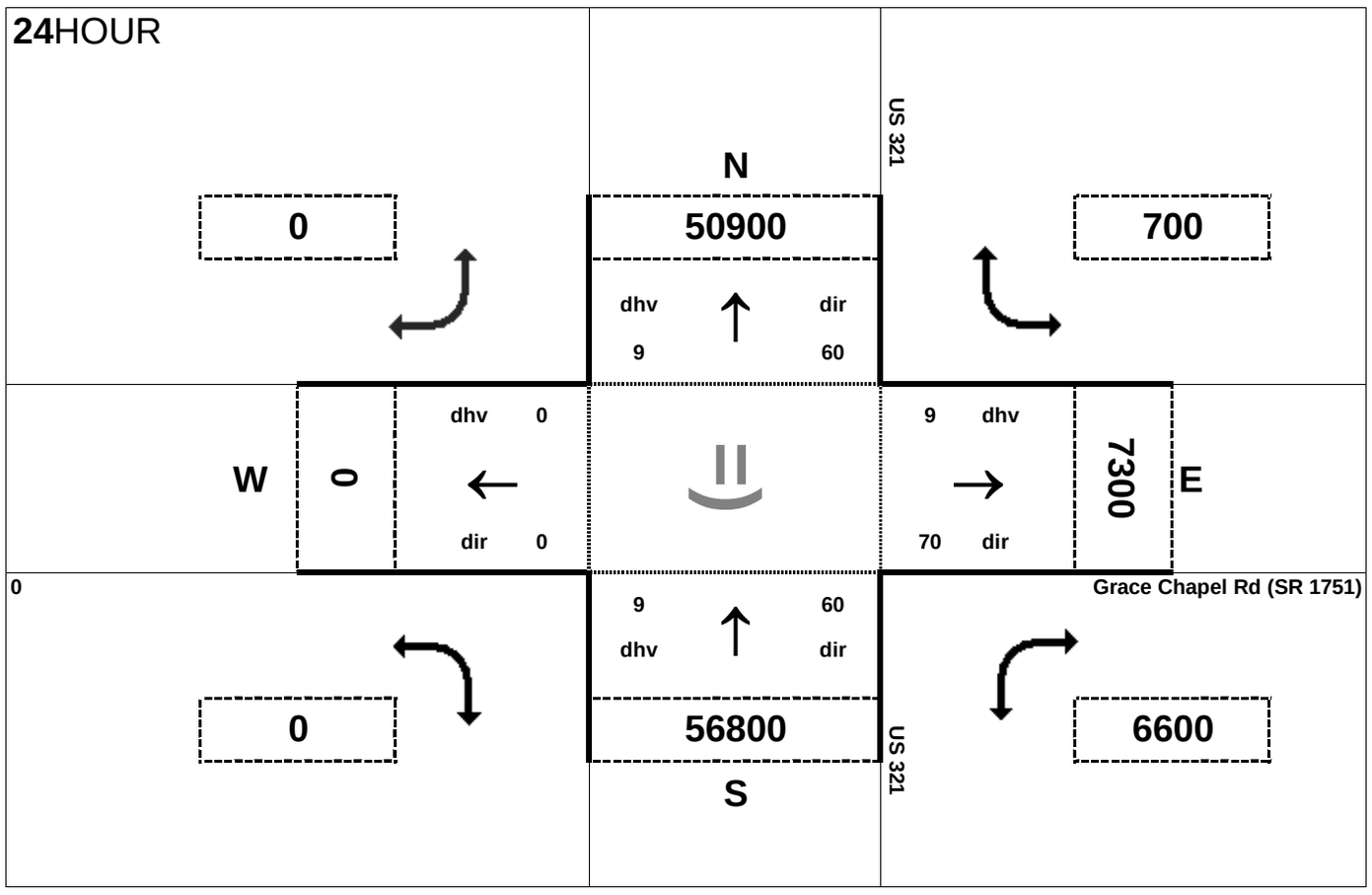
**Project:**
U-4700




*AM peak hour inflow is 5820 vehicles. AM peak hour outflow is 5820 vehicles.*




*PM peak hour inflow is 5820 vehicles. PM peak hour outflow is 5820 vehicles.*

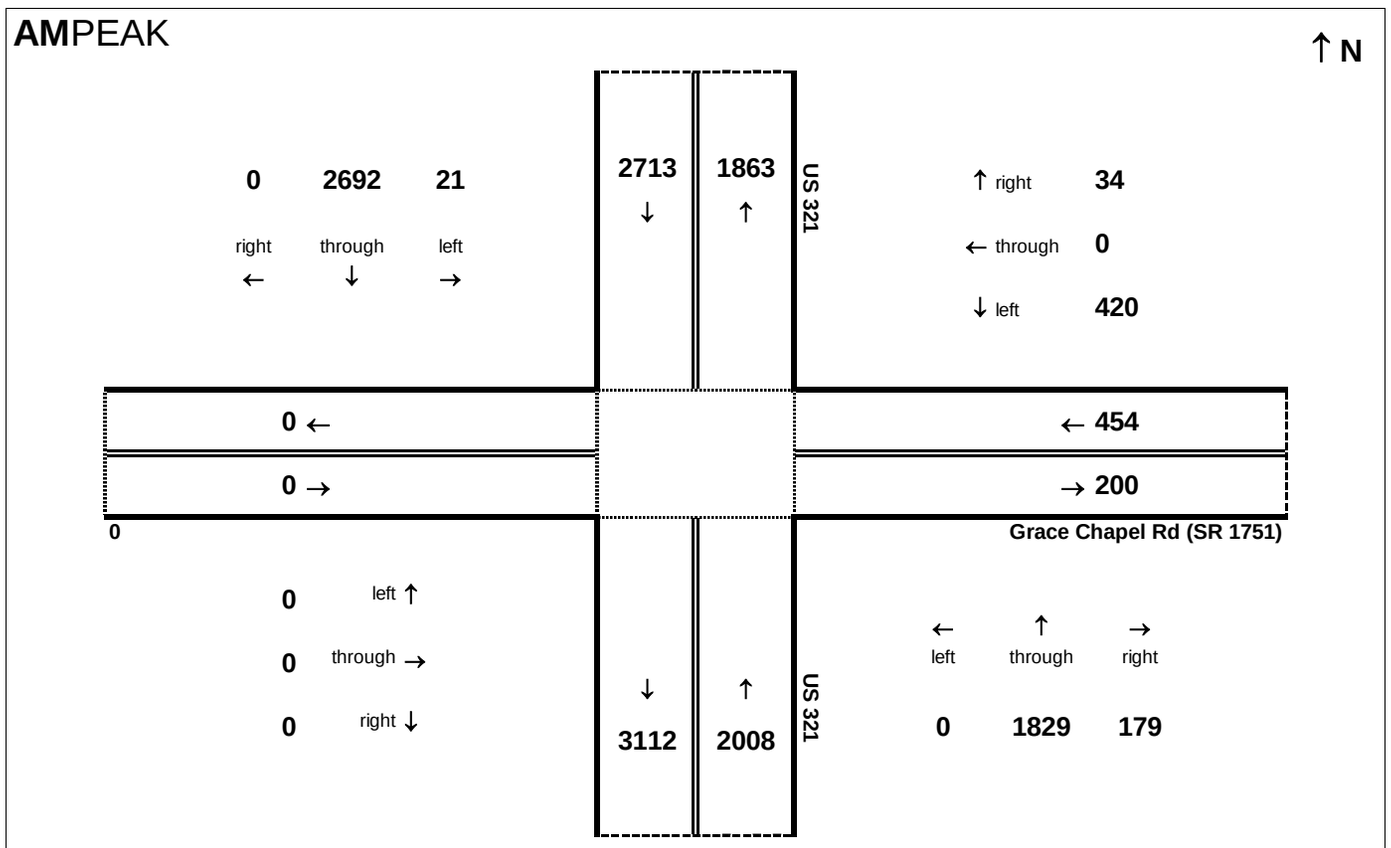



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and Grace Chapel Rd

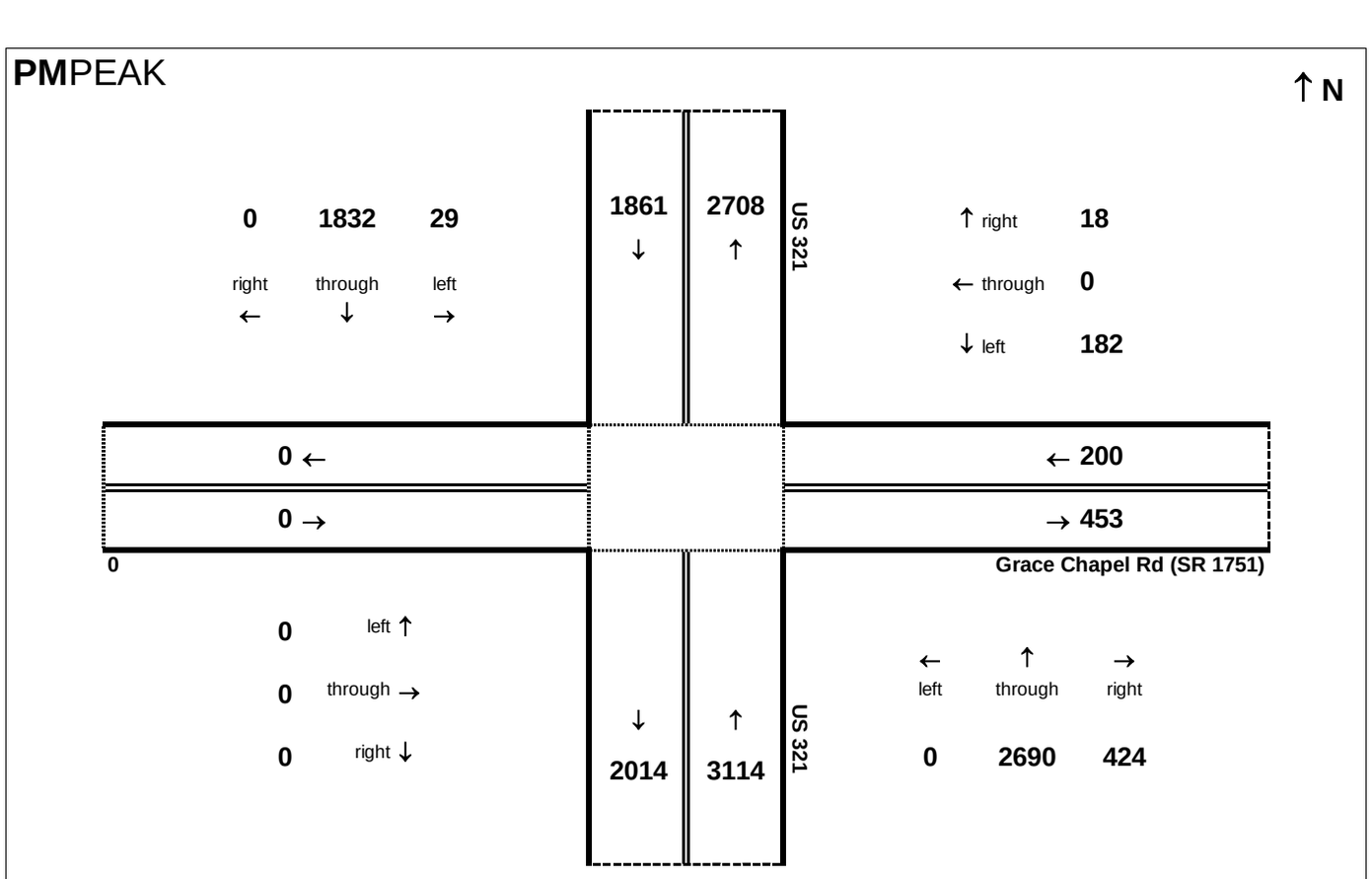
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 2

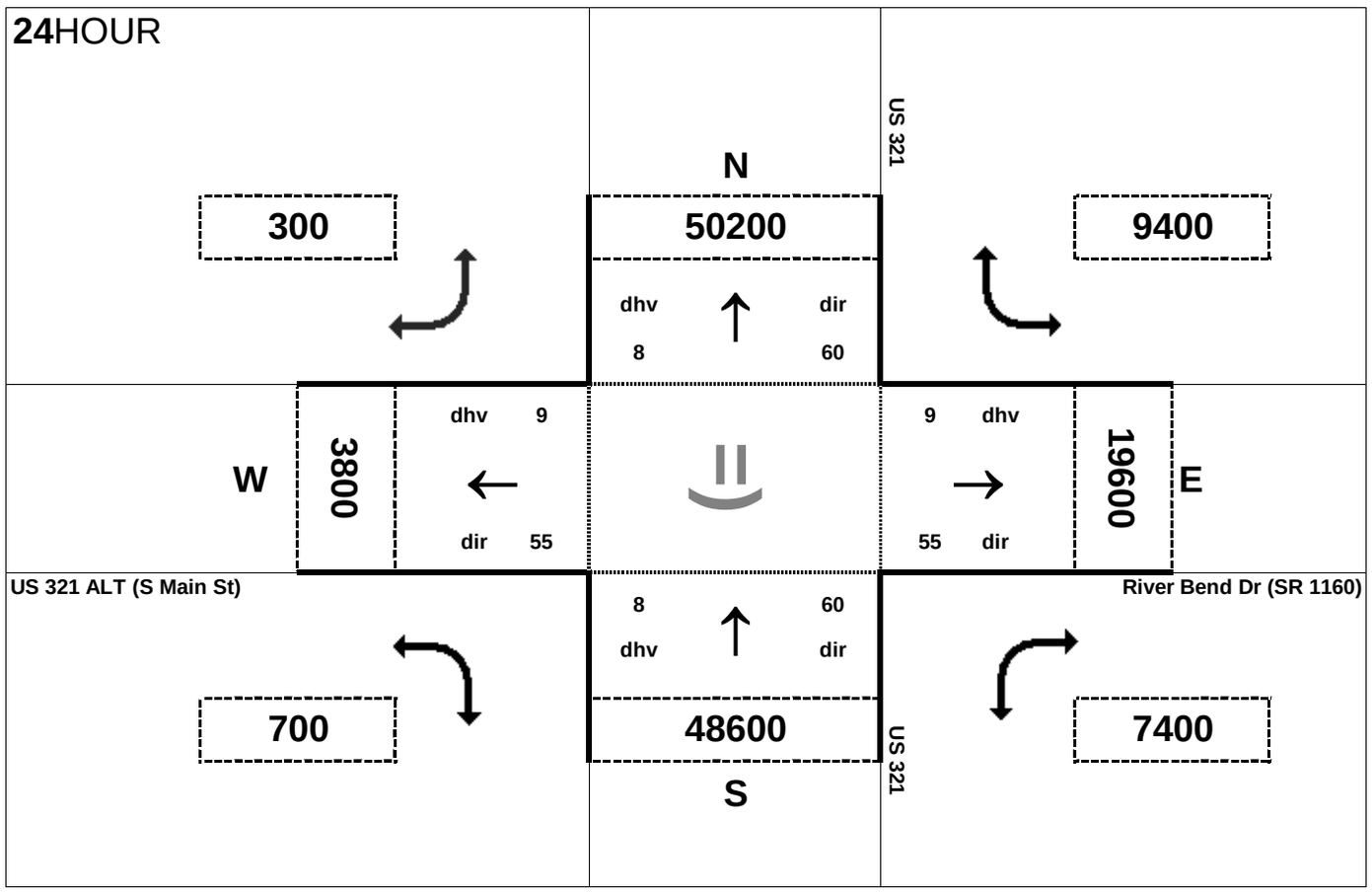
**Project:**
U-4700




*AM peak hour inflow is 5175 vehicles. AM peak hour outflow is 5175 vehicles.*




*PM peak hour inflow is 5175 vehicles. PM peak hour outflow is 5175 vehicles.*

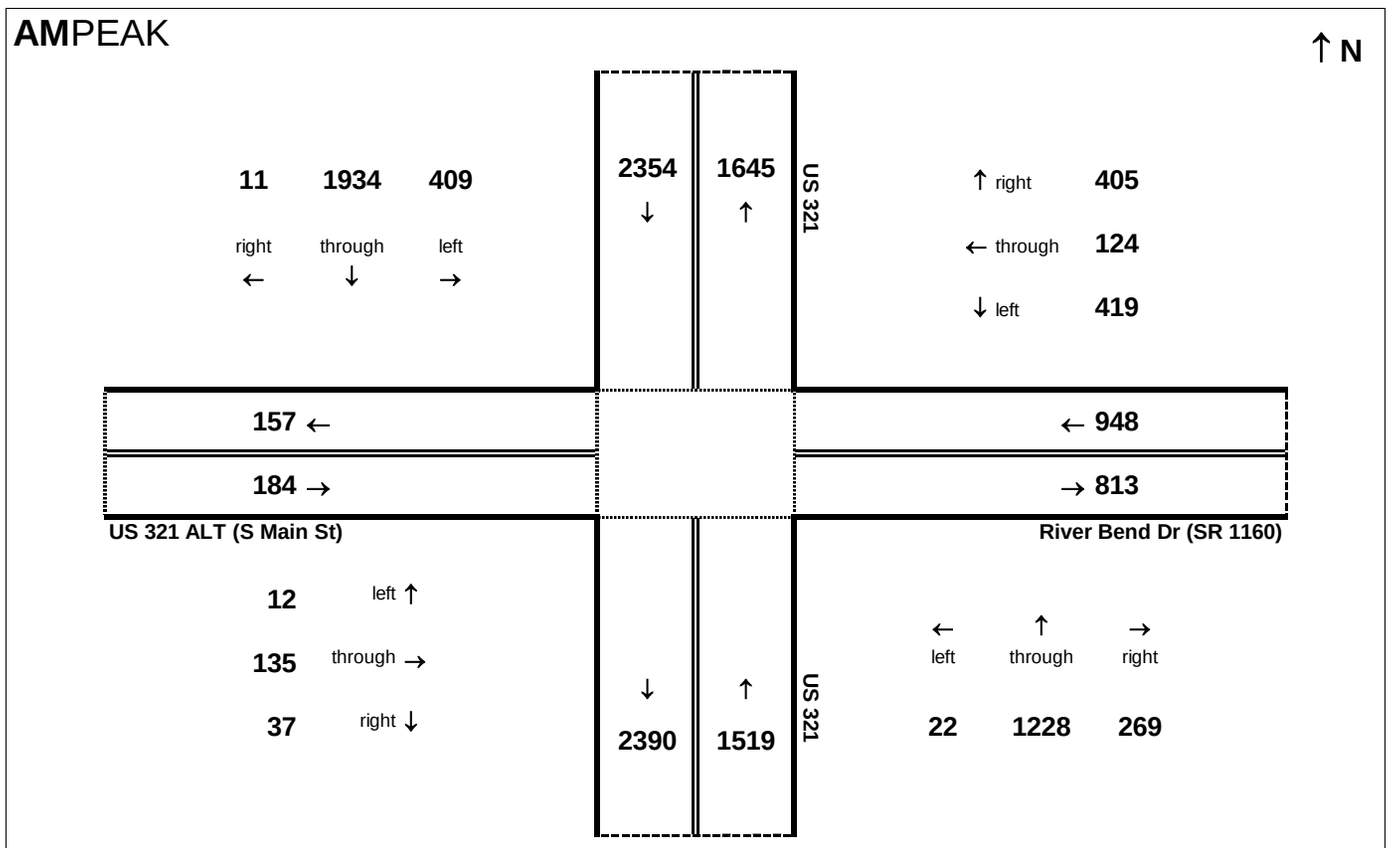



**Peak Hour Volume Breakouts Report:**
Intersection of US 321 and US 321 ALT

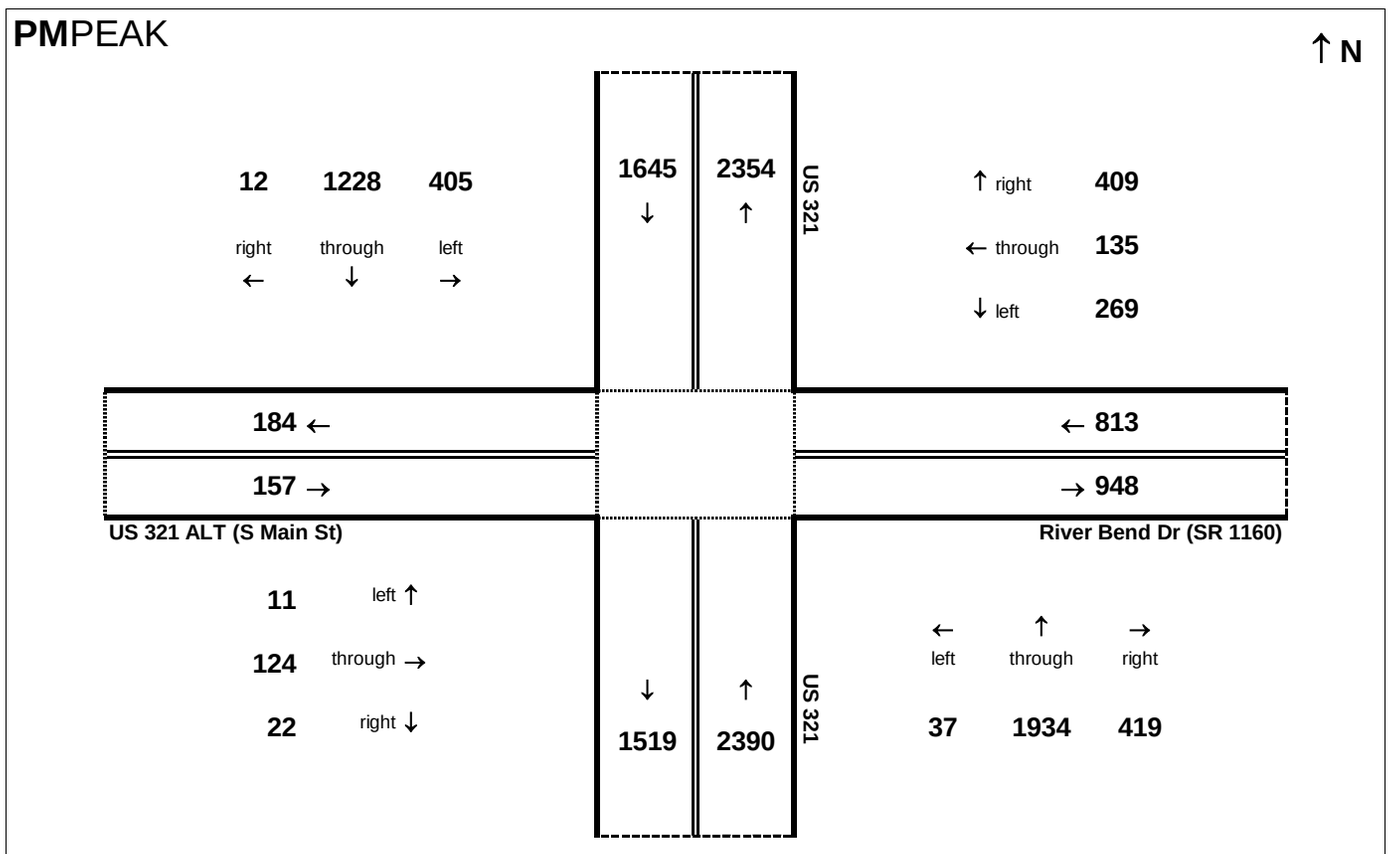
**Traffic Forecast Release Date:**
December-16

**Traffic Data Year:**
2040 Build 2

**Project:**
U-4700




*AM peak hour inflow is 5005 vehicles. AM peak hour outflow is 5005 vehicles.*




*PM peak hour inflow is 5005 vehicles. PM peak hour outflow is 5005 vehicles.*

Count Type: Turning Movement (No-Classification) - Intersection

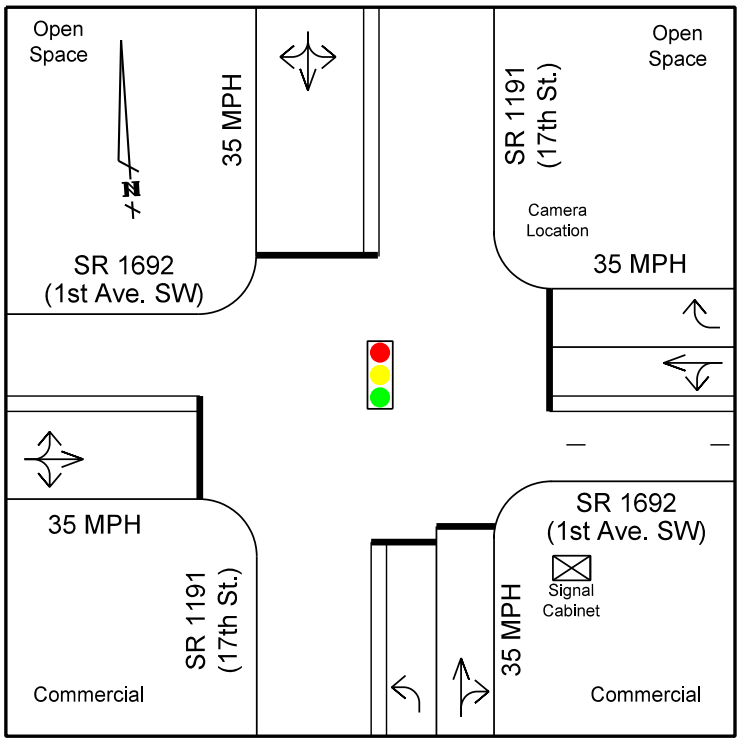
NCDOT Count # 17-06132

Duration: 13 Hours
Volume (ADT): 8,406

Milepost Begin: N/A
Milepost End: N/A

Catawba County
Hickory
Division 12

05/30/2017 12:00 PM to 7:00 PM, Cloudy, 68 F Low, 83 F High, Trace Precipitation, Sky cover 0.9
05/31/2017 6:00 AM to 12:00 PM, Cloudy, 63 F Low, 85 F High, Trace Precipitation, Sky cover 0.7





VICINITY MAP - N.T.S.

Comments:

1. Counted by: Walter Baker
2. Data processor: Jeff Hoppes
3. Method Used: CountCam 100
   Petra Pro software.
4. Equipment Operating Properly: Yes.
5. School in session: Yes.
6. Area lighting present: Yes.
7. Construction present: No.
8. Disabled pedestrians: No.
9. Pedestrian movements: Yes.
10. Break times: N/A
11. Traffic flow disruption: No.
12. Traffic control: Signal.
13. Signal Inventory number: 12-0690
14. Distance to nearest stop sign less than 300 ft?
    NB: N SB: N EB: N WB: N
15. Distance to nearest traffic signal less than 300 ft?
    NB: N SB: N EB: N WB: N
16. Distance to nearest at-grade RR crossing less than 200 ft?
    NB: N SB: N EB: N WB: N

Vendor: 60041
Purchase Order: 4300292232
Function Code: 1P10

Intersection of SR 1692
(1st Avenue SW) and SR 1191
(17th Street)

Comm. No. 2796


Mattern & Craig
CONSULTING ENGINEERS ◦ SURVEYORS
FIRM LICENSE No. C-1154
12 BROAD STREET
ASHEVILLE, NORTH CAROLINA 28801
(828) 254-2201
FAX (828) 254-4562

NCDOT Count # 17-06132
Catawba County
Hickory
Division 12

Northbound Approach looking North

Northbound Approach looking South

Intersection of SR 1692
(1st Avenue SW) and SR 1191
(17th Street)

Mattern & Craig
CONSULTING ENGINEERS ◦ SURVEYORS
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12 BROAD STREET
ASHEVILLE, NORTH CAROLINA 28801
(828) 254-2201
FAX (828) 254-4562

Comm. No. 2796

NCDOT Count # 17-06132
Catawba County
Hickory
Division 12

Southbound Approach looking South

Southbound Approach looking North

Intersection of SR 1692
(1st Avenue SW) and SR 1191
(17th Street)

Comm. No. 2796

Mattern & Craig
CONSULTING ENGINEERS ◦ SURVEYORS
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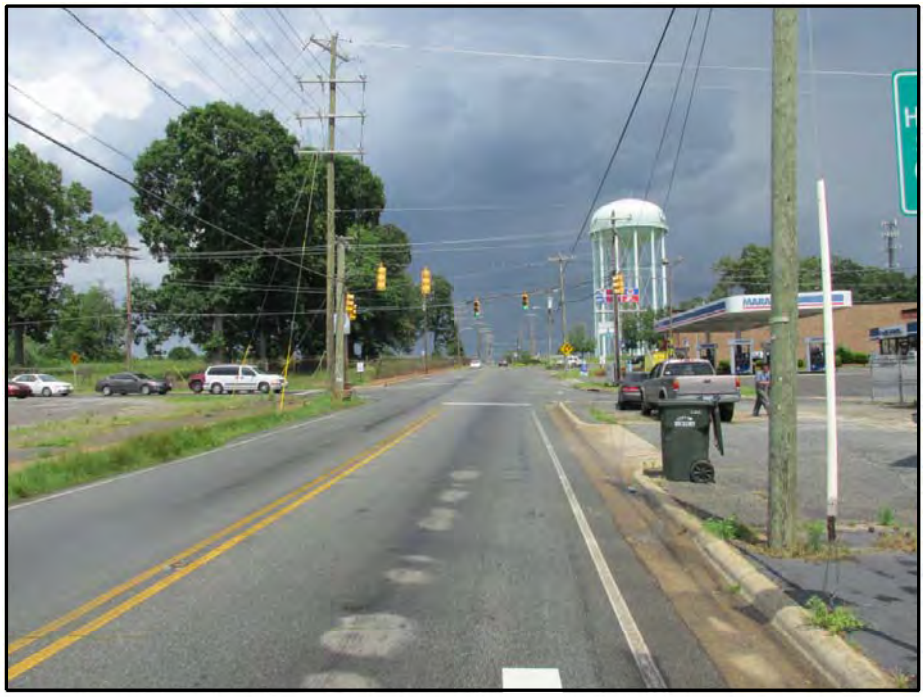
12 BROAD STREET
ASHEVILLE, NORTH CAROLINA 28801
(828) 254-2201
FAX (828) 254-4562

NCDOT Count # 17-06132
Catawba County
Hickory
Division 12



Eastbound Approach looking East


Eastbound Approach looking West

Intersection of SR 1692
(1st Avenue SW) and SR 1191
(17th Street)

Mattern & Craig
CONSULTING ENGINEERS ◦ SURVEYORS
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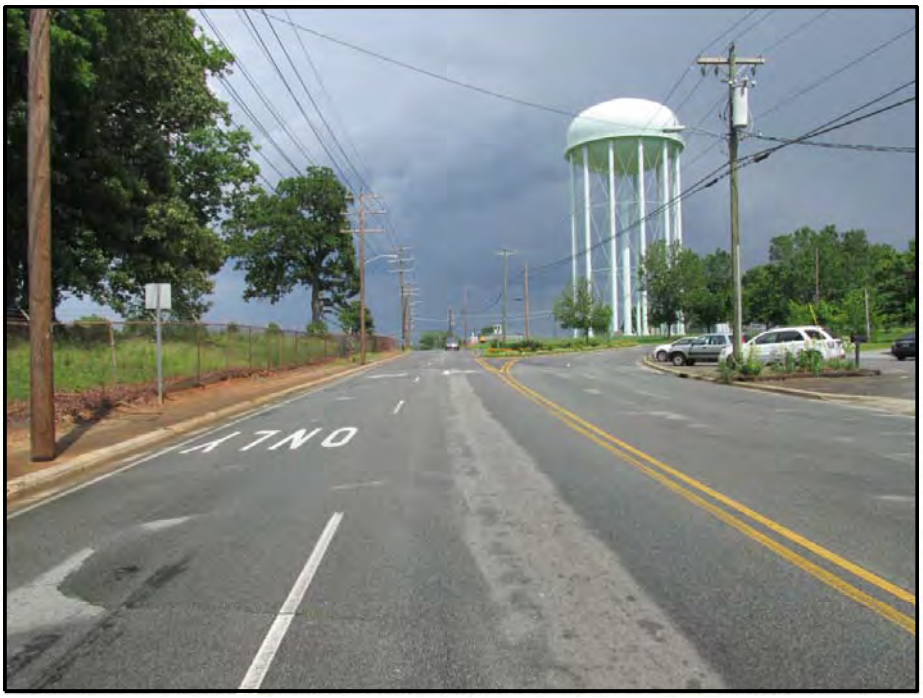
(828) 254-2201
FAX (828) 254-4562

Comm. No. 2796

NCDOT Count # 17-06132
Catawba County
Hickory
Division 12

Westbound Approach looking West



Westbound Approach looking East

Intersection of SR 1692
(1st Avenue SW) and SR 1191
(17th Street)

Comm. No. 2796

Mattern & Craig
CONSULTING ENGINEERS ◦ SURVEYORS
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12 BROAD STREET
ASHEVILLE, NORTH CAROLINA 28801
(828) 254-2201
FAX (828) 254-4562

**Mattern & Craig, Inc.**
12 Broad St.
Asheville, NC, 28801
*Phone: (828) 254-2201*
*Fax: (828) 254-4562*

File Name : 1706132
Site Code : 17-06132
Start Date : 6/1/2017
Page No : 1

Groups Printed- PV - Pedestrians

| | 17th Street Southbound | | | | | 1st Avenue SW Westbound | | | | | 17th Street Northbound | | | | | 1st Avenue SW Eastbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 06:00 AM | 2 | 9 | 4 | 2 | 15 | 6 | 7 | 1 | 0 | 14 | 0 | 3 | 2 | 0 | 5 | 0 | 23 | 5 | 0 | 28 | 2 | 62 | 64 |
| 06:15 AM | 3 | 8 | 2 | 0 | 13 | 2 | 11 | 2 | 0 | 15 | 1 | 6 | 2 | 0 | 9 | 1 | 17 | 2 | 0 | 20 | 0 | 57 | 57 |
| 06:30 AM | 5 | 9 | 8 | 0 | 22 | 7 | 21 | 8 | 1 | 36 | 1 | 6 | 0 | 2 | 7 | 2 | 43 | 7 | 0 | 52 | 3 | 117 | 120 |
| 06:45 AM | 4 | 15 | 13 | 0 | 32 | 10 | 44 | 7 | 0 | 61 | 3 | 7 | 1 | 0 | 11 | 1 | 23 | 4 | 0 | 28 | 0 | 132 | 132 |
| Total | 14 | 41 | 27 | 2 | 82 | 25 | 83 | 18 | 1 | 126 | 5 | 22 | 5 | 2 | 32 | 4 | 106 | 18 | 0 | 128 | 5 | 368 | 373 |
| 07:00 AM | 6 | 11 | 4 | 0 | 21 | 10 | 19 | 6 | 0 | 35 | 1 | 10 | 1 | 1 | 12 | 0 | 26 | 2 | 0 | 28 | 1 | 96 | 97 |
| 07:15 AM | 4 | 10 | 5 | 0 | 19 | 8 | 27 | 7 | 0 | 42 | 1 | 13 | 0 | 0 | 14 | 4 | 29 | 0 | 1 | 33 | 1 | 108 | 109 |
| 07:30 AM | 4 | 17 | 8 | 0 | 29 | 11 | 30 | 7 | 0 | 48 | 1 | 9 | 5 | 0 | 15 | 6 | 47 | 8 | 0 | 61 | 0 | 153 | 153 |
| 07:45 AM | 8 | 12 | 9 | 0 | 29 | 5 | 33 | 6 | 0 | 44 | 3 | 18 | 5 | 1 | 26 | 4 | 44 | 5 | 0 | 53 | 1 | 152 | 153 |
| Total | 22 | 50 | 26 | 0 | 98 | 34 | 109 | 26 | 0 | 169 | 6 | 50 | 11 | 2 | 67 | 14 | 146 | 15 | 1 | 175 | 3 | 509 | 512 |
| 08:00 AM | 5 | 5 | 7 | 0 | 17 | 16 | 38 | 2 | 0 | 56 | 1 | 22 | 1 | 0 | 24 | 4 | 36 | 4 | 0 | 44 | 0 | 141 | 141 |
| 08:15 AM | 9 | 9 | 11 | 0 | 29 | 13 | 23 | 6 | 0 | 42 | 4 | 12 | 3 | 0 | 19 | 2 | 30 | 5 | 0 | 37 | 0 | 127 | 127 |
| 08:30 AM | 5 | 12 | 6 | 0 | 23 | 13 | 29 | 4 | 0 | 46 | 2 | 20 | 1 | 0 | 23 | 1 | 27 | 8 | 0 | 36 | 0 | 128 | 128 |
| 08:45 AM | 5 | 9 | 6 | 0 | 20 | 9 | 20 | 8 | 0 | 37 | 3 | 12 | 0 | 0 | 15 | 3 | 27 | 6 | 0 | 36 | 0 | 108 | 108 |
| Total | 24 | 35 | 30 | 0 | 89 | 51 | 110 | 20 | 0 | 181 | 10 | 66 | 5 | 0 | 81 | 10 | 120 | 23 | 0 | 153 | 0 | 504 | 504 |
| 09:00 AM | 5 | 16 | 8 | 0 | 29 | 27 | 33 | 1 | 0 | 61 | 3 | 14 | 5 | 0 | 22 | 3 | 32 | 6 | 0 | 41 | 0 | 153 | 153 |
| 09:15 AM | 10 | 8 | 14 | 0 | 32 | 13 | 19 | 3 | 0 | 35 | 2 | 4 | 6 | 0 | 12 | 2 | 43 | 8 | 0 | 53 | 0 | 132 | 132 |
| 09:30 AM | 8 | 11 | 10 | 0 | 29 | 13 | 27 | 7 | 0 | 47 | 2 | 14 | 3 | 0 | 19 | 3 | 36 | 9 | 0 | 48 | 0 | 143 | 143 |
| 09:45 AM | 4 | 11 | 9 | 0 | 24 | 15 | 42 | 13 | 0 | 70 | 1 | 13 | 5 | 0 | 19 | 3 | 30 | 10 | 0 | 43 | 0 | 156 | 156 |
| Total | 27 | 46 | 41 | 0 | 114 | 68 | 121 | 24 | 0 | 213 | 8 | 45 | 19 | 0 | 72 | 11 | 141 | 33 | 0 | 185 | 0 | 584 | 584 |
| 10:00 AM | 5 | 9 | 7 | 0 | 21 | 16 | 39 | 7 | 0 | 62 | 2 | 13 | 3 | 0 | 18 | 1 | 29 | 10 | 0 | 40 | 0 | 141 | 141 |
| 10:15 AM | 8 | 8 | 4 | 1 | 20 | 8 | 27 | 7 | 0 | 42 | 6 | 8 | 3 | 0 | 17 | 2 | 33 | 3 | 0 | 38 | 1 | 117 | 118 |
| 10:30 AM | 6 | 11 | 24 | 0 | 41 | 10 | 39 | 4 | 0 | 53 | 3 | 8 | 2 | 0 | 13 | 2 | 28 | 12 | 0 | 42 | 0 | 149 | 149 |
| 10:45 AM | 6 | 9 | 7 | 0 | 22 | 12 | 53 | 2 | 0 | 67 | 4 | 18 | 2 | 0 | 24 | 3 | 43 | 3 | 0 | 49 | 0 | 162 | 162 |
| Total | 25 | 37 | 42 | 1 | 104 | 46 | 158 | 20 | 0 | 224 | 15 | 47 | 10 | 0 | 72 | 8 | 133 | 28 | 0 | 169 | 1 | 569 | 570 |
| 11:00 AM | 6 | 4 | 7 | 0 | 17 | 12 | 41 | 4 | 0 | 57 | 4 | 8 | 4 | 0 | 16 | 2 | 34 | 10 | 0 | 46 | 0 | 136 | 136 |
| 11:15 AM | 11 | 9 | 10 | 0 | 30 | 11 | 34 | 2 | 0 | 47 | 3 | 9 | 1 | 0 | 13 | 3 | 26 | 11 | 0 | 40 | 0 | 130 | 130 |
| 11:30 AM | 8 | 14 | 6 | 0 | 28 | 10 | 50 | 8 | 0 | 68 | 3 | 15 | 1 | 1 | 19 | 4 | 41 | 9 | 0 | 54 | 1 | 169 | 170 |
| 11:45 AM | 8 | 7 | 9 | 1 | 24 | 12 | 23 | 7 | 0 | 42 | 4 | 14 | 2 | 1 | 20 | 4 | 20 | 6 | 0 | 30 | 2 | 116 | 118 |
| Total | 33 | 34 | 32 | 1 | 99 | 45 | 148 | 21 | 0 | 214 | 14 | 46 | 8 | 2 | 68 | 13 | 121 | 36 | 0 | 170 | 3 | 551 | 554 |
| 12:00 PM | 14 | 14 | 14 | 0 | 42 | 16 | 48 | 7 | 0 | 71 | 5 | 22 | 4 | 0 | 31 | 6 | 36 | 6 | 0 | 48 | 0 | 192 | 192 |
| 12:15 PM | 5 | 17 | 5 | 2 | 27 | 18 | 42 | 11 | 0 | 71 | 9 | 13 | 5 | 1 | 27 | 3 | 38 | 6 | 1 | 47 | 4 | 172 | 176 |
| 12:30 PM | 13 | 16 | 5 | 0 | 34 | 10 | 37 | 12 | 0 | 59 | 3 | 17 | 8 | 0 | 28 | 2 | 48 | 15 | 0 | 65 | 0 | 186 | 186 |
| 12:45 PM | 12 | 19 | 12 | 0 | 43 | 22 | 48 | 2 | 0 | 72 | 1 | 18 | 4 | 0 | 23 | 6 | 44 | 17 | 0 | 67 | 0 | 205 | 205 |
| Total | 44 | 66 | 36 | 2 | 146 | 66 | 175 | 32 | 0 | 273 | 18 | 70 | 21 | 1 | 109 | 17 | 166 | 44 | 1 | 227 | 4 | 755 | 759 |
| 01:00 PM | 15 | 12 | 7 | 0 | 34 | 11 | 46 | 5 | 0 | 62 | 1 | 12 | 7 | 0 | 20 | 8 | 43 | 17 | 0 | 68 | 0 | 184 | 184 |
| 01:15 PM | 14 | 14 | 7 | 0 | 35 | 16 | 32 | 7 | 0 | 55 | 3 | 9 | 1 | 0 | 13 | 6 | 41 | 11 | 0 | 58 | 0 | 161 | 161 |
| 01:30 PM | 3 | 15 | 8 | 0 | 26 | 8 | 42 | 10 | 0 | 60 | 5 | 18 | 5 | 0 | 28 | 5 | 38 | 16 | 0 | 59 | 0 | 173 | 173 |
| 01:45 PM | 7 | 13 | 9 | 0 | 29 | 15 | 56 | 7 | 0 | 78 | 1 | 10 | 4 | 0 | 15 | 4 | 46 | 18 | 0 | 68 | 0 | 190 | 190 |
| Total | 39 | 54 | 31 | 0 | 124 | 50 | 176 | 29 | 0 | 255 | 10 | 49 | 17 | 0 | 76 | 23 | 168 | 62 | 0 | 253 | 0 | 708 | 708 |
| 02:00 PM | 6 | 10 | 6 | 0 | 22 | 14 | 38 | 5 | 0 | 57 | 2 | 19 | 1 | 1 | 22 | 8 | 36 | 7 | 0 | 51 | 1 | 152 | 153 |
| 02:15 PM | 11 | 11 | 9 | 0 | 31 | 11 | 44 | 7 | 0 | 62 | 3 | 9 | 4 | 0 | 16 | 3 | 45 | 12 | 0 | 60 | 0 | 169 | 169 |
| 02:30 PM | 7 | 8 | 8 | 0 | 23 | 22 | 50 | 7 | 0 | 79 | 4 | 12 | 2 | 0 | 18 | 5 | 59 | 9 | 0 | 73 | 0 | 193 | 193 |
| 02:45 PM | 7 | 14 | 10 | 0 | 31 | 25 | 57 | 6 | 0 | 88 | 1 | 13 | 3 | 0 | 17 | 4 | 46 | 4 | 0 | 54 | 0 | 190 | 190 |
| Total | 31 | 43 | 33 | 0 | 107 | 72 | 189 | 25 | 0 | 286 | 10 | 53 | 10 | 1 | 73 | 20 | 186 | 32 | 0 | 238 | 1 | 704 | 705 |

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File Name : 1706132
Site Code : 17-06132
Start Date : 6/1/2017
Page No : 2

Groups Printed- PV - Pedestrians

| | 17th Street Southbound | | | | | 1st Avenue SW Westbound | | | | | 17th Street Northbound | | | | | 1st Avenue SW Eastbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Exclu. Total | Inclu. Total | Int. Total |
| 03:00 PM | 8 | 11 | 15 | 2 | 34 | 16 | 44 | 9 | 0 | 69 | 6 | 14 | 1 | 0 | 21 | 4 | 48 | 6 | 0 | 58 | 2 | 182 | 184 |
| 03:15 PM | 6 | 10 | 8 | 0 | 24 | 22 | 69 | 6 | 0 | 97 | 5 | 13 | 8 | 0 | 26 | 3 | 45 | 11 | 0 | 59 | 0 | 206 | 206 |
| 03:30 PM | 10 | 11 | 14 | 0 | 35 | 13 | 64 | 12 | 0 | 89 | 5 | 12 | 3 | 0 | 20 | 7 | 69 | 8 | 0 | 84 | 0 | 228 | 228 |
| 03:45 PM | 9 | 21 | 8 | 0 | 38 | 16 | 72 | 7 | 0 | 95 | 2 | 23 | 6 | 0 | 31 | 9 | 43 | 15 | 0 | 67 | 0 | 231 | 231 |
| Total | 33 | 53 | 45 | 2 | 131 | 67 | 249 | 34 | 0 | 350 | 18 | 62 | 18 | 0 | 98 | 23 | 205 | 40 | 0 | 268 | 2 | 847 | 849 |
| 04:00 PM | 10 | 21 | 15 | 0 | 46 | 23 | 63 | 12 | 0 | 98 | 5 | 14 | 1 | 0 | 20 | 4 | 43 | 9 | 0 | 56 | 0 | 220 | 220 |
| 04:15 PM | 4 | 10 | 11 | 2 | 25 | 15 | 60 | 7 | 0 | 82 | 3 | 12 | 5 | 0 | 20 | 8 | 51 | 14 | 1 | 73 | 3 | 200 | 203 |
| 04:30 PM | 12 | 28 | 19 | 1 | 59 | 25 | 75 | 8 | 0 | 108 | 8 | 19 | 8 | 2 | 35 | 6 | 69 | 10 | 0 | 85 | 3 | 287 | 290 |
| 04:45 PM | 7 | 26 | 8 | 2 | 41 | 14 | 79 | 7 | 0 | 100 | 2 | 21 | 2 | 0 | 25 | 1 | 37 | 8 | 0 | 46 | 2 | 212 | 214 |
| Total | 33 | 85 | 53 | 5 | 171 | 77 | 277 | 34 | 0 | 388 | 18 | 66 | 16 | 2 | 100 | 19 | 200 | 41 | 1 | 260 | 8 | 919 | 927 |
| 05:00 PM | 8 | 22 | 6 | 0 | 36 | 15 | 95 | 12 | 0 | 122 | 2 | 14 | 5 | 1 | 21 | 7 | 56 | 10 | 0 | 73 | 1 | 252 | 253 |
| 05:15 PM | 10 | 22 | 11 | 0 | 43 | 11 | 59 | 8 | 0 | 78 | 2 | 14 | 3 | 0 | 19 | 2 | 68 | 9 | 0 | 79 | 0 | 219 | 219 |
| 05:30 PM | 11 | 23 | 12 | 2 | 46 | 16 | 58 | 5 | 1 | 79 | 4 | 18 | 5 | 1 | 27 | 2 | 30 | 10 | 0 | 42 | 4 | 194 | 198 |
| 05:45 PM | 8 | 21 | 10 | 0 | 39 | 17 | 45 | 10 | 0 | 72 | 2 | 17 | 5 | 1 | 24 | 4 | 37 | 14 | 0 | 55 | 1 | 190 | 191 |
| Total | 37 | 88 | 39 | 2 | 164 | 59 | 257 | 35 | 1 | 351 | 10 | 63 | 18 | 3 | 91 | 15 | 191 | 43 | 0 | 249 | 6 | 855 | 861 |
| 06:00 PM | 6 | 18 | 11 | 0 | 35 | 12 | 42 | 7 | 0 | 61 | 4 | 13 | 1 | 0 | 18 | 5 | 31 | 5 | 0 | 41 | 0 | 155 | 155 |
| 06:15 PM | 5 | 3 | 7 | 1 | 15 | 8 | 49 | 3 | 0 | 60 | 2 | 10 | 3 | 2 | 15 | 4 | 24 | 4 | 0 | 32 | 3 | 122 | 125 |
| 06:30 PM | 5 | 13 | 6 | 0 | 24 | 8 | 41 | 6 | 0 | 55 | 1 | 7 | 8 | 0 | 16 | 4 | 27 | 4 | 0 | 35 | 0 | 130 | 130 |
| 06:45 PM | 11 | 5 | 1 | 0 | 17 | 11 | 31 | 6 | 0 | 48 | 1 | 12 | 4 | 0 | 17 | 3 | 30 | 11 | 0 | 44 | 0 | 126 | 126 |
| Total | 27 | 39 | 25 | 1 | 91 | 39 | 163 | 22 | 0 | 224 | 8 | 42 | 16 | 2 | 66 | 16 | 112 | 24 | 0 | 152 | 3 | 533 | 536 |
| Grand Total | 389 | 671 | 460 | 16 | 1520 | 699 | 2215 | 340 | 2 | 3254 | 150 | 681 | 174 | 15 | 1005 | 193 | 1995 | 439 | 3 | 2627 | 36 | 8406 | 8442 |
| Apprch % | 25.6 | 44.1 | 30.3 | | | 21.5 | 68.1 | 10.4 | | | 14.9 | 67.8 | 17.3 | | | 7.3 | 75.9 | 16.7 | | | | | |
| Total % | 4.6 | 8 | 5.5 | | 18.1 | 8.3 | 26.4 | 4 | | 38.7 | 1.8 | 8.1 | 2.1 | | 12 | 2.3 | 23.7 | 5.2 | | 31.3 | 0.4 | 99.6 | |
| PV | 389 | 671 | 460 | | 1520 | 699 | 2215 | 340 | | 3254 | 150 | 681 | 174 | | 1005 | 193 | 1995 | 439 | | 2627 | 0 | 0 | 8406 |
| % PV | 100 | 100 | 100 | 0 | 99 | 100 | 100 | 100 | 0 | 99.9 | 100 | 100 | 100 | 0 | 98.5 | 100 | 100 | 100 | 0 | 99.9 | 0 | 0 | 99.6 |
| Pedestrians | 0 | 0 | 0 | | 16 | 0 | 0 | 0 | | 2 | 0 | 0 | 0 | | 15 | 0 | 0 | 0 | | 3 | 0 | 0 | 36 |
| % Pedestrians | 0 | 0 | 0 | 100 | 1 | 0 | 0 | 0 | 100 | 0.1 | 0 | 0 | 0 | 100 | 1.5 | 0 | 0 | 0 | 100 | 0.1 | 0 | 0 | 0.4 |

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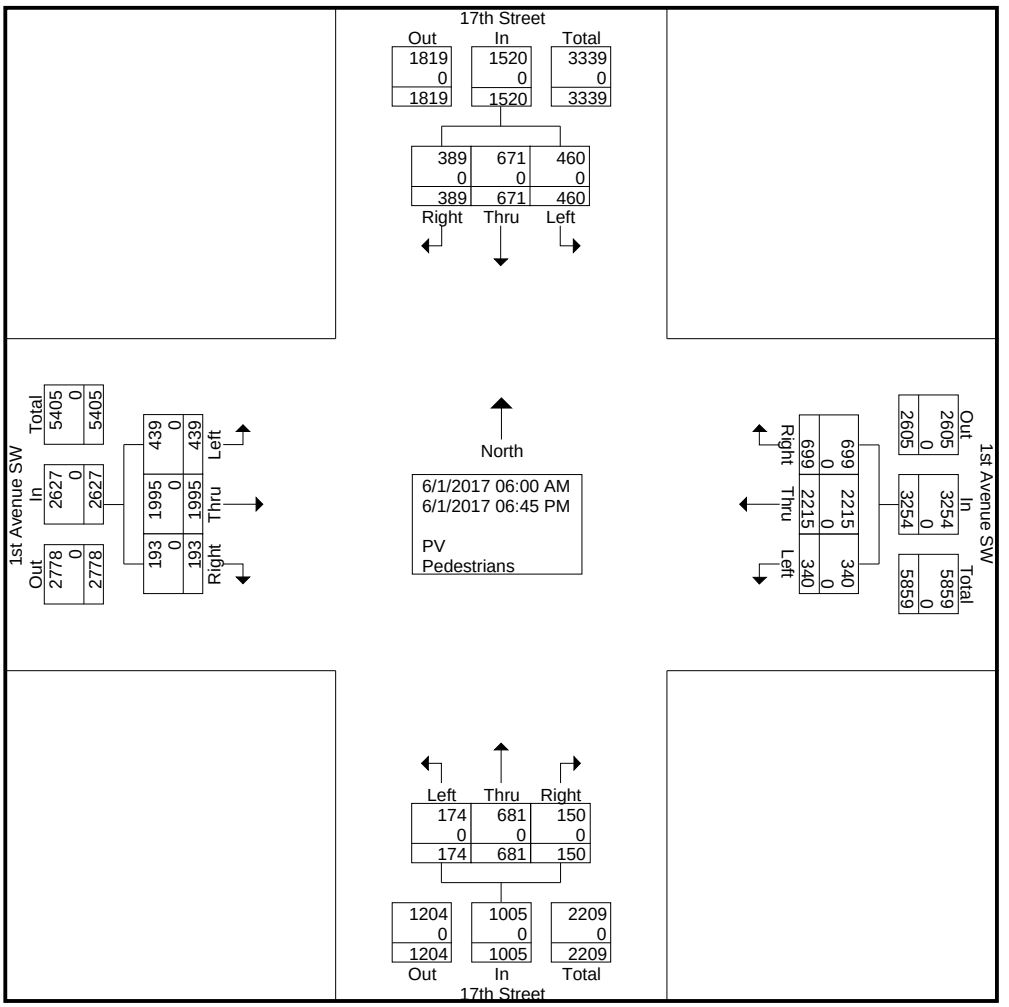
Start Date : 6/1/2017
Page No : 3



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File Name : 1706132
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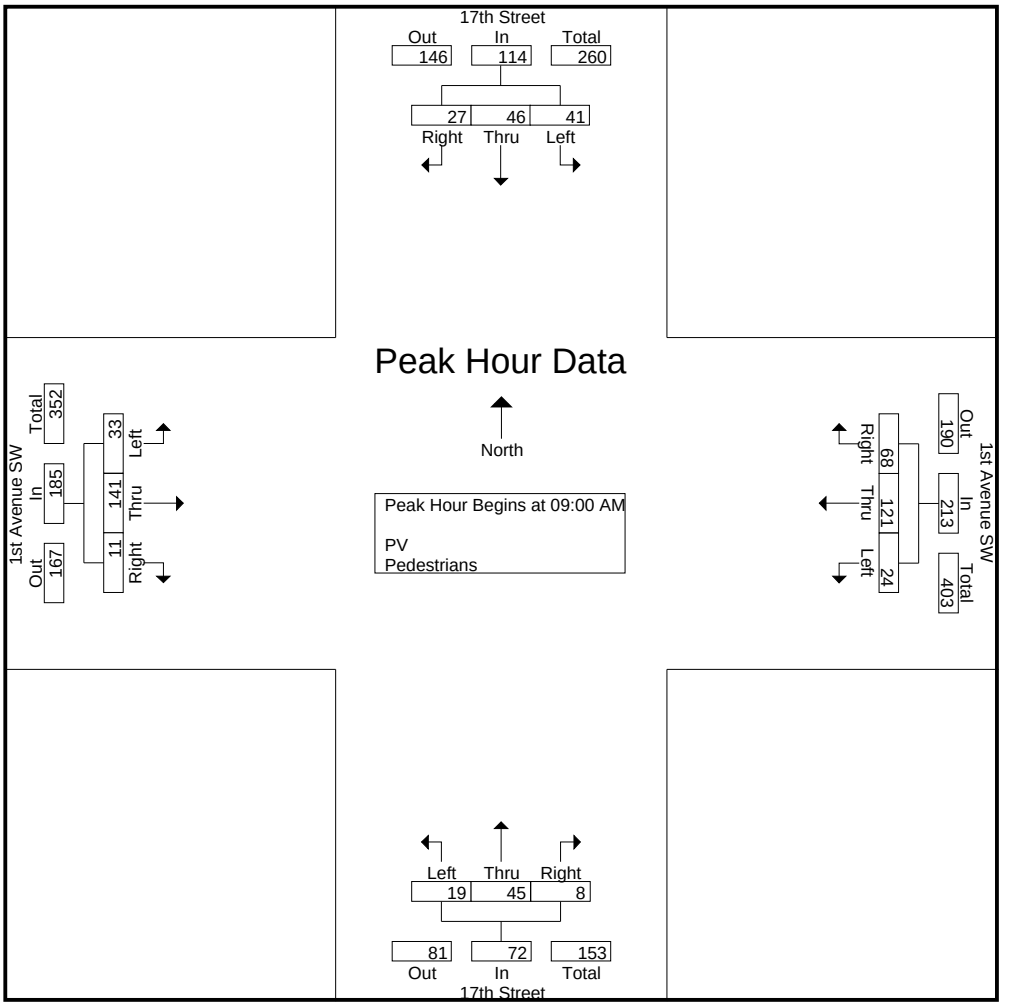
Start Date : 6/1/2017
Page No : 4

| | 17th Street Southbound | | | | 1st Avenue SW Westbound | | | | 17th Street Northbound | | | | 1st Avenue SW Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 06:00 AM to 09:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 09:00 AM | | | | | | | | | | | | | | | | | |
| 09:00 AM | 5 | **16** | 8 | 29 | **27** | 33 | 1 | 61 | **3** | **14** | 5 | **22** | **3** | 32 | 6 | 41 | 153 |
| 09:15 AM | **10** | 8 | **14** | **32** | 13 | 19 | 3 | 35 | 2 | 4 | **6** | 12 | 2 | **43** | 8 | **53** | 132 |
| 09:30 AM | 8 | 11 | 10 | 29 | 13 | 27 | 7 | 47 | 2 | 14 | 3 | 19 | 3 | 36 | 9 | 48 | 143 |
| 09:45 AM | 4 | 11 | 9 | 24 | 15 | **42** | **13** | **70** | 1 | 13 | 5 | 19 | 3 | 30 | **10** | 43 | **156** |
| Total Volume | 27 | 46 | 41 | 114 | 68 | 121 | 24 | 213 | 8 | 45 | 19 | 72 | 11 | 141 | 33 | 185 | 584 |
| % App. Total | 23.7 | 40.4 | 36 | | 31.9 | 56.8 | 11.3 | | 11.1 | 62.5 | 26.4 | | 5.9 | 76.2 | 17.8 | | |
| PHF | .675 | .719 | .732 | .891 | .630 | .720 | .462 | .761 | .667 | .804 | .792 | .818 | .917 | .820 | .825 | .873 | .936 |



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File Name : 1706132
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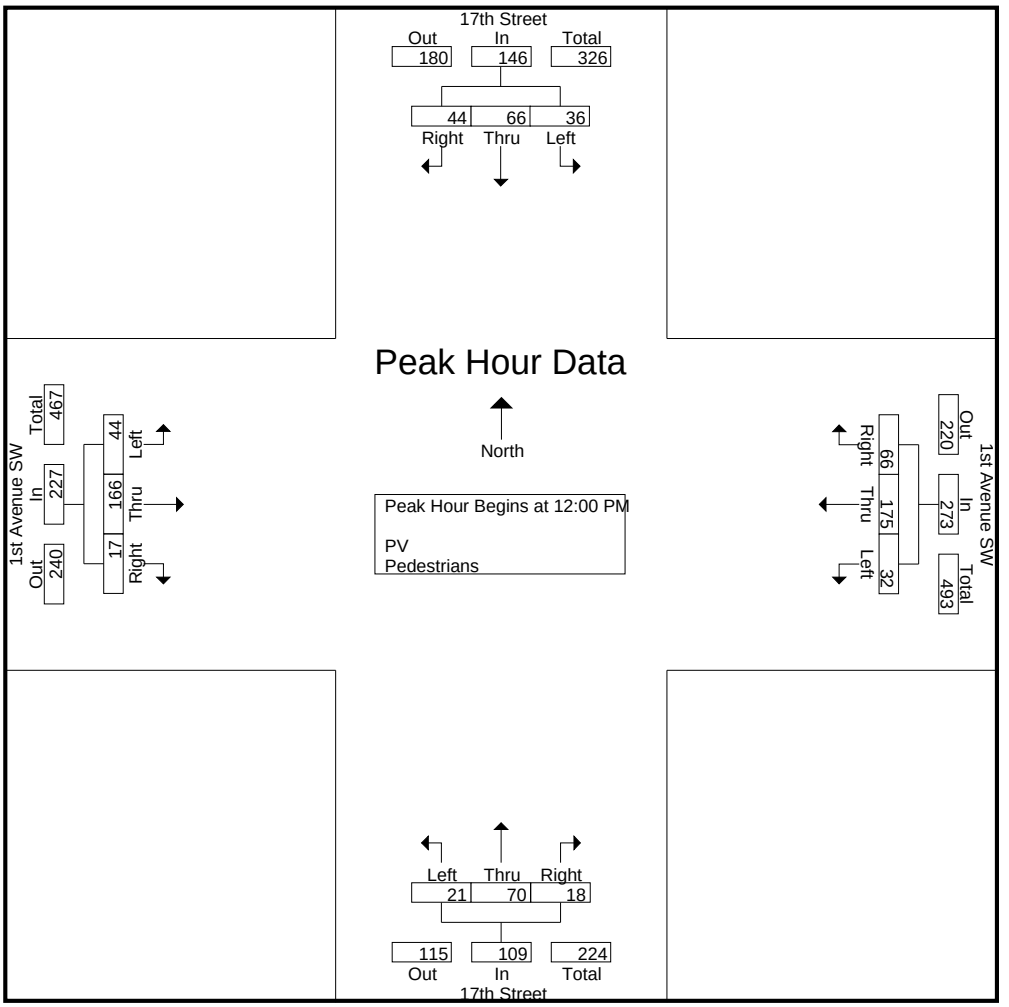
Start Date : 6/1/2017
Page No : 5

| | 17th Street Southbound | | | | 1st Avenue SW Westbound | | | | 17th Street Northbound | | | | 1st Avenue SW Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:00 PM | | | | | | | | | | | | | | | | | |
| 12:00 PM | **14** | 14 | **14** | 42 | 16 | **48** | 7 | 71 | 5 | **22** | 4 | **31** | **6** | 36 | 6 | 48 | 192 |
| 12:15 PM | 5 | 17 | 5 | 27 | 18 | 42 | 11 | 71 | **9** | 13 | 5 | 27 | 3 | 38 | 6 | 47 | 172 |
| 12:30 PM | 13 | 16 | 5 | 34 | 10 | 37 | **12** | 59 | 3 | 17 | **8** | 28 | 2 | **48** | 15 | 65 | 186 |
| 12:45 PM | 12 | **19** | 12 | **43** | **22** | 48 | 2 | **72** | 1 | 18 | 4 | 23 | 6 | 44 | **17** | **67** | **205** |
| Total Volume | 44 | 66 | 36 | 146 | 66 | 175 | 32 | 273 | 18 | 70 | 21 | 109 | 17 | 166 | 44 | 227 | 755 |
| % App. Total | 30.1 | 45.2 | 24.7 | | 24.2 | 64.1 | 11.7 | | 16.5 | 64.2 | 19.3 | | 7.5 | 73.1 | 19.4 | | |
| PHF | .786 | .868 | .643 | .849 | .750 | .911 | .667 | .948 | .500 | .795 | .656 | .879 | .708 | .865 | .647 | .847 | .921 |



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File Name : 1706132
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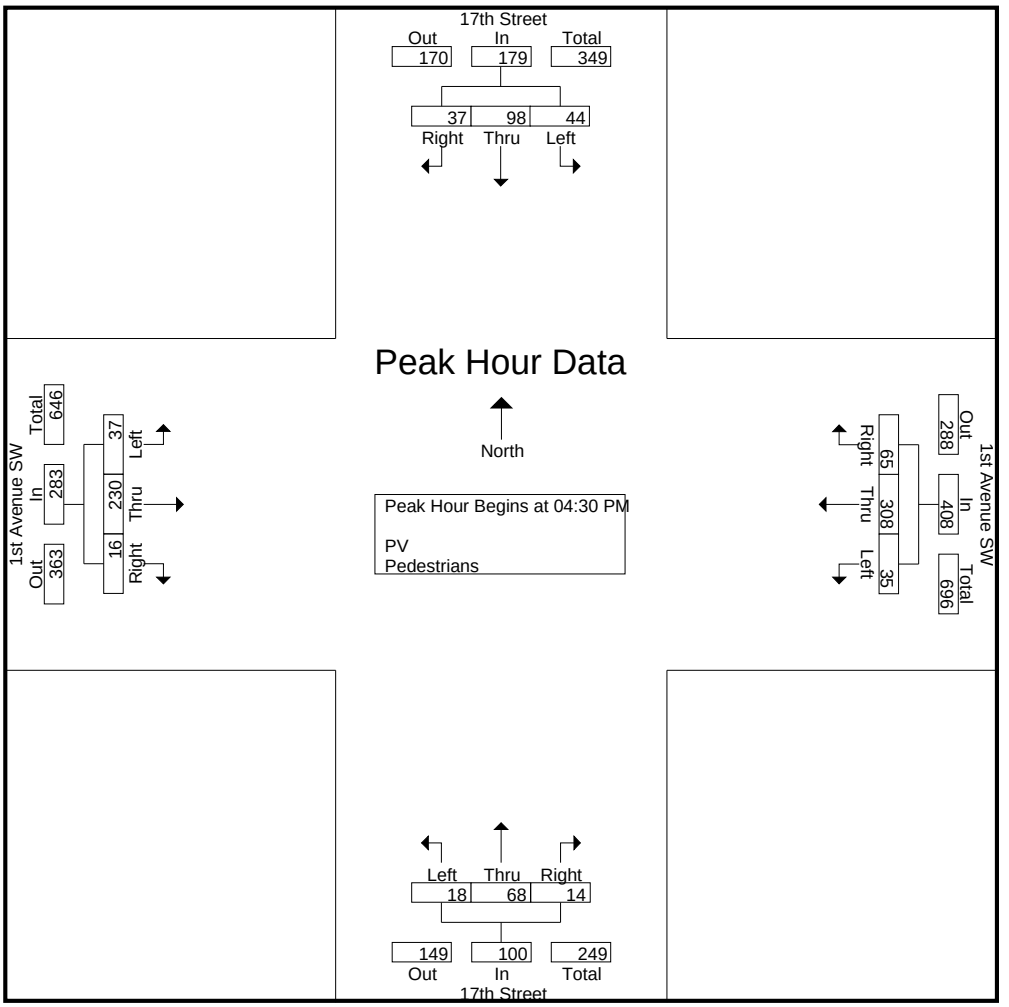
Start Date : 6/1/2017
Page No : 6

| | 17th Street Southbound | | | | 1st Avenue SW Westbound | | | | 17th Street Northbound | | | | 1st Avenue SW Eastbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Right | Thru | Left | App. Total | Int. Total |
| Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | |
| 04:30 PM | **12** | **28** | **19** | **59** | **25** | 75 | 8 | 108 | **8** | 19 | **8** | **35** | 6 | **69** | **10** | **85** | **287** |
| 04:45 PM | 7 | 26 | 8 | 41 | 14 | 79 | 7 | 100 | 2 | **21** | 2 | 25 | 1 | 37 | 8 | 46 | 212 |
| 05:00 PM | 8 | 22 | 6 | 36 | 15 | **95** | **12** | **122** | 2 | 14 | 5 | 21 | **7** | 56 | 10 | 73 | 252 |
| 05:15 PM | 10 | 22 | 11 | 43 | 11 | 59 | 8 | 78 | 2 | 14 | 3 | 19 | 2 | 68 | 9 | 79 | 219 |
| Total Volume | 37 | 98 | 44 | 179 | 65 | 308 | 35 | 408 | 14 | 68 | 18 | 100 | 16 | 230 | 37 | 283 | 970 |
| % App. Total | 20.7 | 54.7 | 24.6 | | 15.9 | 75.5 | 8.6 | | 14 | 68 | 18 | | 5.7 | 81.3 | 13.1 | | |
| PHF | .771 | .875 | .579 | .758 | .650 | .811 | .729 | .836 | .438 | .810 | .563 | .714 | .571 | .833 | .925 | .832 | .845 |



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File Name : 1706132
Site Code : 17-06132
Start Date : 6/1/2017
Page No : 1

Groups Printed- Pedestrians

| | 17th Street Southbound | | | | | 1st Avenue SW Westbound | | | | | 17th Street Northbound | | | | | 1st Avenue SW Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 06:00 AM | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 06:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 06:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| 06:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 5 |
| 07:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 1 | 1 | 3 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 09:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:15 AM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 10:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 11:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 11:45 AM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| 12:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:15 PM | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 4 |
| 12:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 4 |
| 01:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 01:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 02:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 02:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |

**Mattern & Craig, Inc.**
12 Broad St.
Asheville, NC, 28801
*Phone: (828) 254-2201*
*Fax: (828) 254-4562*

File Name : 1706132
Site Code : 17-06132
Start Date : 6/1/2017
Page No : 2

Groups Printed- Pedestrians

| | 17th Street Southbound | | | | | 1st Avenue SW Westbound | | | | | 17th Street Northbound | | | | | 1st Avenue SW Eastbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Right | Thru | Left | Peds | App. Total | Int. Total |
| 03:00 PM | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 03:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 |
| 04:30 PM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| 04:45 PM | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Total | 0 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 1 | 1 | 8 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 6 |
| 06:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 06:15 PM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| 06:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 06:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 3 |
| Grand Total | 0 | 0 | 0 | 16 | 16 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 15 | 15 | 0 | 0 | 0 | 3 | 3 | 36 |
| Apprch % | 0 | 0 | 0 | 100 | | 0 | 0 | 0 | 100 | | 0 | 0 | 0 | 100 | | 0 | 0 | 0 | 100 | | |
| Total % | 0 | 0 | 0 | 44.4 | 44.4 | 0 | 0 | 0 | 5.6 | 5.6 | 0 | 0 | 0 | 41.7 | 41.7 | 0 | 0 | 0 | 8.3 | 8.3 | |

**Mattern & Craig, Inc.**
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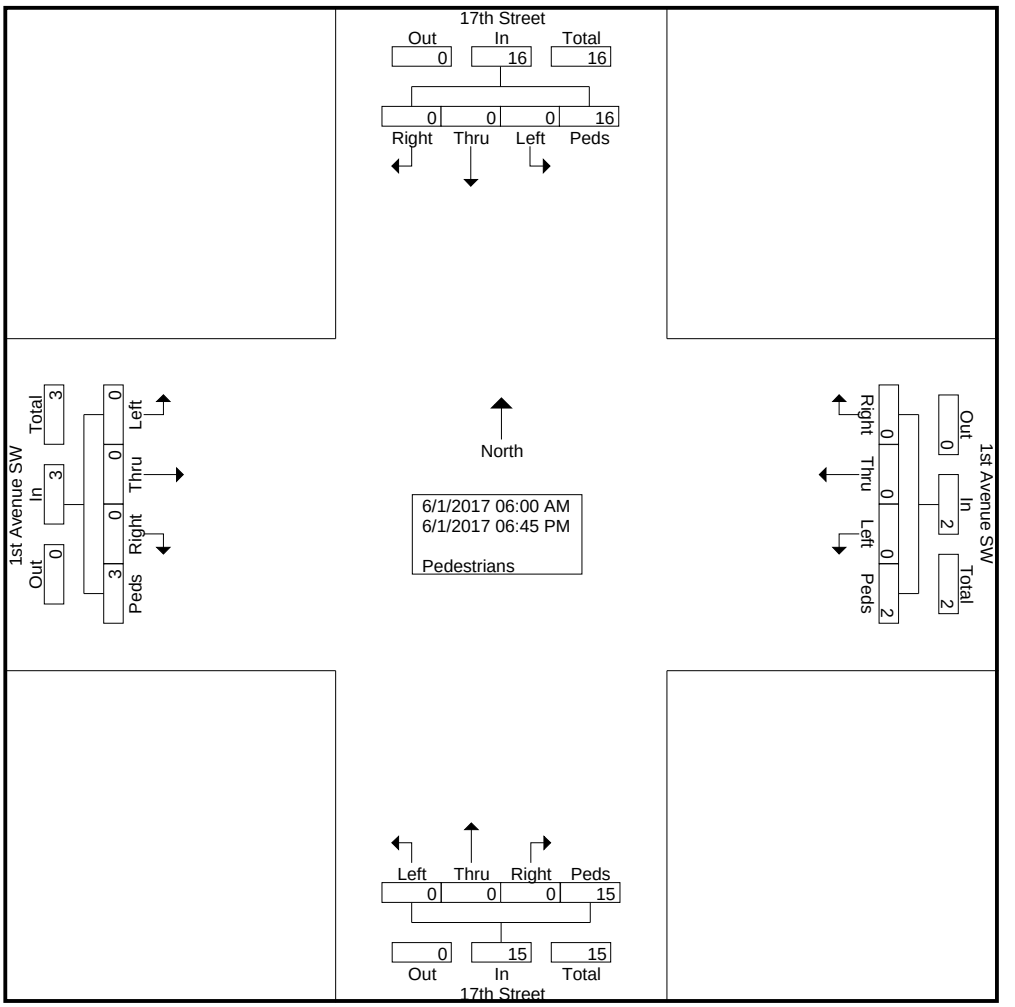
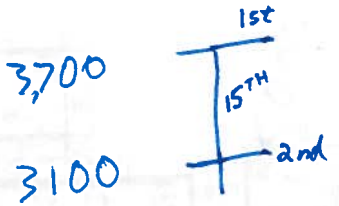
File Name : 1706132
Site Code : 17-06132
Start Date : 6/1/2017
Page No : 3

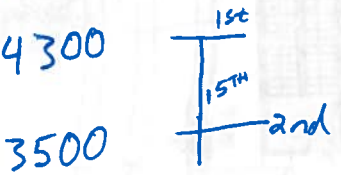


BUILD 1

2016




2040




$R = \left(\frac{V_f}{V_e}\right)^{1/Y} - 1 = \left(\frac{4300}{3700}\right)^{1/24} - 1 = .00628$

$= .628\%$

$= \left(\frac{3500}{3100}\right)^{1/24} - 1 = .00507$

$= .507\%$

USE .6% FOR 17TH

GF $\frac{4300}{3700} = 1.162$

$\frac{3500}{3100} = 1.129$

USE 1.146

# AECOM

701 Corporate Center Drive
Suite 475
Raleigh, NC 27607
Traffic Engineering


File Name : 1706132
Site Code : 17-06132
Start Date : 6/1/2017
Page No : 1

Groups Printed- PV

| | 1st Avenue SW Eastbound | | | | 1st Avenue SW Westbound | | | | 17th Street Northbound | | | | 17th Street Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Int. Total |
| 06:00 | 6 | 26 | 0 | 0 | 1 | 8 | 7 | 0 | 2 | 3 | 0 | 0 | 5 | 10 | 2 | 0 | 70 |
| 06:15 | 2 | 20 | 1 | 0 | 2 | 13 | 2 | 0 | 2 | 7 | 1 | 0 | 2 | 9 | 3 | 0 | 64 |
| 06:30 | 8 | 49 | 2 | 0 | 9 | 24 | 8 | 0 | 0 | 7 | 1 | 0 | 9 | 10 | 6 | 0 | 133 |
| 06:45 | 5 | 26 | 1 | 0 | 8 | 51 | 11 | 0 | 1 | 8 | 3 | 0 | 15 | 17 | 5 | 0 | 151 |
| Total | 21 | 121 | 4 | 0 | 20 | 96 | 28 | 0 | 5 | 25 | 5 | 0 | 31 | 46 | 16 | 0 | 418 |
| 07:00 | 2 | 30 | 0 | 0 | 7 | 22 | 11 | 0 | 1 | 11 | 1 | 0 | 5 | 13 | 7 | 0 | 110 |
| 07:15 | 0 | 33 | 5 | 0 | 8 | 31 | 9 | 0 | 0 | 15 | 1 | 0 | 6 | 11 | 5 | 0 | 124 |
| 07:30 | 9 | 54 | 7 | 0 | 8 | 34 | 13 | 0 | 6 | 10 | 1 | 0 | 9 | 20 | 5 | 0 | 176 |
| 07:45 | 6 | 51 | 5 | 0 | 7 | 38 | 6 | 0 | 6 | 21 | 3 | 0 | 10 | 14 | 9 | 0 | 176 |
| Total | 17 | 168 | 17 | 0 | 30 | 125 | 39 | 0 | 13 | 57 | 6 | 0 | 30 | 58 | 26 | 0 | 586 |
| 08:00 | 5 | 41 | 5 | 0 | 2 | 44 | 18 | 0 | 1 | 25 | 1 | 0 | 8 | 6 | 6 | 0 | 162 |
| 08:15 | 6 | 34 | 2 | 0 | 7 | 26 | 15 | 0 | 3 | 14 | 5 | 0 | 13 | 10 | 10 | 0 | 145 |
| 08:30 | 9 | 31 | 1 | 0 | 5 | 33 | 15 | 0 | 1 | 23 | 2 | 0 | 7 | 14 | 6 | 0 | 147 |
| 08:45 | 7 | 31 | 3 | 0 | 9 | 23 | 10 | 0 | 0 | 14 | 3 | 0 | 7 | 10 | 6 | 0 | 123 |
| Total | 27 | 137 | 11 | 0 | 23 | 126 | 58 | 0 | 5 | 76 | 11 | 0 | 35 | 40 | 28 | 0 | 577 |
| 09:00 | 7 | 37 | 3 | 0 | 1 | 38 | 31 | 0 | 6 | 16 | 3 | 0 | 9 | 18 | 6 | 0 | 175 |
| 09:15 | 9 | 49 | 2 | 0 | 3 | 22 | 15 | 0 | 7 | 5 | 2 | 0 | 16 | 9 | 11 | 0 | 150 |
| 09:30 | 10 | 41 | 3 | 0 | 8 | 31 | 15 | 0 | 3 | 16 | 2 | 0 | 11 | 13 | 9 | 0 | 162 |
| 09:45 | 11 | 34 | 3 | 0 | 15 | 48 | 17 | 0 | 6 | 15 | 1 | 0 | 10 | 13 | 5 | 0 | 178 |
| Total | 37 | 161 | 11 | 0 | 27 | 139 | 78 | 0 | 22 | 52 | 8 | 0 | 46 | 53 | 31 | 0 | 665 |
| 10:00 | 11 | 33 | 1 | 0 | 8 | 45 | 18 | 0 | 3 | 15 | 2 | 0 | 8 | 10 | 6 | 0 | 160 |
| 10:15 | 3 | 38 | 2 | 0 | 8 | 31 | 9 | 0 | 3 | 9 | 7 | 0 | 5 | 9 | 9 | 0 | 133 |
| 10:30 | 14 | 32 | 2 | 0 | 5 | 45 | 11 | 0 | 2 | 9 | 3 | 0 | 28 | 13 | 7 | 0 | 171 |
| 10:45 | 3 | 49 | 3 | 0 | 2 | 61 | 14 | 0 | 2 | 21 | 5 | 0 | 8 | 10 | 7 | 0 | 185 |
| Total | 31 | 152 | 8 | 0 | 23 | 182 | 52 | 0 | 10 | 54 | 17 | 0 | 49 | 42 | 29 | 0 | 649 |
| 11:00 | 11 | 39 | 2 | 0 | 5 | 47 | 14 | 0 | 5 | 9 | 5 | 0 | 8 | 5 | 7 | 0 | 157 |
| 11:15 | 13 | 30 | 3 | 0 | 2 | 39 | 13 | 0 | 1 | 10 | 3 | 0 | 11 | 10 | 13 | 0 | 148 |
| 11:30 | 10 | 47 | 5 | 0 | 9 | 57 | 11 | 0 | 1 | 17 | 3 | 0 | 7 | 16 | 9 | 0 | 192 |
| 11:45 | 7 | 23 | 5 | 0 | 8 | 26 | 14 | 0 | 2 | 16 | 5 | 0 | 10 | 8 | 9 | 0 | 133 |
| Total | 41 | 139 | 15 | 0 | 24 | 169 | 52 | 0 | 9 | 52 | 16 | 0 | 36 | 39 | 38 | 0 | 630 |
| 12:00 | 7 | 41 | 7 | 0 | 8 | 55 | 18 | 0 | 5 | 25 | 6 | 0 | 16 | 16 | 16 | 0 | 220 |
| 12:15 | 7 | 44 | 3 | 0 | 13 | 48 | 21 | 0 | 6 | 15 | 10 | 0 | 6 | 20 | 6 | 0 | 199 |
| 12:30 | 17 | 55 | 2 | 0 | 14 | 43 | 11 | 0 | 9 | 20 | 3 | 0 | 6 | 18 | 15 | 0 | 213 |
| 12:45 | 20 | 51 | 7 | 0 | 2 | 55 | 25 | 0 | 5 | 21 | 1 | 0 | 14 | 22 | 14 | 0 | 237 |
| Total | 51 | 191 | 19 | 0 | 37 | 201 | 75 | 0 | 25 | 81 | 20 | 0 | 42 | 76 | 51 | 0 | 869 |
| 13:00 | 20 | 49 | 9 | 0 | 6 | 53 | 13 | 0 | 8 | 14 | 1 | 0 | 8 | 14 | 17 | 0 | 212 |
| 13:15 | 13 | 47 | 7 | 0 | 8 | 37 | 18 | 0 | 1 | 10 | 3 | 0 | 8 | 16 | 16 | 0 | 184 |
| 13:30 | 18 | 44 | 6 | 0 | 11 | 48 | 9 | 0 | 6 | 21 | 6 | 0 | 9 | 17 | 3 | 0 | 198 |
| 13:45 | 21 | 53 | 5 | 0 | 8 | 64 | 17 | 0 | 5 | 11 | 1 | 0 | 10 | 15 | 8 | 0 | 218 |
| Total | 72 | 193 | 27 | 0 | 33 | 202 | 57 | 0 | 20 | 56 | 11 | 0 | 35 | 62 | 44 | 0 | 812 |
| 14:00 | 8 | 41 | 9 | 0 | 6 | 44 | 16 | 0 | 1 | 22 | 2 | 0 | 7 | 11 | 7 | 0 | 174 |
| 14:15 | 14 | 52 | 3 | 0 | 8 | 51 | 13 | 0 | 5 | 10 | 3 | 0 | 10 | 13 | 13 | 0 | 195 |
| 14:30 | 10 | 68 | 6 | 0 | 8 | 57 | 25 | 0 | 2 | 14 | 5 | 0 | 9 | 9 | 8 | 0 | 221 |
| 14:45 | 5 | 53 | 5 | 0 | 7 | 66 | 29 | 0 | 3 | 15 | 1 | 0 | 11 | 16 | 8 | 0 | 219 |
| Total | 37 | 214 | 23 | 0 | 29 | 218 | 83 | 0 | 11 | 61 | 11 | 0 | 37 | 49 | 36 | 0 | 809 |
| 15:00 | 7 | 55 | 5 | 0 | 10 | 51 | 18 | 0 | 1 | 16 | 7 | 0 | 17 | 13 | 9 | 0 | 209 |
| 15:15 | 13 | 52 | 3 | 0 | 7 | 79 | 25 | 0 | 9 | 15 | 6 | 0 | 9 | 11 | 7 | 0 | 236 |
| 15:30 | 9 | 79 | 8 | 0 | 14 | 74 | 15 | 0 | 3 | 14 | 6 | 0 | 16 | 13 | 11 | 0 | 262 |
| 15:45 | 17 | 49 | 10 | 0 | 8 | 83 | 18 | 0 | 7 | 26 | 2 | 0 | 9 | 24 | 10 | 0 | 263 |
| Total | 46 | 235 | 26 | 0 | 39 | 287 | 76 | 0 | 20 | 71 | 21 | 0 | 51 | 61 | 37 | 0 | 970 |

# AECOM

701 Corporate Center Drive
Suite 475
Raleigh, NC 27607
Traffic Engineering


File Name : 1706132
Site Code : 17-06132
Start Date : 6/1/2017


Groups Printed- PV

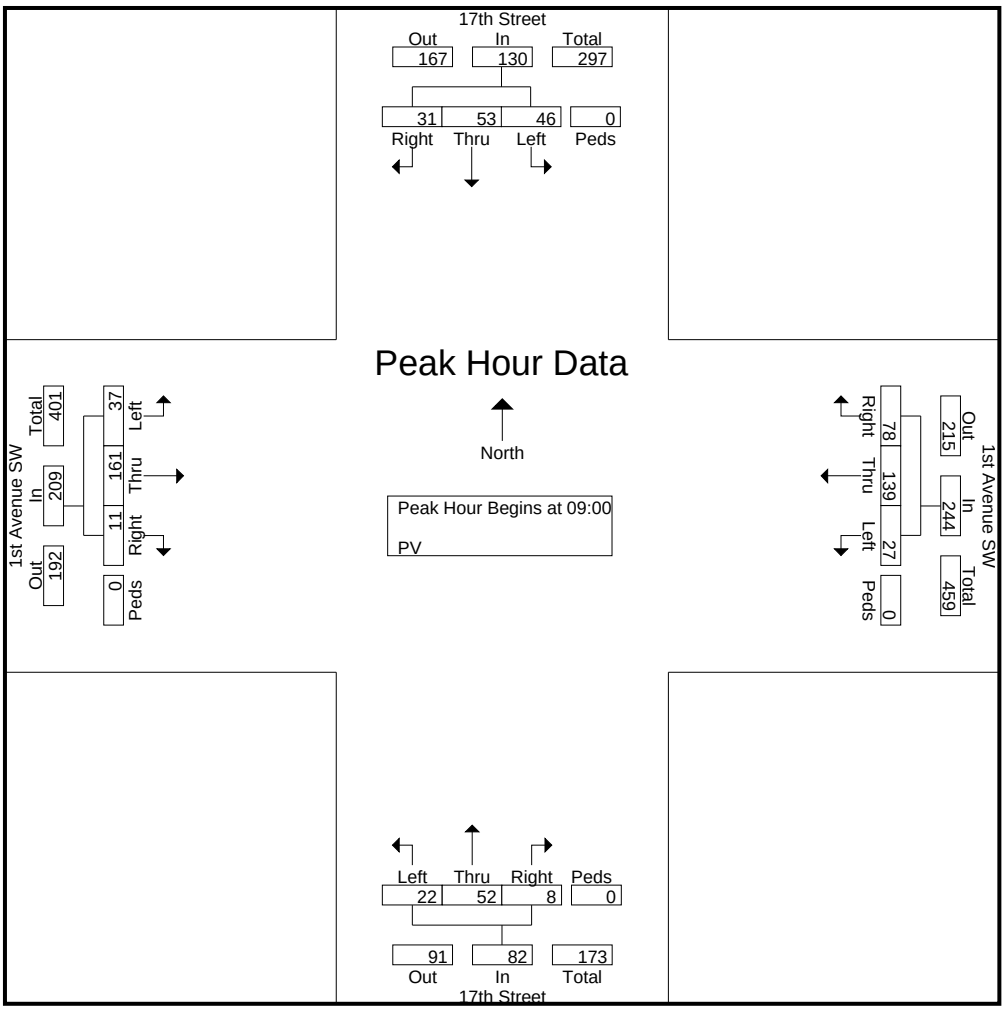
| | 1st Avenue SW Eastbound | | | | 1st Avenue SW Westbound | | | | 17th Street Northbound | | | | 17th Street Southbound | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Int. Total |
| 16:00 | 10 | 49 | 5 | 0 | 14 | 72 | 26 | 0 | 1 | 16 | 6 | 0 | 17 | 24 | 11 | 0 | 251 |
| 16:15 | 16 | 59 | 9 | 0 | 8 | 69 | 17 | 0 | 6 | 14 | 3 | 0 | 13 | 11 | 5 | 0 | 230 |
| 16:30 | 11 | 79 | 7 | 0 | 9 | 86 | 29 | 0 | 9 | 22 | 9 | 0 | 22 | 32 | 14 | 0 | 329 |
| 16:45 | 9 | 43 | 1 | 0 | 8 | 91 | 16 | 0 | 2 | 24 | 2 | 0 | 9 | 30 | 8 | 0 | 243 |
| Total | 46 | 230 | 22 | 0 | 39 | 318 | 88 | 0 | 18 | 76 | 20 | 0 | 61 | 97 | 38 | 0 | 1053 |
| | | | | | | | | | | | | | | | | | |
| 17:00 | 11 | 64 | 8 | 0 | 14 | 109 | 17 | 0 | 6 | 16 | 2 | 0 | 7 | 25 | 9 | 0 | 288 |
| 17:15 | 10 | 78 | 2 | 0 | 9 | 68 | 13 | 0 | 3 | 16 | 2 | 0 | 13 | 25 | 11 | 0 | 250 |
| 17:30 | 11 | 34 | 2 | 0 | 6 | 67 | 18 | 0 | 6 | 21 | 5 | 0 | 14 | 26 | 13 | 0 | 223 |
| 17:45 | 16 | 43 | 5 | 0 | 11 | 52 | 20 | 0 | 6 | 20 | 2 | 0 | 11 | 24 | 9 | 0 | 219 |
| Total | 48 | 219 | 17 | 0 | 40 | 296 | 68 | 0 | 21 | 73 | 11 | 0 | 45 | 100 | 42 | 0 | 980 |
| | | | | | | | | | | | | | | | | | |
| 18:00 | 6 | 36 | 6 | 0 | 8 | 48 | 14 | 0 | 1 | 15 | 5 | 0 | 13 | 21 | 7 | 0 | 180 |
| 18:15 | 5 | 28 | 5 | 0 | 3 | 56 | 9 | 0 | 3 | 11 | 2 | 0 | 8 | 3 | 6 | 0 | 139 |
| 18:30 | 5 | 31 | 5 | 0 | 7 | 47 | 9 | 0 | 9 | 8 | 1 | 0 | 7 | 15 | 6 | 0 | 150 |
| 18:45 | 13 | 34 | 3 | 0 | 7 | 36 | 13 | 0 | 5 | 14 | 1 | 0 | 1 | 6 | 13 | 0 | 146 |
| Total | 29 | 129 | 19 | 0 | 25 | 187 | 45 | 0 | 18 | 48 | 9 | 0 | 29 | 45 | 32 | 0 | 615 |
| | | | | | | | | | | | | | | | | | |
| Grand Total | 503 | 2289 | 219 | 0 | 389 | 2546 | 799 | 0 | 197 | 782 | 166 | 0 | 527 | 768 | 448 | 0 | 9633 |
| Apprch % | 16.7 | 76 | 7.3 | 0 | 10.4 | 68.2 | 21.4 | 0 | 17.2 | 68.3 | 14.5 | 0 | 30.2 | 44.1 | 25.7 | 0 | |
| Total % | 5.2 | 23.8 | 2.3 | 0 | 4 | 26.4 | 8.3 | 0 | 2 | 8.1 | 1.7 | 0 | 5.5 | 8 | 4.7 | 0 | |

# AECOM

701 Corporate Center Drive
Suite 475
Raleigh, NC 27607
Traffic Engineering


File Name : 1706132
Site Code : 17-06132
Start Date : 6/1/2017
Page No : 3

| | 1st Avenue SW Eastbound | | | | | 1st Avenue SW Westbound | | | | | 17th Street Northbound | | | | | 17th Street Southbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 06:00 to 09:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 09:00 | | | | | | | | | | | | | | | | | | | | | |
| 09:00 | 7 | 37 | **3** | | | | | **31** | | | | **16** | **3** | 0 | **25** | 9 | **18** | 6 | 0 | 33 | 175 |
| 09:15 | 9 | **49** | 2 | 0 | **60** | 3 | 22 | 15 | 0 | 40 | **7** | | | | | **16** | | **11** | | **36** | 150 |
| 09:30 | 10 | 41 | 3 | 0 | 54 | 8 | 31 | 15 | 0 | 54 | 3 | 16 | 2 | 0 | 21 | 11 | 13 | 9 | 0 | 33 | 162 |
| 09:45 | **11** | | | | | **15** | **48** | | | **80** | 6 | 15 | 1 | 0 | 22 | 10 | 13 | 5 | 0 | 28 | **178** |
| Total Volume | 37 | 161 | 11 | 0 | 209 | 27 | 139 | 78 | 0 | 244 | 22 | 52 | 8 | 0 | 82 | 46 | 53 | 31 | 0 | 130 | 665 |
| % App. Total | 17.7 | 77 | 5.3 | 0 | | 11.1 | 57 | 32 | 0 | | 26.8 | 63.4 | 9.8 | 0 | | 35.4 | 40.8 | 23.8 | 0 | | |
| PHF | .841 | .821 | .917 | .000 | .871 | .450 | .724 | .629 | .000 | .763 | .786 | .813 | .667 | .000 | .820 | .719 | .736 | .705 | .000 | .903 | .934 |

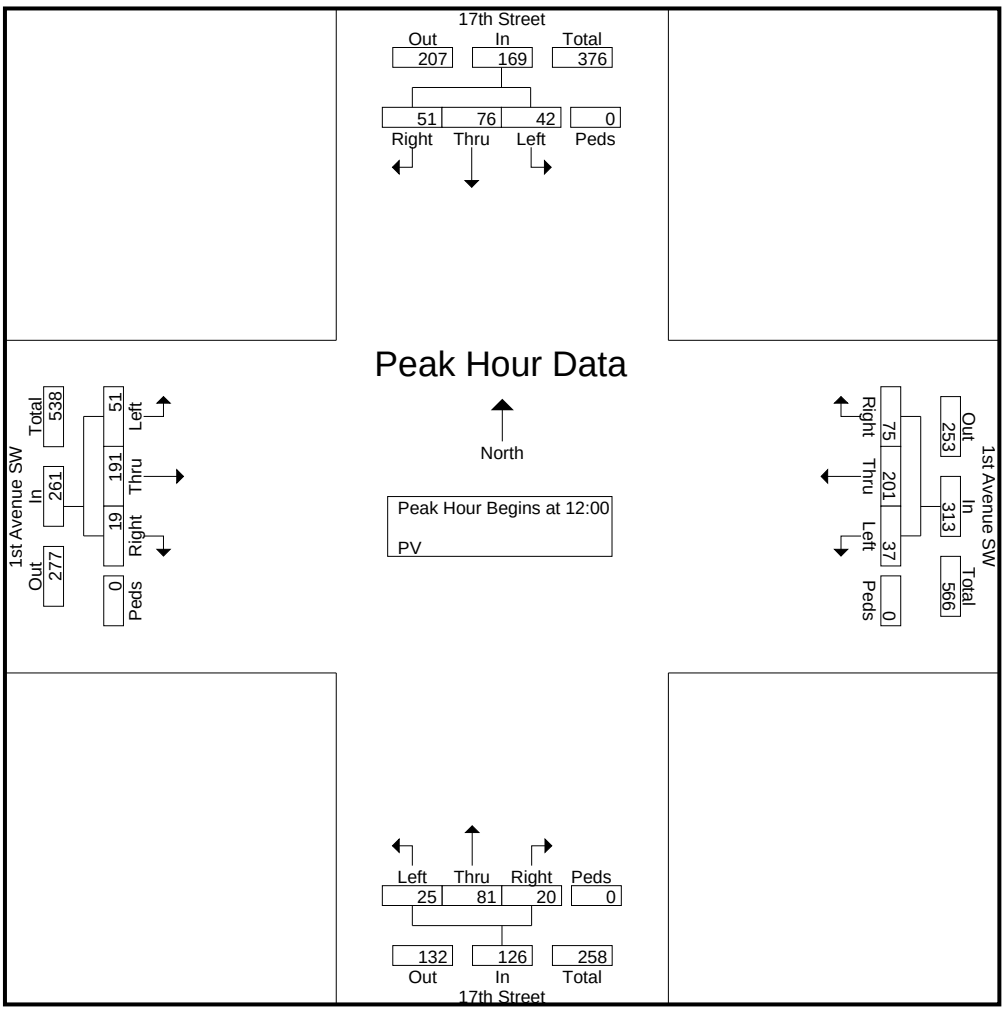


# AECOM

701 Corporate Center Drive
Suite 475
Raleigh, NC 27607
Traffic Engineering


File Name : 1706132
Site Code : 17-06132
Start Date : 6/1/2017
Page No : 4

| | 1st Avenue SW Eastbound | | | | | 1st Avenue SW Westbound | | | | | 17th Street Northbound | | | | | 17th Street Southbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 10:00 to 13:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 12:00 | | | | | | | | | | | | | | | | | | | | | |
| 12:00 | 7 | 41 | **7** | | | | **55** | | | | | **25** | | | **36** | **16** | | **16** | | | |
| **12:15** | **7** | **44** | **3** | **0** | **54** | **13** | **48** | **21** | **0** | **82** | 6 | 15 | **10** | 0 | 31 | 6 | 20 | 6 | 0 | 32 | 199 |
| 12:30 | 17 | **55** | 2 | 0 | 74 | **14** | 43 | 11 | 0 | 68 | **9** | | | | | | | | | | |
| **12:45** | **20** | **51** | **7** | **0** | **78** | 2 | 55 | **25** | **0** | **82** | **5** | **21** | **1** | **0** | **27** | **14** | **22** | 14 | 0 | **50** | **237** |
| Total Volume | 51 | 191 | 19 | 0 | 261 | 37 | 201 | 75 | 0 | 313 | 25 | 81 | 20 | 0 | 126 | 42 | 76 | 51 | 0 | 169 | 869 |
| % App. Total | 19.5 | 73.2 | 7.3 | 0 | | 11.8 | 64.2 | 24 | 0 | | 19.8 | 64.3 | 15.9 | 0 | | 24.9 | 45 | 30.2 | 0 | | |
| PHF | .638 | .868 | .679 | .000 | .837 | .661 | .914 | .750 | .000 | .954 | .694 | .810 | .500 | .000 | .875 | .656 | .864 | .797 | .000 | .845 | .917 |

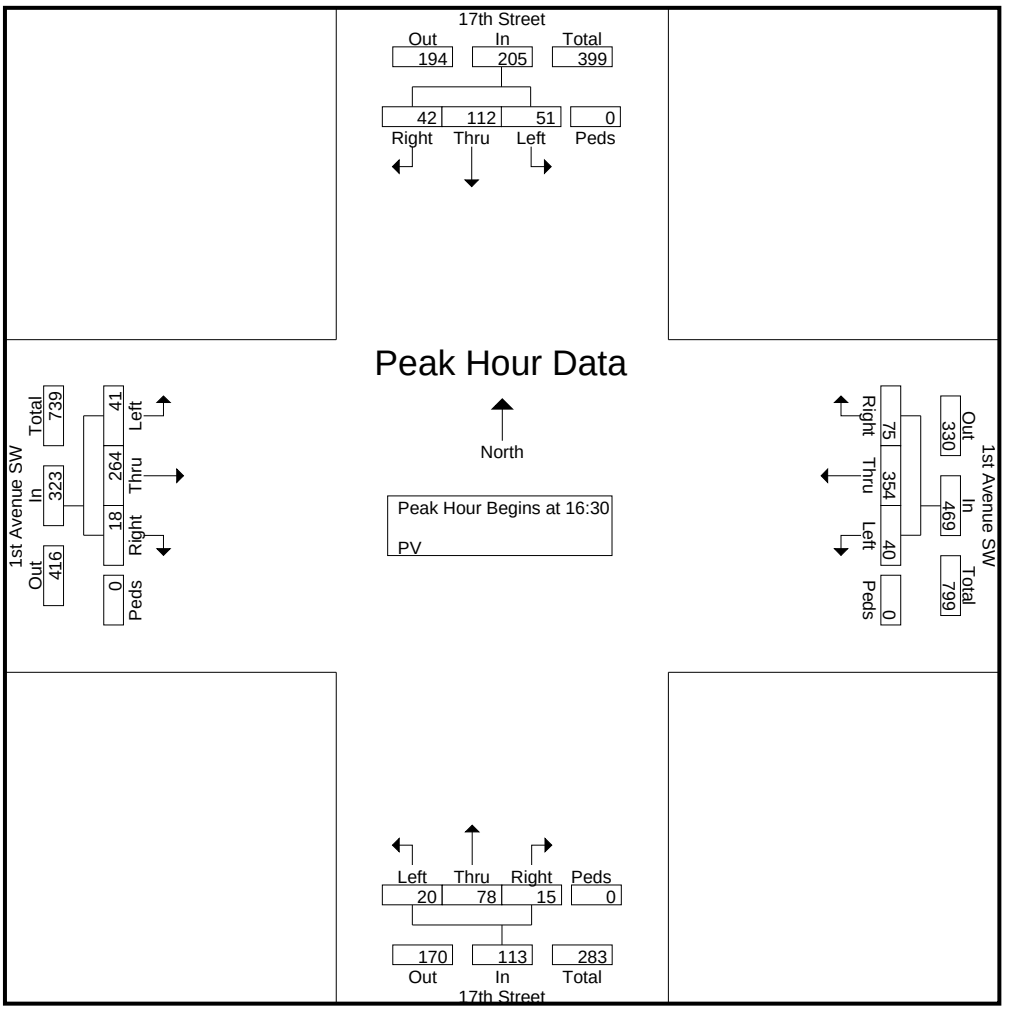


# AECOM

701 Corporate Center Drive
Suite 475
Raleigh, NC 27607
Traffic Engineering

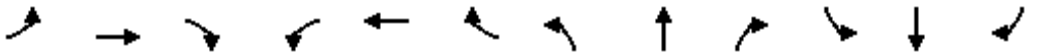

File Name : 1706132
Site Code : 17-06132
Start Date : 6/1/2017
Page No : 5

| | 1st Avenue SW Eastbound | | | | | 1st Avenue SW Westbound | | | | | 17th Street Northbound | | | | | 17th Street Southbound | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Start Time | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Left | Thru | Right | Peds | App. Total | Int. Total |
| Peak Hour Analysis From 14:00 to 18:45 - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 16:30 | | | | | | | | | | | | | | | | | | | | | |
| 16:30 | **11** | **79** | 7 | 0 | **97** | 9 | 86 | **29** | | | **9** | | **9** | 0 | **40** | **22** | **32** | **14** | | **68** | **329** |
| 16:45 | 9 | 43 | 1 | 0 | 53 | 8 | 91 | 16 | 0 | 115 | 2 | **24** | | | | | | | | | |
| **17:00** | **11** | **64** | **8** | **0** | **83** | **14** | **109** | **17** | **0** | **140** | 6 | 16 | 2 | 0 | 24 | 7 | 25 | 9 | 0 | 41 | 288 |
| 17:15 | 10 | 78 | 2 | 0 | 90 | 9 | 68 | 13 | 0 | 90 | 3 | 16 | 2 | 0 | 21 | 13 | 25 | 11 | 0 | 49 | 250 |
| Total Volume | 41 | 264 | 18 | 0 | 323 | 40 | 354 | 75 | 0 | 469 | 20 | 78 | 15 | 0 | 113 | 51 | 112 | 42 | 0 | 205 | 1110 |
| % App. Total | 12.7 | 81.7 | 5.6 | 0 | | 8.5 | 75.5 | 16 | 0 | | 17.7 | 69 | 13.3 | 0 | | 24.9 | 54.6 | 20.5 | 0 | | |
| PHF | .932 | .835 | .563 | .000 | .832 | .714 | .812 | .647 | .000 | .838 | .556 | .813 | .417 | .000 | .706 | .580 | .875 | .750 | .000 | .754 | .843 |



APPENDIX C

# 2040 No-Build Alternative Synchro & SimTraffic Reports



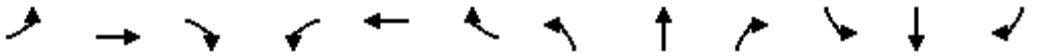
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 127 | 37 | 16 | 98 | 20 | 68 | 9 | 1407 | 104 | 90 | 1759 | 92 |
| Future Volume (vph) | 127 | 37 | 16 | 98 | 20 | 68 | 9 | 1407 | 104 | 90 | 1759 | 92 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 300 | | 0 | 150 | | 200 | 200 | | 1000 | 250 | | 400 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 1 | 1 | | 2 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.91 | 0.91 | 0.95 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frt | | 0.979 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | 0.973 | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1564 | 3137 | 0 | 3335 | 1810 | 1538 | 1719 | 3438 | 1538 | 1719 | 4940 | 1538 |
| Flt Permitted | 0.950 | 0.973 | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1564 | 3137 | 0 | 3335 | 1810 | 1538 | 1719 | 3438 | 1538 | 1719 | 4940 | 1538 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 45 | | | 45 | |
| Link Distance (ft) | | 468 | | | 555 | | | 2913 | | | 1957 | |
| Travel Time (s) | | 9.1 | | | 10.8 | | | 44.1 | | | 29.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 141 | 41 | 18 | 109 | 22 | 76 | 10 | 1563 | 116 | 100 | 1954 | 102 |
| Shared Lane Traffic (%) | 50% | | | | | | | | | | | |
| Lane Group Flow (vph) | 70 | 130 | 0 | 109 | 22 | 76 | 10 | 1563 | 116 | 100 | 1954 | 102 |
| Turn Type | Split | NA | | Split | NA | Free | Prot | NA | Free | Prot | NA | Free |
| Protected Phases | 8 | 8 | | 4 | 4 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | | | Free | | | Free | | | Free |
| Detector Phase | 8 | 8 | | 4 | 4 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 12.0 | | 7.0 | 12.0 | |
| Minimum Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 14.0 | 19.0 | | 14.0 | 19.0 | |
| Total Split (s) | 20.0 | 20.0 | | 16.0 | 16.0 | | 14.0 | 91.0 | | 23.0 | 100.0 | |
| Total Split (%) | 13.3% | 13.3% | | 10.7% | 10.7% | | 9.3% | 60.7% | | 15.3% | 66.7% | |
| Maximum Green (s) | 13.0 | 13.0 | | 9.0 | 9.0 | | 7.0 | 84.0 | | 16.0 | 93.0 | |
| Yellow Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Lead/Lag | | | | | | | Lag | Lag | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | None | C-Min | | None | C-Min | |
| Act Effct Green (s) | 11.3 | 11.3 | | 9.0 | 9.0 | 150.0 | 7.5 | 88.4 | 150.0 | 13.3 | 105.3 | 150.0 |
| Actuated g/C Ratio | 0.08 | 0.08 | | 0.06 | 0.06 | 1.00 | 0.05 | 0.59 | 1.00 | 0.09 | 0.70 | 1.00 |
| v/c Ratio | 0.60 | 0.55 | | 0.54 | 0.20 | 0.05 | 0.12 | 0.77 | 0.08 | 0.66 | 0.56 | 0.07 |
| Control Delay | 87.6 | 75.7 | | 78.8 | 71.4 | 0.1 | 70.4 | 27.4 | 0.1 | 83.6 | 5.3 | 0.0 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 87.6 | 75.7 | | 78.8 | 71.4 | 0.1 | 70.4 | 27.4 | 0.1 | 83.6 | 5.3 | 0.0 |
| LOS | F | E | | E | E | A | E | C | A | F | A | A |
| Approach Delay | | 79.9 | | | 49.1 | | | 25.8 | | | 8.6 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | | E | | | D | | | C | | | A | |
| Queue Length 50th (ft) | 73 | 68 | | 54 | 21 | 0 | 10 | 611 | 0 | 90 | 49 | 0 |
| Queue Length 95th (ft) | 132 | 106 | | 88 | 52 | 0 | 30 | 732 | 0 | m87 | m304 | m0 |
| Internal Link Dist (ft) | | 388 | | | 475 | | | 2833 | | | 1877 | |
| Turn Bay Length (ft) | 300 | | | 150 | | 200 | 200 | | 1000 | 250 | | 400 |
| Base Capacity (vph) | 135 | 271 | | 208 | 113 | 1538 | 86 | 2028 | 1538 | 183 | 3486 | 1538 |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.52 | 0.48 | | 0.52 | 0.19 | 0.05 | 0.12 | 0.77 | 0.08 | 0.55 | 0.56 | 0.07 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 150 | | | |
| Actuated Cycle Length: 150 | | | |
| Offset: 116 (77%), Referenced to phase 2:NBT and 6:SBT, Start of Green | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.77 | | | |
| Intersection Signal Delay: 20.8 | | Intersection LOS: C | |
| Intersection Capacity Utilization 72.4% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 1: US 321 & 13th Street SW



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 20 | 4 | 65 | 13 | 4 | 15 | 112 | 1487 | 21 | 30 | 1843 | 42 |
| Future Volume (vph) | 20 | 4 | 65 | 13 | 4 | 15 | 112 | 1487 | 21 | 30 | 1843 | 42 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 200 | | 0 | 150 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.901 | | | 0.934 | | | 0.998 | | | 0.997 | |
| Flt Protected | | 0.989 | | | 0.980 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1644 | 0 | 0 | 1656 | 0 | 1719 | 3431 | 0 | 1719 | 3428 | 0 |
| Flt Permitted | | 0.989 | | | 0.980 | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 1644 | 0 | 0 | 1656 | 0 | 1719 | 3431 | 0 | 1719 | 3428 | 0 |
| Link Speed (mph) | | 25 | | | 25 | | | 45 | | | 45 | |
| Link Distance (ft) | | 892 | | | 860 | | | 1957 | | | 1105 | |
| Travel Time (s) | | 24.3 | | | 23.5 | | | 29.7 | | | 16.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 22 | 4 | 72 | 14 | 4 | 17 | 124 | 1652 | 23 | 33 | 2048 | 47 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 98 | 0 | 0 | 35 | 0 | 124 | 1675 | 0 | 33 | 2095 | 0 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 74.4% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.1 |

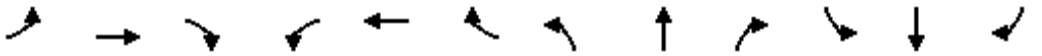
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 20 | 4 | 65 | 13 | 4 | 15 | 112 | 1487 | 21 | 30 | 1843 | 42 |
| Future Vol, veh/h | 20 | 4 | 65 | 13 | 4 | 15 | 112 | 1487 | 21 | 30 | 1843 | 42 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 200 | - | - | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 3 | 3 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Mvmt Flow | 22 | 4 | 72 | 14 | 4 | 17 | 124 | 1652 | 23 | 33 | 2048 | 47 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 3215 | 4062 | 1047 | 3006 | 4074 | 838 | 2094 | 0 | 0 | 1676 | 0 | 0 |
| Stage 1 | 2138 | 2138 | - | 1913 | 1913 | - | - | - | - | - | - | - |
| Stage 2 | 1077 | 1924 | - | 1093 | 2161 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.56 | 6.56 | 6.96 | 7.6 | 6.6 | 7 | 4.2 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | 6.56 | 5.56 | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.56 | 5.56 | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.53 | 4.03 | 3.33 | 3.55 | 4.05 | 3.35 | 2.25 | - | - | 2.25 | - | - |
| Pot Cap-1 Maneuver | ~ 4 | ~ 3 | 223 | ~ 6 | ~ 2 | 303 | 249 | - | - | 365 | - | - |
| Stage 1 | 50 | 87 | - | 68 | 110 | - | - | - | - | - | - | - |
| Stage 2 | 232 | 111 | - | 223 | 82 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | ~ 1 | 223 | - | ~ 1 | 303 | 249 | - | - | 365 | - | - |
| Mov Cap-2 Maneuver | - | ~ 1 | - | - | ~ 1 | - | - | - | - | - | - | - |
| Stage 1 | 25 | 79 | - | 34 | 55 | - | - | - | - | - | - | - |
| Stage 2 | 101 | 56 | - | 129 | 75 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | | | 2.3 | 0.2 |
| HCM LOS | - | - | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 249 | - | - | - | - | 365 | - | - |
| HCM Lane V/C Ratio | 0.5 | - | - | - | - | 0.091 | - | - |
| HCM Control Delay (s) | 33.1 | - | - | - | - | 15.9 | - | - |
| HCM Lane LOS | D | - | - | - | - | C | - | - |
| HCM 95th %tile Q(veh) | 2.6 | - | - | - | - | 0.3 | - | - |

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



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 60 | 132 | 96 | 76 | 114 | 52 | 124 | 1333 | 115 | 98 | 1659 | 97 |
| Future Volume (vph) | 60 | 132 | 96 | 76 | 114 | 52 | 124 | 1333 | 115 | 98 | 1659 | 97 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 250 | | 500 | 400 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 0 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.937 | | | 0.968 | | | | 0.850 | | 0.992 | |
| Flt Protected | 0.950 | | | | 0.985 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1752 | 1728 | 0 | 0 | 3342 | 0 | 1719 | 3438 | 1538 | 1719 | 3411 | 0 |
| Flt Permitted | 0.950 | | | | 0.985 | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1752 | 1728 | 0 | 0 | 3342 | 0 | 1719 | 3438 | 1538 | 1719 | 3411 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 45 | | | 45 | |
| Link Distance (ft) | | 627 | | | 328 | | | 1105 | | | 2513 | |
| Travel Time (s) | | 12.2 | | | 6.4 | | | 16.7 | | | 38.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 67 | 147 | 107 | 84 | 127 | 58 | 138 | 1481 | 128 | 109 | 1843 | 108 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 67 | 254 | 0 | 0 | 269 | 0 | 138 | 1481 | 128 | 109 | 1951 | 0 |
| Turn Type | Split | NA | | Split | NA | | Prot | NA | pm+ov | Prot | NA | |
| Protected Phases | 8 | 8 | | 4 | 4 | | 5 | 2 | 4 | 1 | 6 | |
| Permitted Phases | | | | | | | | | 2 | | | |
| Detector Phase | 8 | 8 | | 4 | 4 | | 5 | 2 | 4 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 12.0 | 7.0 | 7.0 | 12.0 | |
| Minimum Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 14.0 | 19.0 | 14.0 | 14.0 | 19.0 | |
| Total Split (s) | 27.0 | 27.0 | | 18.0 | 18.0 | | 18.0 | 85.0 | 18.0 | 20.0 | 87.0 | |
| Total Split (%) | 18.0% | 18.0% | | 12.0% | 12.0% | | 12.0% | 56.7% | 12.0% | 13.3% | 58.0% | |
| Maximum Green (s) | 20.0 | 20.0 | | 11.0 | 11.0 | | 11.0 | 78.0 | 11.0 | 13.0 | 80.0 | |
| Yellow Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 7.0 | 7.0 | | | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | None | C-Min | None | None | C-Min | |
| Act Effct Green (s) | 20.0 | 20.0 | | | 11.0 | | 11.0 | 74.3 | 85.3 | 16.7 | 80.0 | |
| Actuated g/C Ratio | 0.13 | 0.13 | | | 0.07 | | 0.07 | 0.50 | 0.57 | 0.11 | 0.53 | |
| v/c Ratio | 0.29 | 1.10 | | | 1.10 | | 1.10 | 0.87 | 0.15 | 0.57 | 1.07 | |
| Control Delay | 62.3 | 147.7 | | | 147.8 | | 161.5 | 28.1 | 4.2 | 65.0 | 67.8 | |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 62.3 | 147.7 | | | 147.8 | | 161.5 | 28.1 | 4.2 | 65.0 | 67.8 | |
| LOS | E | F | | | F | | F | C | A | E | E | |
| Approach Delay | | 129.9 | | | 147.8 | | | 36.9 | | | 67.7 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | | F | | | F | | | D | | | E | |
| Queue Length 50th (ft) | 60 | ~282 | | | ~156 | | ~151 | 723 | 25 | 99 | ~1101 | |
| Queue Length 95th (ft) | 111 | #464 | | | #254 | | m#245 | 397 | m7 | m128 | #1235 | |
| Internal Link Dist (ft) | | 547 | | | 248 | | | 1025 | | | 2433 | |
| Turn Bay Length (ft) | | | | | | | 250 | | 500 | 400 | | |
| Base Capacity (vph) | 233 | 230 | | | 245 | | 126 | 1787 | 874 | 191 | 1819 | |
| Starvation Cap Reductn | 0 | 0 | | | 0 | | 0 | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | | 0 | | 0 | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | | 0 | | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | 0.29 | 1.10 | | | 1.10 | | 1.10 | 0.83 | 0.15 | 0.57 | 1.07 | |

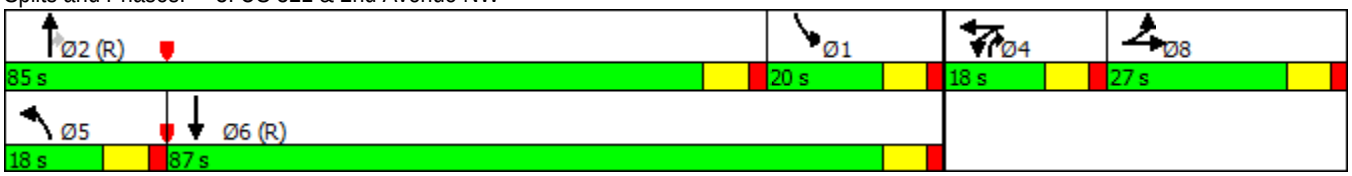
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 150 | | | |
| Actuated Cycle Length: 150 | | | |
| Offset: 32 (21%), Referenced to phase 2:NBT and 6:SBT, Start of Green | | | |
| Natural Cycle: 170 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.10 | | | |
| Intersection Signal Delay: 64.9 | | Intersection LOS: E | |
| Intersection Capacity Utilization 99.0% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

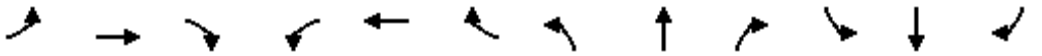
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Splits and Phases: 3: US 321 & 2nd Avenue NW





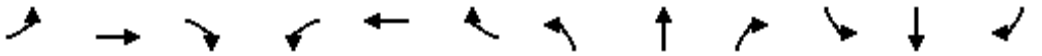
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 7 | 54 | 36 | 57 | 135 | 7 | 70 | 1394 | 45 | 7 | 1724 | 17 |
| Future Volume (vph) | 7 | 54 | 36 | 57 | 135 | 7 | 70 | 1394 | 45 | 7 | 1724 | 17 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 150 | | 0 | 100 | | 200 | 150 | | 0 |
| Storage Lanes | 0 | | 0 | 1 | | 0 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.950 | | | 0.992 | | | | 0.850 | | 0.999 | |
| Flt Protected | | 0.996 | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1745 | 0 | 1671 | 1745 | 0 | 1719 | 3438 | 1538 | 1736 | 3468 | 0 |
| Flt Permitted | | 0.905 | | 0.555 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 1586 | 0 | 976 | 1745 | 0 | 1719 | 3438 | 1538 | 1736 | 3468 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 45 | | | 45 | |
| Link Distance (ft) | | 406 | | | 154 | | | 2513 | | | 1038 | |
| Travel Time (s) | | 7.9 | | | 3.0 | | | 38.1 | | | 15.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 8% | 8% | 8% | 5% | 5% | 5% | 4% | 4% | 4% |
| Adj. Flow (vph) | 8 | 60 | 40 | 63 | 150 | 8 | 78 | 1549 | 50 | 8 | 1916 | 19 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 108 | 0 | 63 | 158 | 0 | 78 | 1549 | 50 | 8 | 1935 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Prot | NA | Perm | Prot | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | 2 | | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 12.0 | 12.0 | 7.0 | 12.0 | |
| Minimum Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 14.0 | 19.0 | 19.0 | 14.0 | 19.0 | |
| Total Split (s) | 28.0 | 28.0 | | 28.0 | 28.0 | | 18.0 | 108.0 | 108.0 | 14.0 | 104.0 | |
| Total Split (%) | 18.7% | 18.7% | | 18.7% | 18.7% | | 12.0% | 72.0% | 72.0% | 9.3% | 69.3% | |
| Maximum Green (s) | 21.0 | 21.0 | | 21.0 | 21.0 | | 11.0 | 101.0 | 101.0 | 7.0 | 97.0 | |
| Yellow Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | |
| Lead/Lag | | | | | | | Lag | Lag | Lag | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | Yes | Yes | Yes | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | None | C-Min | C-Min | None | C-Min | |
| Act Effct Green (s) | | 17.8 | | 17.8 | 17.8 | | 10.4 | 115.4 | 115.4 | 7.0 | 100.8 | |
| Actuated g/C Ratio | | 0.12 | | 0.12 | 0.12 | | 0.07 | 0.77 | 0.77 | 0.05 | 0.67 | |
| v/c Ratio | | 0.57 | | 0.55 | 0.76 | | 0.66 | 0.59 | 0.04 | 0.10 | 0.83 | |
| Control Delay | | 74.2 | | 79.3 | 87.0 | | 57.5 | 3.8 | 1.6 | 75.3 | 19.0 | |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | |
| Total Delay | | 74.2 | | 79.3 | 87.0 | | 57.5 | 3.8 | 1.6 | 75.3 | 19.2 | |
| LOS | | E | | E | F | | E | A | A | E | B | |
| Approach Delay | | 74.2 | | | 84.8 | | | 6.2 | | | 19.4 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | | E | | | F | | | A | | | B | |
| Queue Length 50th (ft) | | 101 | | 59 | 151 | | 71 | 12 | 1 | 8 | 418 | |
| Queue Length 95th (ft) | | 166 | | 110 | 230 | | m90 | m59 | m4 | m9 | 452 | |
| Internal Link Dist (ft) | | 326 | | | 74 | | | 2433 | | | 958 | |
| Turn Bay Length (ft) | | | | 150 | | | 100 | | 200 | 150 | | |
| Base Capacity (vph) | | 222 | | 136 | 244 | | 129 | 2644 | 1183 | 81 | 2329 | |
| Starvation Cap Reductn | | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 49 | |
| Spillback Cap Reductn | | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | | 0.49 | | 0.46 | 0.65 | | 0.60 | 0.59 | 0.04 | 0.10 | 0.85 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 150 | | | |
| Actuated Cycle Length: 150 | | | |
| Offset: 26 (17%), Referenced to phase 2:NBT and 6:SBT, Start of Green | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.83 | | | |
| Intersection Signal Delay: 19.0 | | Intersection LOS: B | |
| Intersection Capacity Utilization 81.0% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 4: US 321 & 7th Avenue NW



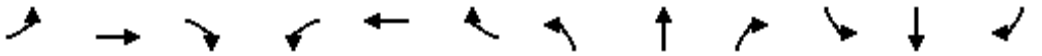
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 53 | 4 | 39 | 56 | 4 | 53 | 131 | 1299 | 39 | 45 | 1580 | 216 |
| Future Volume (vph) | 53 | 4 | 39 | 56 | 4 | 53 | 131 | 1299 | 39 | 45 | 1580 | 216 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 300 | | 0 | 150 | | 0 | 150 | | 0 | 100 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.863 | | | 0.860 | | | 0.996 | | | 0.982 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1752 | 1592 | 0 | 1736 | 1571 | 0 | 1736 | 3457 | 0 | 1736 | 3409 | 0 |
| Flt Permitted | 0.716 | | | 0.726 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1321 | 1592 | 0 | 1326 | 1571 | 0 | 1736 | 3457 | 0 | 1736 | 3409 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 45 | | | 45 | |
| Link Distance (ft) | | 346 | | | 350 | | | 1038 | | | 963 | |
| Travel Time (s) | | 6.7 | | | 6.8 | | | 15.7 | | | 14.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 59 | 4 | 43 | 62 | 4 | 59 | 146 | 1443 | 43 | 50 | 1756 | 240 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 59 | 47 | 0 | 62 | 63 | 0 | 146 | 1486 | 0 | 50 | 1996 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Prot | NA | | Prot | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 12.0 | | 7.0 | 12.0 | |
| Minimum Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 14.0 | 19.0 | | 14.0 | 19.0 | |
| Total Split (s) | 18.0 | 18.0 | | 18.0 | 18.0 | | 25.0 | 115.0 | | 17.0 | 107.0 | |
| Total Split (%) | 12.0% | 12.0% | | 12.0% | 12.0% | | 16.7% | 76.7% | | 11.3% | 71.3% | |
| Maximum Green (s) | 11.0 | 11.0 | | 11.0 | 11.0 | | 18.0 | 108.0 | | 10.0 | 100.0 | |
| Yellow Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Lead/Lag | | | | | | | Lag | Lag | | Lead | Lead | |
| Lead-Lag Optimize? | | | | | | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | None | C-Min | | None | C-Min | |
| Act Effct Green (s) | 10.5 | 10.5 | | 10.5 | 10.5 | | 16.3 | 112.4 | | 9.0 | 102.3 | |
| Actuated g/C Ratio | 0.07 | 0.07 | | 0.07 | 0.07 | | 0.11 | 0.75 | | 0.06 | 0.68 | |
| v/c Ratio | 0.64 | 0.43 | | 0.67 | 0.58 | | 0.78 | 0.57 | | 0.49 | 0.86 | |
| Control Delay | 97.7 | 78.6 | | 100.8 | 88.3 | | 73.0 | 2.8 | | 96.9 | 7.7 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 97.7 | 78.6 | | 100.8 | 88.3 | | 73.0 | 2.8 | | 96.9 | 7.7 | |
| LOS | F | E | | F | F | | E | A | | F | A | |
| Approach Delay | | 89.2 | | | 94.5 | | | 9.1 | | | 9.9 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | | F | | | F | | | A | | | A | |
| Queue Length 50th (ft) | 56 | 44 | | 59 | 60 | | 151 | 84 | | 50 | 157 | |
| Queue Length 95th (ft) | #123 | 90 | | #131 | 114 | | #238 | 11 | | m66 | m158 | |
| Internal Link Dist (ft) | | 266 | | | 270 | | | 958 | | | 883 | |
| Turn Bay Length (ft) | 300 | | | 150 | | | 150 | | | 100 | | |
| Base Capacity (vph) | 99 | 119 | | 100 | 118 | | 208 | 2595 | | 115 | 2331 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 8 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 5 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.60 | 0.39 | | 0.62 | 0.53 | | 0.70 | 0.57 | | 0.43 | 0.86 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 150 | | | |
| Actuated Cycle Length: 150 | | | |
| Offset: 46 (31%), Referenced to phase 2:NBT and 6:SBT, Start of Green | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.86 | | | |
| Intersection Signal Delay: 14.4 | | Intersection LOS: B | |
| Intersection Capacity Utilization 85.1% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: US 321 & 9th Avenue NW



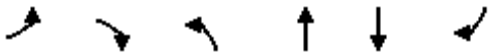
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 86 | 82 | 51 | 135 | 137 | 660 | 39 | 1430 | 61 | 323 | 1537 | 70 |
| Future Volume (vph) | 86 | 82 | 51 | 135 | 137 | 660 | 39 | 1430 | 61 | 323 | 1537 | 70 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 600 | | 0 | 300 | | 0 | 400 | | 250 | 600 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 1 | | 1 | 2 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 200 | | |
| Lane Util. Factor | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 0.97 | 0.95 | 0.95 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | 0.993 | |
| Flt Protected | 0.950 | 0.995 | | 0.950 | 0.996 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1665 | 1744 | 1568 | 1681 | 1763 | 1583 | 1719 | 3438 | 1538 | 3367 | 3447 | 0 |
| Flt Permitted | 0.950 | 0.995 | | 0.950 | 0.996 | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1665 | 1744 | 1568 | 1681 | 1763 | 1583 | 1719 | 3438 | 1538 | 3367 | 3447 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 45 | | | 45 | |
| Link Distance (ft) | | 915 | | | 441 | | | 963 | | | 1050 | |
| Travel Time (s) | | 17.8 | | | 8.6 | | | 14.6 | | | 15.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 2% | 2% | 2% | 5% | 5% | 5% | 4% | 4% | 4% |
| Adj. Flow (vph) | 96 | 91 | 57 | 150 | 152 | 733 | 43 | 1589 | 68 | 359 | 1708 | 78 |
| Shared Lane Traffic (%) | 10% | | | 10% | | | | | | | | |
| Lane Group Flow (vph) | 86 | 101 | 57 | 135 | 167 | 733 | 43 | 1589 | 68 | 359 | 1786 | 0 |
| Turn Type | Split | NA | pm+ov | Split | NA | pm+ov | Prot | NA | Perm | Prot | NA | |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | 12.0 | 7.0 | 12.0 | |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 19.0 | 19.0 | 14.0 | 19.0 | |
| Total Split (s) | 14.0 | 14.0 | 15.0 | 18.0 | 18.0 | 47.0 | 15.0 | 71.0 | 71.0 | 47.0 | 103.0 | |
| Total Split (%) | 9.3% | 9.3% | 10.0% | 12.0% | 12.0% | 31.3% | 10.0% | 47.3% | 47.3% | 31.3% | 68.7% | |
| Maximum Green (s) | 7.0 | 7.0 | 8.0 | 11.0 | 11.0 | 40.0 | 8.0 | 64.0 | 64.0 | 40.0 | 96.0 | |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | |
| Lead/Lag | | | Lag | | | Lead | Lag | Lag | Lag | Lead | Lead | |
| Lead-Lag Optimize? | | | Yes | | | Yes | Yes | Yes | Yes | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | |
| Act Effct Green (s) | 7.0 | 7.0 | 20.7 | 11.0 | 11.0 | 58.0 | 8.1 | 64.0 | 64.0 | 40.0 | 98.7 | |
| Actuated g/C Ratio | 0.05 | 0.05 | 0.14 | 0.07 | 0.07 | 0.39 | 0.05 | 0.43 | 0.43 | 0.27 | 0.66 | |
| v/c Ratio | 1.12 | 1.25 | 0.27 | 1.10 | 1.29 | 1.20 | 0.47 | 1.08 | 0.10 | 0.40 | 0.79 | |
| Control Delay | 199.0 | 234.7 | 59.4 | 170.9 | 229.7 | 144.4 | 68.3 | 77.8 | 18.6 | 43.7 | 12.5 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 199.0 | 234.7 | 59.4 | 170.9 | 229.7 | 144.4 | 68.3 | 77.8 | 18.6 | 43.7 | 12.5 | |
| LOS | F | F | E | F | F | F | E | E | B | D | B | |
| Approach Delay | | 181.2 | | | 161.6 | | | 75.2 | | | 17.7 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | | F | | | F | | | E | | | B | |
| Queue Length 50th (ft) | ~101 | ~128 | 50 | ~156 | ~218 | ~866 | 39 | ~898 | 23 | 126 | 341 | |
| Queue Length 95th (ft) | #226 | #263 | 96 | #308 | #383 | #1116 | m73 | #1044 | m50 | m136 | m429 | |
| Internal Link Dist (ft) | | 835 | | | 361 | | | 883 | | | 970 | |
| Turn Bay Length (ft) | 600 | | | 300 | | | 400 | | 250 | 600 | | |
| Base Capacity (vph) | 77 | 81 | 217 | 123 | 129 | 612 | 94 | 1466 | 656 | 897 | 2275 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | 1.12 | 1.25 | 0.26 | 1.10 | 1.29 | 1.20 | 0.46 | 1.08 | 0.10 | 0.40 | 0.79 | |

| Intersection Summary | |
|---|---|
| Area Type: | Other |
| Cycle Length: 150 | |
| Actuated Cycle Length: 150 | |
| Offset: 74 (49%), Referenced to phase 2:NBT and 6:SBT, Start of Green | |
| Natural Cycle: 170 | |
| Control Type: Actuated-Coordinated | |
| Maximum v/c Ratio: 1.29 | |
| Intersection Signal Delay: 73.6 | Intersection LOS: E |
| Intersection Capacity Utilization 103.7% | ICU Level of Service G |
| Analysis Period (min) 15 | |

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: US 321 & Clement Boulevard



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 46 | 4 | 1683 | 2486 | 31 |
| Future Volume (vph) | 0 | 46 | 4 | 1683 | 2486 | 31 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 200 | | | 0 |
| Storage Lanes | 0 | 1 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 |
| Frt | | 0.865 | | | 0.998 | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 1596 | 1736 | 3471 | 3431 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 1596 | 1736 | 3471 | 3431 | 0 |
| Link Speed (mph) | 35 | | | 45 | 45 | |
| Link Distance (ft) | 250 | | | 1050 | 1732 | |
| Travel Time (s) | 4.9 | | | 15.9 | 26.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 4% | 4% | 5% | 5% |
| Adj. Flow (vph) | 0 | 51 | 4 | 1870 | 2762 | 34 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 51 | 4 | 1870 | 2796 | 0 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 79.7% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

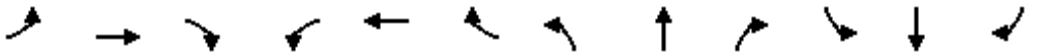
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 46 | 4 | 1683 | 2486 | 31 |
| Future Vol, veh/h | 0 | 46 | 4 | 1683 | 2486 | 31 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | 200 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 3 | 3 | 4 | 4 | 5 | 5 |
| Mvmt Flow | 0 | 51 | 4 | 1870 | 2762 | 34 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 1398 | 2797 | 0 | - | 0 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | 6.96 | 4.18 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | 3.33 | 2.24 | - | - | - |
| Pot Cap-1 Maneuver | 0 | 129 | 132 | - | - | - |
| Stage 1 | 0 | - | - | - | - | - |
| Stage 2 | 0 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | - | 129 | 132 | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 50.1 | 0.1 | 0 |
| HCM LOS | F | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 132 | - | 129 | - | - |
| HCM Lane V/C Ratio | 0.034 | - | 0.396 | - | - |
| HCM Control Delay (s) | 33.2 | - | 50.1 | - | - |
| HCM Lane LOS | D | - | F | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 1.7 | - | - |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 13 | 7 | 9 | 13 | 7 | 166 | 15 | 1628 | 21 | 393 | 2387 | 30 |
| Future Volume (vph) | 13 | 7 | 9 | 13 | 7 | 166 | 15 | 1628 | 21 | 393 | 2387 | 30 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 250 | | 250 | 0 | | 100 | 300 | | 150 | 900 | | 200 |
| Storage Lanes | 1 | | 1 | 0 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.969 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1719 | 1810 | 1538 | 0 | 1805 | 1583 | 1736 | 3471 | 1553 | 1736 | 3471 | 1553 |
| Flt Permitted | 0.950 | | | | 0.969 | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1719 | 1810 | 1538 | 0 | 1805 | 1583 | 1736 | 3471 | 1553 | 1736 | 3471 | 1553 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 45 | | | 45 | |
| Link Distance (ft) | | 606 | | | 480 | | | 1732 | | | 3358 | |
| Travel Time (s) | | 11.8 | | | 9.4 | | | 26.2 | | | 50.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 2% | 2% | 2% | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 14 | 8 | 10 | 14 | 8 | 184 | 17 | 1809 | 23 | 437 | 2652 | 33 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 14 | 8 | 10 | 0 | 22 | 184 | 17 | 1809 | 23 | 437 | 2652 | 33 |
| Turn Type | Split | NA | pm+ov | Split | NA | pm+ov | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | 12.0 | 7.0 | 12.0 | 12.0 |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 19.0 | 19.0 | 14.0 | 19.0 | 19.0 |
| Total Split (s) | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 42.0 | 14.0 | 80.0 | 80.0 | 42.0 | 108.0 | 108.0 |
| Total Split (%) | 9.3% | 9.3% | 9.3% | 9.3% | 9.3% | 28.0% | 9.3% | 53.3% | 53.3% | 28.0% | 72.0% | 72.0% |
| Maximum Green (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 35.0 | 7.0 | 73.0 | 73.0 | 35.0 | 101.0 | 101.0 |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Lead/Lag | | | Lead | | | Lag | Lead | Lead | Lead | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | Yes | | | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |
| Act Effct Green (s) | 7.0 | 7.0 | 11.2 | | 7.0 | 39.2 | 7.0 | 84.2 | 84.2 | 35.0 | 120.6 | 120.6 |
| Actuated g/C Ratio | 0.05 | 0.05 | 0.07 | | 0.05 | 0.26 | 0.05 | 0.56 | 0.56 | 0.23 | 0.80 | 0.80 |
| v/c Ratio | 0.17 | 0.10 | 0.09 | | 0.26 | 0.45 | 0.21 | 0.93 | 0.03 | 1.08 | 0.95 | 0.03 |
| Control Delay | 74.0 | 71.1 | 48.4 | | 77.0 | 39.2 | 87.7 | 19.9 | 10.6 | 91.6 | 17.9 | 4.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 74.0 | 71.1 | 48.4 | | 77.0 | 39.2 | 87.7 | 19.9 | 10.6 | 91.6 | 17.9 | 4.5 |
| LOS | E | E | D | | E | D | F | B | B | F | B | A |
| Approach Delay | | 65.3 | | | 43.2 | | | 20.4 | | | 28.1 | |

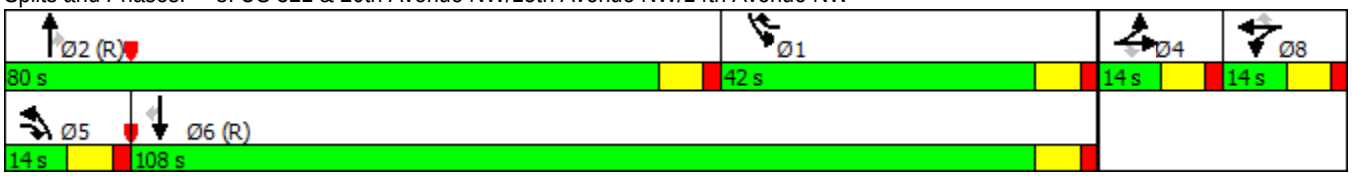
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | | E | | | D | | | C | | | C | |
| Queue Length 50th (ft) | 13 | 8 | 8 | | 21 | 117 | 17 | ~1027 | 7 | ~476 | ~1580 | 9 |
| Queue Length 95th (ft) | 39 | 27 | 25 | | 53 | 178 | m15 | m630 | m7 | m#463 | m#1541 | m6 |
| Internal Link Dist (ft) | | 526 | | | 400 | | | 1652 | | | 3278 | |
| Turn Bay Length (ft) | 250 | | 250 | | | 100 | 300 | | 150 | 900 | | 200 |
| Base Capacity (vph) | 80 | 84 | 114 | | 84 | 413 | 81 | 1948 | 871 | 405 | 2791 | 1248 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.17 | 0.10 | 0.09 | | 0.26 | 0.45 | 0.21 | 0.93 | 0.03 | 1.08 | 0.95 | 0.03 |

**Intersection Summary**

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 122 (81%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 180
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.08
Intersection Signal Delay: 26.2 Intersection LOS: C
Intersection Capacity Utilization 97.1% ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: US 321 & 20th Avenue NW/15th Avenue NW/14th Avenue NW



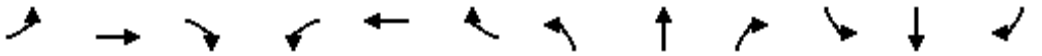
| Lane Group | WBL | WBR | NBU | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 463 | 33 | 4 | 1601 | 200 | 21 | 2345 |
| Future Volume (vph) | 463 | 33 | 4 | 1601 | 200 | 21 | 2345 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 250 | 250 | 300 | | 300 | 400 | |
| Storage Lanes | 1 | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 100 | | 100 | | | 100 | |
| Lane Util. Factor | 0.97 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 |
| Frt | | 0.850 | | | 0.850 | | |
| Flt Protected | 0.950 | | 0.950 | | | 0.950 | |
| Satd. Flow (prot) | 3433 | 1583 | 1736 | 3471 | 1553 | 1736 | 3471 |
| Flt Permitted | 0.950 | | 0.950 | | | 0.950 | |
| Satd. Flow (perm) | 3433 | 1583 | 1736 | 3471 | 1553 | 1736 | 3471 |
| Right Turn on Red | | No | | | No | | |
| Satd. Flow (RTOR) | | | | | | | |
| Link Speed (mph) | 45 | | | 55 | | | 55 |
| Link Distance (ft) | 983 | | | 1234 | | | 3568 |
| Travel Time (s) | 14.9 | | | 15.3 | | | 44.2 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 514 | 37 | 4 | 1779 | 222 | 23 | 2606 |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 514 | 37 | 4 | 1779 | 222 | 23 | 2606 |
| Turn Type | Prot | Perm | Prot | NA | Free | Prot | NA |
| Protected Phases | 8 | | 5 | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | | Free | | |
| Detector Phase | 8 | 8 | 5 | 2 | | 1 | 6 |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 14.0 | | 7.0 | 14.0 |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 21.0 | | 14.0 | 21.0 |
| Total Split (s) | 27.0 | 27.0 | 14.0 | 109.0 | | 14.0 | 109.0 |
| Total Split (%) | 18.0% | 18.0% | 9.3% | 72.7% | | 9.3% | 72.7% |
| Maximum Green (s) | 20.0 | 20.0 | 7.0 | 102.0 | | 7.0 | 102.0 |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 |
| Lead/Lag | | | Lead | Lead | | Lag | Lag |
| Lead-Lag Optimize? | | | Yes | Yes | | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Recall Mode | None | None | None | C-Min | | None | C-Min |
| Act Effct Green (s) | 20.0 | 20.0 | 7.0 | 107.6 | 150.0 | 7.0 | 113.2 |
| Actuated g/C Ratio | 0.13 | 0.13 | 0.05 | 0.72 | 1.00 | 0.05 | 0.75 |
| v/c Ratio | 1.12 | 0.18 | 0.05 | 0.71 | 0.14 | 0.28 | 1.00 |
| Control Delay | 137.7 | 60.2 | 101.8 | 4.3 | 0.1 | 60.0 | 23.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 137.7 | 60.2 | 101.8 | 4.3 | 0.1 | 60.0 | 23.2 |
| LOS | F | E | F | A | A | E | C |
| Approach Delay | 132.5 | | | 4.0 | | | 23.5 |

| Lane Group | WBL | WBR | NBU | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Approach LOS | F | | | A | | | C |
| Queue Length 50th (ft) | ~297 | 33 | 4 | 15 | 0 | 22 | 132 |
| Queue Length 95th (ft) | #416 | 70 | m5 | 39 | m0 | m27 | #1631 |
| Internal Link Dist (ft) | 903 | | | 1154 | | | 3488 |
| Turn Bay Length (ft) | 250 | 250 | 300 | | 300 | 400 | |
| Base Capacity (vph) | 457 | 211 | 81 | 2490 | 1553 | 81 | 2619 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 1.12 | 0.18 | 0.05 | 0.71 | 0.14 | 0.28 | 1.00 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 150 | | | |
| Actuated Cycle Length: 150 | | | |
| Offset: 28 (19%), Referenced to phase 2:NBT and 6:SBT, Start of Green | | | |
| Natural Cycle: 180 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.12 | | | |
| Intersection Signal Delay: 27.5 | | Intersection LOS: C | |
| Intersection Capacity Utilization 89.7% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: US 321 & Grace Chapel Road



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 4 | 4 | 4 | 90 | 5 | 16 | 13 | 1352 | 74 | 38 | 2029 | 7 |
| Future Volume (vph) | 4 | 4 | 4 | 90 | 5 | 16 | 13 | 1352 | 74 | 38 | 2029 | 7 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 200 | | 350 | 450 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | 0.999 | |
| Flt Protected | | 0.976 | | | 0.955 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1766 | 1538 | 0 | 1227 | 1442 | 1736 | 3471 | 1442 | 1612 | 3501 | 0 |
| Flt Permitted | | 0.870 | | | 0.733 | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 1574 | 1538 | 0 | 942 | 1442 | 1736 | 3471 | 1442 | 1612 | 3501 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 25 | | | 35 | | | 55 | | | 55 | |
| Link Distance (ft) | | 264 | | | 676 | | | 3568 | | | 1233 | |
| Travel Time (s) | | 7.2 | | | 13.2 | | | 44.2 | | | 15.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 50% | 12% | 12% | 4% | 4% | 12% | 12% | 3% | 3% |
| Adj. Flow (vph) | 4 | 4 | 4 | 100 | 6 | 18 | 14 | 1502 | 82 | 42 | 2254 | 8 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 8 | 4 | 0 | 106 | 18 | 14 | 1502 | 82 | 42 | 2262 | 0 |
| Turn Type | Perm | NA | pm+ov | Perm | NA | pm+ov | Prot | NA | Perm | Prot | NA | |
| Protected Phases | | 4 | 5 | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | 2 | | | |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 14.0 | 14.0 | 7.0 | 14.0 | |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 21.0 | 21.0 | 14.0 | 21.0 | |
| Total Split (s) | 26.0 | 26.0 | 14.0 | 26.0 | 26.0 | 16.0 | 14.0 | 108.0 | 108.0 | 16.0 | 110.0 | |
| Total Split (%) | 17.3% | 17.3% | 9.3% | 17.3% | 17.3% | 10.7% | 9.3% | 72.0% | 72.0% | 10.7% | 73.3% | |
| Maximum Green (s) | 19.0 | 19.0 | 7.0 | 19.0 | 19.0 | 9.0 | 7.0 | 101.0 | 101.0 | 9.0 | 103.0 | |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | |
| Lead/Lag | | | Lead | | | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | |
| Act Effct Green (s) | | 19.1 | 33.1 | | 19.1 | 34.4 | 7.0 | 104.4 | 104.4 | 8.3 | 108.5 | |
| Actuated g/C Ratio | | 0.13 | 0.22 | | 0.13 | 0.23 | 0.05 | 0.70 | 0.70 | 0.06 | 0.72 | |
| v/c Ratio | | 0.04 | 0.01 | | 0.89 | 0.05 | 0.17 | 0.62 | 0.08 | 0.47 | 0.89 | |
| Control Delay | | 58.3 | 46.0 | | 119.8 | 45.3 | 59.1 | 28.7 | 15.7 | 80.3 | 11.6 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | | 58.3 | 46.0 | | 119.8 | 45.3 | 59.1 | 28.7 | 15.7 | 80.3 | 11.6 | |
| LOS | | E | D | | F | D | E | C | B | F | B | |
| Approach Delay | | 54.2 | | | 109.0 | | | 28.3 | | | 12.9 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | | D | | | F | | | C | | | B | |
| Queue Length 50th (ft) | | 7 | 3 | | 104 | 14 | 13 | 593 | 50 | 39 | 335 | |
| Queue Length 95th (ft) | | 25 | 14 | | #224 | 37 | m18 | 647 | m66 | m49 | 373 | |
| Internal Link Dist (ft) | | 184 | | | 596 | | | 3488 | | | 1153 | |
| Turn Bay Length (ft) | | | | | | | 200 | | 350 | 450 | | |
| Base Capacity (vph) | | 206 | 339 | | 123 | 337 | 81 | 2425 | 1007 | 96 | 2533 | |
| Starvation Cap Reductn | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | | 0.04 | 0.01 | | 0.86 | 0.05 | 0.17 | 0.62 | 0.08 | 0.44 | 0.89 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 150 | | | |
| Actuated Cycle Length: 150 | | | |
| Offset: 136 (91%), Referenced to phase 2:NBT and 6:SBT, Start of Green | | | |
| Natural Cycle: 110 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.89 | | | |
| Intersection Signal Delay: 22.0 | | Intersection LOS: C | |
| Intersection Capacity Utilization 85.5% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: US 321 & Alex Lee Blvd

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 4 | 1552 | 4 | 0 | 2345 |
| Future Volume (vph) | 0 | 4 | 1552 | 4 | 0 | 2345 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 |
| Frt | | 0.865 | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1611 | 3505 | 0 | 0 | 3505 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1611 | 3505 | 0 | 0 | 3505 |
| Link Speed (mph) | 35 | | 55 | | | 55 |
| Link Distance (ft) | 444 | | 1233 | | | 1822 |
| Travel Time (s) | 8.6 | | 15.3 | | | 22.6 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 3% | 3% | 3% |
| Adj. Flow (vph) | 0 | 4 | 1724 | 4 | 0 | 2606 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 4 | 1728 | 0 | 0 | 2606 |
| Sign Control | Stop | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 68.2% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

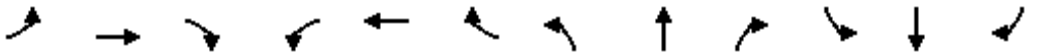
| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 4 | 1552 | 4 | 0 | 2345 |
| Future Vol, veh/h | 0 | 4 | 1552 | 4 | 0 | 2345 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Free | - | None |
| Storage Length | - | 0 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 0 | 4 | 1724 | 4 | 0 | 2606 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 862 | 0 | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | 6.94 | - | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | 3.32 | - | - | - | - |
| Pot Cap-1 Maneuver | 0 | 298 | - | 0 | 0 | - |
| Stage 1 | 0 | - | - | 0 | 0 | - |
| Stage 2 | 0 | - | - | 0 | 0 | - |
| Platoon blocked, % | | | - | | | - |
| Mov Cap-1 Maneuver | - | 298 | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 17.3 | 0 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBT | WBLn1 | SBT |
|---|---|---|---|
| Capacity (veh/h) | - | 298 | - |
| HCM Lane V/C Ratio | - | 0.015 | - |
| HCM Control Delay (s) | - | 17.3 | - |
| HCM Lane LOS | - | C | - |
| HCM 95th %tile Q(veh) | - | 0 | - |

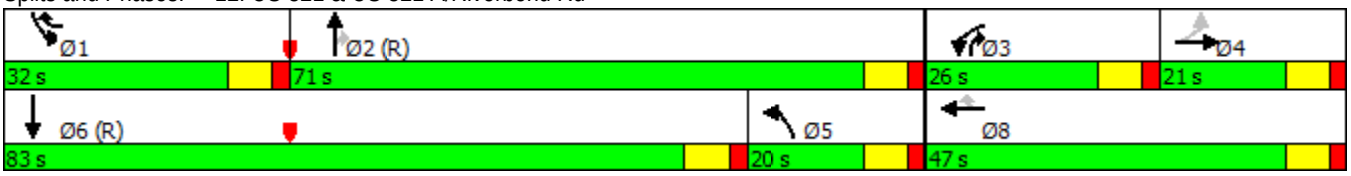


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 8 | 164 | 177 | 401 | 171 | 376 | 119 | 937 | 260 | 389 | 1492 | 8 |
| Future Volume (vph) | 8 | 164 | 177 | 401 | 171 | 376 | 119 | 937 | 260 | 389 | 1492 | 8 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 200 | | 100 | 0 | | 0 | 250 | | 200 | 350 | | 200 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 1 | | 1 | 2 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 200 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1752 | 1845 | 1568 | 3433 | 1863 | 1583 | 1736 | 3471 | 1553 | 3367 | 3471 | 1553 |
| Flt Permitted | 0.638 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1177 | 1845 | 1568 | 3433 | 1863 | 1583 | 1736 | 3471 | 1553 | 3367 | 3471 | 1553 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 55 | | | 55 | |
| Link Distance (ft) | | 491 | | | 484 | | | 1822 | | | 1161 | |
| Travel Time (s) | | 9.6 | | | 9.4 | | | 22.6 | | | 14.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 2% | 2% | 2% | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 9 | 182 | 197 | 446 | 190 | 418 | 132 | 1041 | 289 | 432 | 1658 | 9 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 9 | 182 | 197 | 446 | 190 | 418 | 132 | 1041 | 289 | 432 | 1658 | 9 |
| Turn Type | Perm | NA | Free | Prot | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | Free |
| Protected Phases | | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | |
| Permitted Phases | 4 | | Free | | | 8 | | | 2 | | | Free |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 14.0 | 7.0 | 7.0 | 14.0 | |
| Minimum Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | 14.0 | 14.0 | 21.0 | 14.0 | 14.0 | 21.0 | |
| Total Split (s) | 21.0 | 21.0 | | 26.0 | 47.0 | 32.0 | 20.0 | 71.0 | 26.0 | 32.0 | 83.0 | |
| Total Split (%) | 14.0% | 14.0% | | 17.3% | 31.3% | 21.3% | 13.3% | 47.3% | 17.3% | 21.3% | 55.3% | |
| Maximum Green (s) | 14.0 | 14.0 | | 19.0 | 40.0 | 25.0 | 13.0 | 64.0 | 19.0 | 25.0 | 76.0 | |
| Yellow Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | -2.0 | | -2.0 | -2.0 | -2.0 | 0.0 | 0.0 | -2.0 | -2.0 | 0.0 | |
| Total Lost Time (s) | 7.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 7.0 | 7.0 | 5.0 | 5.0 | 7.0 | |
| Lead/Lag | Lag | Lag | | Lead | | Lead | Lag | Lag | Lead | Lead | Lead | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | Yes | Yes | Yes | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | None | None | C-Min | None | None | C-Min | |
| Act Effct Green (s) | 14.5 | 16.5 | 150.0 | 21.3 | 42.8 | 73.1 | 12.9 | 64.9 | 93.2 | 25.3 | 75.3 | 150.0 |
| Actuated g/C Ratio | 0.10 | 0.11 | 1.00 | 0.14 | 0.29 | 0.49 | 0.09 | 0.43 | 0.62 | 0.17 | 0.50 | 1.00 |
| v/c Ratio | 0.08 | 0.90 | 0.13 | 0.91 | 0.36 | 0.54 | 0.89 | 0.69 | 0.30 | 0.76 | 0.95 | 0.01 |
| Control Delay | 64.1 | 107.2 | 0.2 | 87.2 | 45.4 | 29.9 | 93.7 | 21.4 | 10.8 | 68.7 | 48.6 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 64.1 | 107.2 | 0.2 | 87.2 | 45.4 | 29.9 | 93.7 | 21.4 | 10.8 | 68.7 | 48.6 | 0.0 |
| LOS | E | F | A | F | D | C | F | C | B | E | D | A |
| Approach Delay | | 51.9 | | | 56.9 | | | 25.8 | | | 52.5 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | | D | | | E | | | C | | | D | |
| Queue Length 50th (ft) | 8 | 180 | 0 | 225 | 150 | 276 | 120 | 179 | 77 | 207 | 789 | 0 |
| Queue Length 95th (ft) | 28 | #332 | 0 | #327 | 225 | 382 | #257 | 260 | 98 | 269 | #968 | 0 |
| Internal Link Dist (ft) | | 411 | | | 404 | | | 1742 | | | 1081 | |
| Turn Bay Length (ft) | 200 | | 100 | | | | 250 | | 200 | 350 | | 200 |
| Base Capacity (vph) | 113 | 202 | 1568 | 488 | 531 | 789 | 150 | 1501 | 965 | 606 | 1758 | 1553 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.08 | 0.90 | 0.13 | 0.91 | 0.36 | 0.53 | 0.88 | 0.69 | 0.30 | 0.71 | 0.94 | 0.01 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 150 | | | |
| Actuated Cycle Length: 150 | | | |
| Offset: 8 (5%), Referenced to phase 2:NBT and 6:SBT, Start of Green | | | |
| Natural Cycle: 100 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.95 | | | |
| Intersection Signal Delay: 45.6 | | Intersection LOS: D | |
| Intersection Capacity Utilization 87.9% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |

Splits and Phases: 12: US 321 & US 321 A/Riverbend Rd



## Summary of All Intervals

| Run Number | 1 | 10 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| Start Time | 6:50 | 6:50 | 6:50 | 6:50 | 6:50 | 6:50 | 6:50 |
| End Time | 8:00 | 8:00 | 8:00 | 8:00 | 8:00 | 8:00 | 8:00 |
| Total Time (min) | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| Time Recorded (min) | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Vehs Entered | 9603 | 9496 | 9536 | 9321 | 9606 | 9387 | 9539 |
| Vehs Exited | 9406 | 9422 | 9315 | 9081 | 9301 | 9193 | 9339 |
| Starting Vehs | 881 | 868 | 814 | 776 | 796 | 797 | 778 |
| Ending Vehs | 1078 | 942 | 1035 | 1016 | 1101 | 991 | 978 |
| Denied Entry Before | 22 | 9 | 1 | 42 | 26 | 8 | 10 |
| Denied Entry After | 233 | 289 | 208 | 326 | 342 | 267 | 300 |
| Travel Distance (mi) | 20256 | 20100 | 19884 | 19295 | 19929 | 19858 | 19700 |
| Travel Time (hr) | 1124.4 | 1126.4 | 1034.4 | 1033.0 | 1163.9 | 1057.9 | 1073.8 |
| Total Delay (hr) | 678.3 | 683.5 | 596.6 | 607.7 | 724.1 | 619.8 | 638.2 |
| Total Stops | 20857 | 19963 | 18876 | 17051 | 20186 | 19361 | 18213 |
| Fuel Used (gal) | 825.3 | 820.7 | 797.6 | 779.2 | 825.3 | 798.6 | 800.8 |

## Summary of All Intervals

| Run Number | 7 | 8 | 9 | Avg |
|---|---|---|---|---|
| Start Time | 6:50 | 6:50 | 6:50 | 6:50 |
| End Time | 8:00 | 8:00 | 8:00 | 8:00 |
| Total Time (min) | 70 | 70 | 70 | 70 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 9349 | 9408 | 9600 | 9480 |
| Vehs Exited | 9192 | 9227 | 9316 | 9280 |
| Starting Vehs | 755 | 793 | 781 | 791 |
| Ending Vehs | 912 | 974 | 1065 | 1004 |
| Denied Entry Before | 16 | 33 | 48 | 19 |
| Denied Entry After | 270 | 268 | 306 | 277 |
| Travel Distance (mi) | 19530 | 19672 | 19868 | 19809 |
| Travel Time (hr) | 1051.6 | 1103.9 | 1126.1 | 1089.5 |
| Total Delay (hr) | 620.4 | 669.8 | 687.4 | 652.6 |
| Total Stops | 18105 | 19719 | 19013 | 19136 |
| Fuel Used (gal) | 791.4 | 807.2 | 819.4 | 806.5 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 6:50 |
| End Time | 7:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:00 |
| End Time | 8:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 10 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| Vehs Entered | 9603 | 9496 | 9536 | 9321 | 9606 | 9387 | 9539 |
| Vehs Exited | 9406 | 9422 | 9315 | 9081 | 9301 | 9193 | 9339 |
| Starting Vehs | 881 | 868 | 814 | 776 | 796 | 797 | 778 |
| Ending Vehs | 1078 | 942 | 1035 | 1016 | 1101 | 991 | 978 |
| Denied Entry Before | 22 | 9 | 1 | 42 | 26 | 8 | 10 |
| Denied Entry After | 233 | 289 | 208 | 326 | 342 | 267 | 300 |
| Travel Distance (mi) | 20256 | 20100 | 19884 | 19295 | 19929 | 19858 | 19700 |
| Travel Time (hr) | 1124.4 | 1126.4 | 1034.4 | 1033.0 | 1163.9 | 1057.9 | 1073.8 |
| Total Delay (hr) | 678.3 | 683.5 | 596.6 | 607.7 | 724.1 | 619.8 | 638.2 |
| Total Stops | 20857 | 19963 | 18876 | 17051 | 20186 | 19361 | 18213 |
| Fuel Used (gal) | 825.3 | 820.7 | 797.6 | 779.2 | 825.3 | 798.6 | 800.8 |

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:00 |
| End Time | 8:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 7 | 8 | 9 | Avg |
|---|---|---|---|---|
| Vehs Entered | 9349 | 9408 | 9600 | 9480 |
| Vehs Exited | 9192 | 9227 | 9316 | 9280 |
| Starting Vehs | 755 | 793 | 781 | 791 |
| Ending Vehs | 912 | 974 | 1065 | 1004 |
| Denied Entry Before | 16 | 33 | 48 | 19 |
| Denied Entry After | 270 | 268 | 306 | 277 |
| Travel Distance (mi) | 19530 | 19672 | 19868 | 19809 |
| Travel Time (hr) | 1051.6 | 1103.9 | 1126.1 | 1089.5 |
| Total Delay (hr) | 620.4 | 669.8 | 687.4 | 652.6 |
| Total Stops | 18105 | 19719 | 19013 | 19136 |
| Fuel Used (gal) | 791.4 | 807.2 | 819.4 | 806.5 |

## Total Network Performance By Run

| Run Number | 1 | 10 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| Denied Delay (hr) | 126.3 | 140.4 | 94.6 | 158.5 | 178.1 | 112.1 | 150.1 |
| Denied Del/Veh (s) | 46.2 | 51.7 | 34.9 | 59.2 | 64.5 | 41.8 | 54.9 |
| Total Delay (hr) | 552.0 | 543.1 | 502.1 | 449.2 | 546.0 | 507.7 | 488.1 |
| Total Del/Veh (s) | 189.6 | 188.6 | 174.6 | 160.1 | 189.0 | 179.5 | 170.3 |
| Stop Delay (hr) | 310.9 | 306.1 | 283.9 | 254.5 | 308.7 | 292.4 | 279.9 |
| Stop Del/Veh (s) | 106.8 | 106.3 | 98.8 | 90.7 | 106.8 | 103.4 | 97.7 |
| Total Stops | 20857 | 19963 | 18876 | 17051 | 20186 | 19361 | 18213 |
| Stop/Veh | 1.99 | 1.93 | 1.82 | 1.69 | 1.94 | 1.90 | 1.77 |
| Travel Dist (mi) | 20255.9 | 20099.8 | 19883.7 | 19294.7 | 19928.6 | 19858.0 | 19700.4 |
| Travel Time (hr) | 1124.4 | 1126.4 | 1034.4 | 1033.0 | 1163.9 | 1057.9 | 1073.8 |
| Avg Speed (mph) | 20 | 20 | 21 | 22 | 20 | 21 | 21 |
| Vehicles Entered | 9603 | 9496 | 9536 | 9321 | 9606 | 9387 | 9539 |
| Vehicles Exited | 9406 | 9422 | 9315 | 9081 | 9301 | 9193 | 9339 |
| Hourly Exit Rate | 9406 | 9422 | 9315 | 9081 | 9301 | 9193 | 9339 |
| Input Volume | 66558 | 66558 | 66558 | 66558 | 66558 | 66558 | 66558 |
| % of Volume | 14 | 14 | 14 | 14 | 14 | 14 | 14 |
| Denied Entry Before | 22 | 9 | 1 | 42 | 26 | 8 | 10 |
| Denied Entry After | 233 | 289 | 208 | 326 | 342 | 267 | 300 |

## Total Network Performance By Run

| Run Number | 7 | 8 | 9 | Avg |
|---|---|---|---|---|
| Denied Delay (hr) | 140.2 | 139.6 | 154.1 | 139.4 |
| Denied Del/Veh (s) | 52.5 | 51.9 | 56.0 | 51.4 |
| Total Delay (hr) | 480.1 | 530.3 | 533.3 | 513.2 |
| Total Del/Veh (s) | 171.1 | 187.1 | 185.0 | 179.6 |
| Stop Delay (hr) | 277.1 | 311.0 | 319.0 | 294.3 |
| Stop Del/Veh (s) | 98.7 | 109.7 | 110.6 | 103.0 |
| Total Stops | 18105 | 19719 | 19013 | 19136 |
| Stop/Veh | 1.79 | 1.93 | 1.83 | 1.86 |
| Travel Dist (mi) | 19529.8 | 19672.2 | 19867.6 | 19809.1 |
| Travel Time (hr) | 1051.6 | 1103.9 | 1126.1 | 1089.5 |
| Avg Speed (mph) | 21 | 20 | 20 | 21 |
| Vehicles Entered | 9349 | 9408 | 9600 | 9480 |
| Vehicles Exited | 9192 | 9227 | 9316 | 9280 |
| Hourly Exit Rate | 9192 | 9227 | 9316 | 9280 |
| Input Volume | 66558 | 66558 | 66558 | 66558 |
| % of Volume | 14 | 14 | 14 | 14 |
| Denied Entry Before | 16 | 33 | 48 | 19 |
| Denied Entry After | 270 | 268 | 306 | 277 |

## Intersection: 1: US 321 & 13th Street SW

| Movement | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | NB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | LT | TR | L | L | T | R | L | T | T | R | L |
| Maximum Queue (ft) | 175 | 213 | 140 | 139 | 172 | 79 | 42 | 98 | 489 | 502 | 11 | 210 |
| Average Queue (ft) | 56 | 116 | 33 | 19 | 88 | 21 | 2 | 15 | 294 | 302 | 0 | 88 |
| 95th Queue (ft) | 145 | 192 | 99 | 87 | 156 | 60 | 24 | 80 | 439 | 454 | 8 | 164 |
| Link Distance (ft) | | 409 | 409 | | 504 | 504 | | | 2831 | 2831 | | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 300 | | | 150 | | | 200 | 200 | | | 1000 | 250 |
| Storage Blk Time (%) | | | | 0 | 1 | | | | 18 | | | |
| Queuing Penalty (veh) | | | | 0 | 1 | | | | 2 | | | |

## Intersection: 1: US 321 & 13th Street SW

| Movement | SB | SB | SB |
|---|---|---|---|
| Directions Served | T | T | T |
| Maximum Queue (ft) | 342 | 356 | 333 |
| Average Queue (ft) | 90 | 93 | 80 |
| 95th Queue (ft) | 232 | 238 | 216 |
| Link Distance (ft) | 1853 | 1853 | |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | 400 |
| Storage Blk Time (%) | 2 | 0 | 0 |
| Queuing Penalty (veh) | 2 | 2 | 2 |

## Intersection: 2: US 321 & Main Avenue Drive NW

| Movement | EB | WB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | TR | L | T | TR |
| Maximum Queue (ft) | 854 | 362 | 144 | 6 | 67 | 8 | 162 |
| Average Queue (ft) | 520 | 159 | 52 | 0 | 13 | 0 | 6 |
| 95th Queue (ft) | 987 | 385 | 112 | 3 | 44 | 6 | 106 |
| Link Distance (ft) | 841 | 788 | | 1853 | | 1020 | 1020 |
| Upstream Blk Time (%) | 25 | | | | | | |
| Queuing Penalty (veh) | 0 | | | | | | |
| Storage Bay Dist (ft) | | | 200 | | 150 | | |
| Storage Blk Time (%) | | | 0 | | | | |
| Queuing Penalty (veh) | | | 0 | | | | |

## Intersection: 3: US 321 & 2nd Avenue NW

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | LT | TR | L | T | T | R | L | T | TR |
| Maximum Queue (ft) | 394 | 570 | 259 | 216 | 349 | 632 | 611 | 399 | 500 | 1166 | 1197 |
| Average Queue (ft) | 101 | 364 | 168 | 115 | 159 | 218 | 219 | 37 | 209 | 760 | 782 |
| 95th Queue (ft) | 374 | 643 | 257 | 211 | 310 | 458 | 453 | 187 | 537 | 1266 | 1295 |
| Link Distance (ft) | 570 | 570 | 258 | 258 | | 1020 | 1020 | | | 2420 | 2420 |
| Upstream Blk Time (%) | 2 | 11 | 2 | 0 | | | | | | | |
| Queuing Penalty (veh) | 0 | 0 | 0 | 0 | | | | | | | |
| Storage Bay Dist (ft) | | | | | 250 | | | 500 | 400 | | |
| Storage Blk Time (%) | | | | | 5 | 6 | 1 | | | 29 | |
| Queuing Penalty (veh) | | | | | 35 | 8 | 2 | | | 28 | |

## Intersection: 4: US 321 & 7th Avenue NW

| Movement | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | LTR | L | TR | L | T | T | R | L | T | TR |
| Maximum Queue (ft) | 183 | 102 | 138 | 185 | 509 | 516 | 276 | 83 | 704 | 708 |
| Average Queue (ft) | 81 | 41 | 94 | 73 | 170 | 180 | 24 | 9 | 302 | 321 |
| 95th Queue (ft) | 158 | 88 | 140 | 153 | 393 | 407 | 132 | 54 | 595 | 611 |
| Link Distance (ft) | 356 | | 94 | | 2420 | 2420 | | | 967 | 967 |
| Upstream Blk Time (%) | | 3 | 23 | | | | | | 0 | 0 |
| Queuing Penalty (veh) | | 0 | 0 | | | | | | 1 | 1 |
| Storage Bay Dist (ft) | | 150 | | 100 | | | 200 | 150 | | |
| Storage Blk Time (%) | | 3 | 23 | 6 | 10 | 6 | | | 15 | |
| Queuing Penalty (veh) | | 4 | 13 | 45 | 7 | 3 | | | 1 | |

## Intersection: 5: US 321 & 9th Avenue NW

| Movement | EB | EB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | L | T | TR | L | T | TR |
| Maximum Queue (ft) | 129 | 127 | 158 | 170 | 243 | 506 | 534 | 172 | 800 | 822 |
| Average Queue (ft) | 56 | 42 | 60 | 66 | 123 | 192 | 189 | 56 | 262 | 277 |
| 95th Queue (ft) | 109 | 98 | 124 | 137 | 235 | 427 | 439 | 127 | 603 | 621 |
| Link Distance (ft) | | 297 | | 302 | | 967 | 967 | | 874 | 874 |
| Upstream Blk Time (%) | | | | 0 | | | | | 0 | 0 |
| Queuing Penalty (veh) | | | | 0 | | | | | 2 | 3 |
| Storage Bay Dist (ft) | 300 | | 150 | | 150 | | | 100 | | |
| Storage Blk Time (%) | | | 1 | 1 | 9 | 10 | | 5 | 20 | |
| Queuing Penalty (veh) | | | 0 | 1 | 58 | 13 | | 39 | 9 | |

## Intersection: 6: US 321 & Clement Boulevard

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | LT | R | L | LT | R | L | T | T | R | L | L |
| Maximum Queue (ft) | 288 | 326 | 112 | 342 | 410 | 436 | 499 | 840 | 850 | 350 | 174 | 308 |
| Average Queue (ft) | 153 | 215 | 37 | 153 | 334 | 404 | 118 | 627 | 637 | 93 | 90 | 114 |
| 95th Queue (ft) | 292 | 323 | 88 | 334 | 494 | 420 | 412 | 903 | 915 | 348 | 154 | 224 |
| Link Distance (ft) | | 850 | 850 | | 385 | 385 | | 874 | 874 | | | |
| Upstream Blk Time (%) | | | | 0 | 17 | 84 | | 2 | 2 | | | |
| Queuing Penalty (veh) | | | | 0 | 0 | 0 | | 12 | 13 | | | |
| Storage Bay Dist (ft) | 600 | | | 300 | | | 400 | | | 250 | 600 | 600 |
| Storage Blk Time (%) | | | | 0 | 9 | | | 38 | 47 | | | |
| Queuing Penalty (veh) | | | | 1 | 6 | | | 15 | 29 | | | |

## Intersection: 6: US 321 & Clement Boulevard

| Movement | SB | SB |
|---|---|---|
| Directions Served | T | TR |
| Maximum Queue (ft) | 625 | 658 |
| Average Queue (ft) | 260 | 280 |
| 95th Queue (ft) | 488 | 510 |
| Link Distance (ft) | 964 | 964 |
| Upstream Blk Time (%) | 0 | 0 |
| Queuing Penalty (veh) | 0 | 0 |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | 0 | |
| Queuing Penalty (veh) | 1 | |

## Intersection: 7: US 321 & 13th Avenue Drive NW

| Movement | EB | NB | SB | SB |
|---|---|---|---|---|
| Directions Served | R | L | T | TR |
| Maximum Queue (ft) | 134 | 24 | 49 | 47 |
| Average Queue (ft) | 44 | 4 | 3 | 3 |
| 95th Queue (ft) | 100 | 18 | 36 | 38 |
| Link Distance (ft) | 196 | | 1656 | 1656 |
| Upstream Blk Time (%) | 0 | | | |
| Queuing Penalty (veh) | 0 | | | |
| Storage Bay Dist (ft) | | 200 | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 8: US 321 & 20th Avenue NW/15th Avenue NW/14th Avenue NW

| Movement | EB | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | R | LT | R | L | T | T | R | L | T | T |
| Maximum Queue (ft) | 54 | 33 | 41 | 150 | 148 | 228 | 755 | 774 | 250 | 590 | 583 | 580 |
| Average Queue (ft) | 11 | 7 | 6 | 21 | 42 | 23 | 358 | 373 | 30 | 326 | 217 | 227 |
| 95th Queue (ft) | 37 | 25 | 23 | 80 | 113 | 123 | 659 | 675 | 144 | 542 | 511 | 511 |
| Link Distance (ft) | | 546 | | 415 | | | 1656 | 1656 | | | 3294 | 3294 |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 250 | | 250 | | 100 | 300 | | | 150 | 900 | | |
| Storage Blk Time (%) | | | | 1 | 3 | | 17 | 36 | | | | 8 |
| Queuing Penalty (veh) | | | | 1 | 1 | | 2 | 8 | | | | 3 |

## Intersection: 8: US 321 & 20th Avenue NW/15th Avenue NW/14th Avenue NW

| Movement | SB | B54 | B54 |
|---|---|---|---|
| Directions Served | R | T | T |
| Maximum Queue (ft) | 194 | 116 | 121 |
| Average Queue (ft) | 14 | 4 | 4 |
| 95th Queue (ft) | 103 | 115 | 119 |
| Link Distance (ft) | | 1174 | 1174 |
| Upstream Blk Time (%) | | | 0 |
| Queuing Penalty (veh) | | | 0 |
| Storage Bay Dist (ft) | 200 | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 9: US 321 & Grace Chapel Road

| Movement | WB | WB | WB | NB | NB | NB | NB | B54 | B54 | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | R | U | T | T | R | T | T | L | T | T |
| Maximum Queue (ft) | 345 | 484 | 273 | 32 | 966 | 990 | 400 | 298 | 307 | 247 | 813 | 828 |
| Average Queue (ft) | 245 | 289 | 48 | 4 | 238 | 258 | 58 | 10 | 11 | 32 | 452 | 465 |
| 95th Queue (ft) | 361 | 446 | 180 | 20 | 721 | 759 | 288 | 293 | 296 | 148 | 922 | 950 |
| Link Distance (ft) | | 928 | | | 1174 | 1174 | | 3294 | 3294 | | 3473 | 3473 |
| Upstream Blk Time (%) | | | | | 0 | 0 | | | | | | |
| Queuing Penalty (veh) | | | | | 1 | 3 | | | | | | |
| Storage Bay Dist (ft) | 250 | | 250 | 300 | | | 300 | | | 400 | | |
| Storage Blk Time (%) | 12 | 24 | | | 10 | 11 | | | | | 9 | |
| Queuing Penalty (veh) | 31 | 64 | | | 0 | 22 | | | | | 2 | |

## Intersection: 10: US 321 & Alex Lee Blvd

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | LT | R | L | T | T | R | L | T | TR |
| Maximum Queue (ft) | 41 | 42 | 324 | 72 | 129 | 344 | 361 | 69 | 118 | 408 | 444 |
| Average Queue (ft) | 8 | 7 | 132 | 13 | 16 | 102 | 125 | 11 | 32 | 168 | 180 |
| 95th Queue (ft) | 29 | 29 | 261 | 45 | 77 | 289 | 323 | 46 | 87 | 358 | 377 |
| Link Distance (ft) | 217 | 217 | 618 | 618 | | 3473 | 3473 | | | 1153 | 1153 |
| Upstream Blk Time (%) | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | |
| Storage Bay Dist (ft) | | | | | 200 | | | 350 | 450 | | |
| Storage Blk Time (%) | | | | | | 3 | 0 | | | 0 | |
| Queuing Penalty (veh) | | | | | | 0 | 0 | | | 0 | |

## Intersection: 11: US 321 & Pooveys Grove Church Road

| Movement | WB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 33 |
| Average Queue (ft) | 4 |
| 95th Queue (ft) | 21 |
| Link Distance (ft) | 398 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 12: US 321 & US 321 A/Riverbend Rd

| Movement | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | NB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | R | L | L | T | R | L | T | T | R | L |
| Maximum Queue (ft) | 141 | 414 | 200 | 349 | 291 | 201 | 340 | 270 | 419 | 444 | 300 | 279 |
| Average Queue (ft) | 12 | 231 | 136 | 228 | 182 | 103 | 187 | 104 | 195 | 192 | 99 | 164 |
| 95th Queue (ft) | 77 | 424 | 252 | 316 | 267 | 180 | 312 | 211 | 340 | 346 | 234 | 247 |
| Link Distance (ft) | | 435 | | 418 | 418 | 418 | 418 | | 1744 | 1744 | | |
| Upstream Blk Time (%) | | 4 | | 0 | | | 0 | | | | | |
| Queuing Penalty (veh) | | 0 | | 0 | | | 0 | | | | | |
| Storage Bay Dist (ft) | 200 | | 100 | | | | | 250 | | | 200 | 350 |
| Storage Blk Time (%) | | 50 | 15 | | | | | 0 | 5 | 9 | 0 | |
| Queuing Penalty (veh) | | 93 | 25 | | | | | 2 | 6 | 24 | 1 | |

## Intersection: 12: US 321 & US 321 A/Riverbend Rd

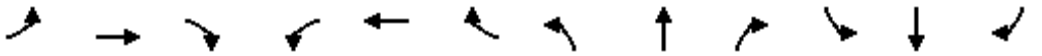
| Movement | SB | SB | SB | SB |
|---|---|---|---|---|
| Directions Served | L | T | T | R |
| Maximum Queue (ft) | 544 | 642 | 624 | 60 |
| Average Queue (ft) | 242 | 413 | 395 | 2 |
| 95th Queue (ft) | 439 | 587 | 574 | 42 |
| Link Distance (ft) | | 1113 | 1113 | |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | 350 | | | 200 |
| Storage Blk Time (%) | 0 | 16 | 28 | |
| Queuing Penalty (veh) | 0 | 62 | 2 | |

## Intersection: 158: Bend

| Movement | SB |
|---|---|
| Directions Served | T |
| Maximum Queue (ft) | 249 |
| Average Queue (ft) | 8 |
| 95th Queue (ft) | 245 |
| Link Distance (ft) | 2831 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Network Summary

Network wide Queuing Penalty: 710



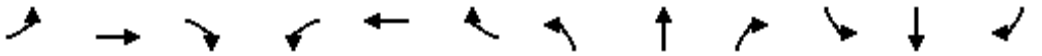
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 91 | 20 | 9 | 104 | 37 | 90 | 16 | 1759 | 98 | 68 | 1407 | 127 |
| Future Volume (vph) | 91 | 20 | 9 | 104 | 37 | 90 | 16 | 1759 | 98 | 68 | 1407 | 127 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 300 | | 0 | 150 | | 200 | 200 | | 1000 | 250 | | 400 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 1 | 1 | | 2 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 0.91 | 0.91 | 0.95 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.91 | 1.00 |
| Frt | | 0.982 | | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | 0.970 | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1564 | 3137 | 0 | 3335 | 1810 | 1538 | 1719 | 3438 | 1538 | 1719 | 4940 | 1538 |
| Flt Permitted | 0.950 | 0.970 | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1564 | 3137 | 0 | 3335 | 1810 | 1538 | 1719 | 3438 | 1538 | 1719 | 4940 | 1538 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 45 | | | 45 | |
| Link Distance (ft) | | 468 | | | 555 | | | 2913 | | | 1957 | |
| Travel Time (s) | | 9.1 | | | 10.8 | | | 44.1 | | | 29.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 101 | 22 | 10 | 116 | 41 | 100 | 18 | 1954 | 109 | 76 | 1563 | 141 |
| Shared Lane Traffic (%) | 50% | | | | | | | | | | | |
| Lane Group Flow (vph) | 50 | 83 | 0 | 116 | 41 | 100 | 18 | 1954 | 109 | 76 | 1563 | 141 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway 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 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | Split | NA | | Split | NA | Free | Prot | NA | Free | Prot | NA | Free |
| Protected Phases | 8 | 8 | | 4 | 4 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | | | | Free | | | Free | | | Free |
| Detector Phase | 8 | 8 | | 4 | 4 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 12.0 | | 7.0 | 12.0 | |
| Minimum Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 14.0 | 19.0 | | 14.0 | 19.0 | |
| Total Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 14.0 | 87.0 | | 15.0 | 88.0 | |
| Total Split (%) | 10.8% | 10.8% | | 10.8% | 10.8% | | 10.8% | 66.9% | | 11.5% | 67.7% | |
| Maximum Green (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 80.0 | | 8.0 | 81.0 | |
| Yellow Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Lead/Lag | | | | | | | Lag | Lead | | Lag | Lead | |
| Lead-Lag Optimize? | | | | | | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | None | C-Min | | None | C-Min | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Act Effct Green (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 130.0 | 13.5 | 80.1 | 130.0 | 7.9 | 82.9 | 130.0 |
| Actuated g/C Ratio | 0.05 | 0.05 | | 0.05 | 0.05 | 1.00 | 0.10 | 0.62 | 1.00 | 0.06 | 0.64 | 1.00 |
| v/c Ratio | 0.60 | 0.49 | | 0.64 | 0.42 | 0.07 | 0.10 | 0.92 | 0.07 | 0.74 | 0.50 | 0.09 |
| Control Delay | 88.0 | 70.2 | | 77.0 | 72.9 | 0.1 | 49.8 | 31.0 | 0.1 | 78.8 | 6.3 | 0.0 |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 88.0 | 70.2 | | 77.0 | 72.9 | 0.1 | 49.8 | 31.0 | 0.1 | 78.8 | 6.3 | 0.0 |
| LOS | F | E | | E | E | A | D | C | A | E | A | A |
| Approach Delay | | 76.9 | | | 46.4 | | | 29.6 | | | 8.9 | |
| Approach LOS | | E | | | D | | | C | | | A | |
| Queue Length 50th (ft) | 46 | 37 | | 50 | 34 | 0 | 15 | 727 | 0 | 65 | 47 | 0 |
| Queue Length 95th (ft) | #110 | 68 | | #88 | 73 | 0 | 37 | 871 | 0 | m73 | m180 | m0 |
| Internal Link Dist (ft) | | 388 | | | 475 | | | 2833 | | | 1877 | |
| Turn Bay Length (ft) | 300 | | | 150 | | 200 | 200 | | 1000 | 250 | | 400 |
| Base Capacity (vph) | 84 | 168 | | 180 | 98 | 1538 | 178 | 2118 | 1538 | 105 | 3396 | 1538 |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.60 | 0.49 | | 0.64 | 0.42 | 0.07 | 0.10 | 0.92 | 0.07 | 0.72 | 0.46 | 0.09 |

## Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 96 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 23.4 Intersection LOS: C
Intersection Capacity Utilization 77.8% ICU Level of Service D
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: US 321 & 13th Street SW



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 41 | 4 | 112 | 21 | 4 | 30 | 66 | 1844 | 13 | 15 | 1485 | 19 |
| Future Volume (vph) | 41 | 4 | 112 | 21 | 4 | 30 | 66 | 1844 | 13 | 15 | 1485 | 19 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 200 | | 0 | 150 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.904 | | | 0.926 | | | 0.999 | | | 0.998 | |
| Flt Protected | | 0.987 | | | 0.981 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1646 | 0 | 0 | 1644 | 0 | 1719 | 3435 | 0 | 1719 | 3431 | 0 |
| Flt Permitted | | 0.987 | | | 0.981 | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 1646 | 0 | 0 | 1644 | 0 | 1719 | 3435 | 0 | 1719 | 3431 | 0 |
| Link Speed (mph) | | 25 | | | 25 | | | 45 | | | 45 | |
| Link Distance (ft) | | 892 | | | 860 | | | 1957 | | | 1105 | |
| Travel Time (s) | | 24.3 | | | 23.5 | | | 29.7 | | | 16.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 46 | 4 | 124 | 23 | 4 | 33 | 73 | 2049 | 14 | 17 | 1650 | 21 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 174 | 0 | 0 | 60 | 0 | 73 | 2063 | 0 | 17 | 1671 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 0 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway 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 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 72.4% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

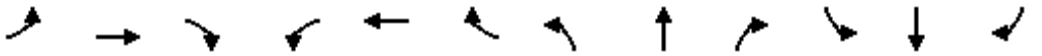
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 41 | 4 | 112 | 21 | 4 | 30 | 66 | 1844 | 13 | 15 | 1485 | 19 |
| Future Vol, veh/h | 41 | 4 | 112 | 21 | 4 | 30 | 66 | 1844 | 13 | 15 | 1485 | 19 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | 200 | - | - | 150 | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 3 | 3 | 3 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Mvmt Flow | 46 | 4 | 124 | 23 | 4 | 33 | 73 | 2049 | 14 | 17 | 1650 | 21 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 2867 | 3904 | 836 | 3064 | 3907 | 1032 | 1671 | 0 | 0 | 2063 | 0 | 0 |
| Stage 1 | 1694 | 1694 | - | 2203 | 2203 | - | - | - | - | - | - | - |
| Stage 2 | 1173 | 2210 | - | 861 | 1704 | - | - | - | - | - | - | - |
| Critical Hdwy | 7.56 | 6.56 | 6.96 | 7.6 | 6.6 | 7 | 4.2 | - | - | 4.2 | - | - |
| Critical Hdwy Stg 1 | 6.56 | 5.56 | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | 6.56 | 5.56 | - | 6.6 | 5.6 | - | - | - | - | - | - | - |
| Follow-up Hdwy | 3.53 | 4.03 | 3.33 | 3.55 | 4.05 | 3.35 | 2.25 | - | - | 2.25 | - | - |
| Pot Cap-1 Maneuver | ~ 7 | ~ 3 | 308 | ~ 5 | ~ 3 | 225 | 367 | - | - | 257 | - | - |
| Stage 1 | 95 | 146 | - | 44 | 78 | - | - | - | - | - | - | - |
| Stage 2 | 202 | 79 | - | 310 | 141 | - | - | - | - | - | - | - |
| Platoon blocked, % | | | | | | | | - | - | | - | - |
| Mov Cap-1 Maneuver | - | ~ 2 | 308 | - | ~ 2 | 225 | 367 | - | - | 257 | - | - |
| Mov Cap-2 Maneuver | - | ~ 2 | - | - | ~ 2 | - | - | - | - | - | - | - |
| Stage 1 | 76 | 136 | - | 35 | 62 | - | - | - | - | - | - | - |
| Stage 2 | 128 | 63 | - | 167 | 132 | - | - | - | - | - | - | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | | | 0.6 | 0.2 |
| HCM LOS | - | - | | |

| Minor Lane/Major Mvmt | NBL | NBT | NBR | EBLn1 | WBLn1 | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 367 | - | - | - | - | 257 | - | - |
| HCM Lane V/C Ratio | 0.2 | - | - | - | - | 0.065 | - | - |
| HCM Control Delay (s) | 17.2 | - | - | - | - | 20 | - | - |
| HCM Lane LOS | C | - | - | - | - | C | - | - |
| HCM 95th %tile Q(veh) | 0.7 | - | - | - | - | 0.2 | - | - |

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



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 97 | 114 | 124 | 115 | 132 | 98 | 96 | 1659 | 76 | 52 | 1333 | 60 |
| Future Volume (vph) | 97 | 114 | 124 | 115 | 132 | 98 | 96 | 1659 | 76 | 52 | 1333 | 60 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 250 | | 500 | 400 | | 0 |
| Storage Lanes | 1 | | 0 | 0 | | 0 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.922 | | | 0.957 | | | | 0.850 | | 0.994 | |
| Flt Protected | 0.950 | | | | 0.984 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1752 | 1701 | 0 | 0 | 3300 | 0 | 1719 | 3438 | 1538 | 1719 | 3417 | 0 |
| Flt Permitted | 0.950 | | | | 0.984 | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1752 | 1701 | 0 | 0 | 3300 | 0 | 1719 | 3438 | 1538 | 1719 | 3417 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 45 | | | 45 | |
| Link Distance (ft) | | 627 | | | 328 | | | 1105 | | | 2513 | |
| Travel Time (s) | | 12.2 | | | 6.4 | | | 16.7 | | | 38.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 3% | 3% | 3% | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 108 | 127 | 138 | 128 | 147 | 109 | 107 | 1843 | 84 | 58 | 1481 | 67 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 108 | 265 | 0 | 0 | 384 | 0 | 107 | 1843 | 84 | 58 | 1548 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway 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 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | Split | NA | | Split | NA | | Prot | NA | pm+ov | Prot | NA | |
| Protected Phases | 8 | 8 | | 4 | 4 | | 5 | 2 | 4 | 1 | 6 | |
| Permitted Phases | | | | | | | | | 2 | | | |
| Detector Phase | 8 | 8 | | 4 | 4 | | 5 | 2 | 4 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 12.0 | 7.0 | 7.0 | 12.0 | |
| Minimum Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 14.0 | 19.0 | 14.0 | 14.0 | 19.0 | |
| Total Split (s) | 25.0 | 25.0 | | 20.0 | 20.0 | | 16.0 | 71.0 | 20.0 | 14.0 | 69.0 | |
| Total Split (%) | 19.2% | 19.2% | | 15.4% | 15.4% | | 12.3% | 54.6% | 15.4% | 10.8% | 53.1% | |
| Maximum Green (s) | 18.0 | 18.0 | | 13.0 | 13.0 | | 9.0 | 64.0 | 13.0 | 7.0 | 62.0 | |
| Yellow Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 7.0 | 7.0 | | | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | |
| Lead/Lag | | | | | | | Lead | Lead | | Lag | Lag | |
| Lead-Lag Optimize? | | | | | | | Yes | Yes | | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | None | C-Min | None | None | C-Min | |

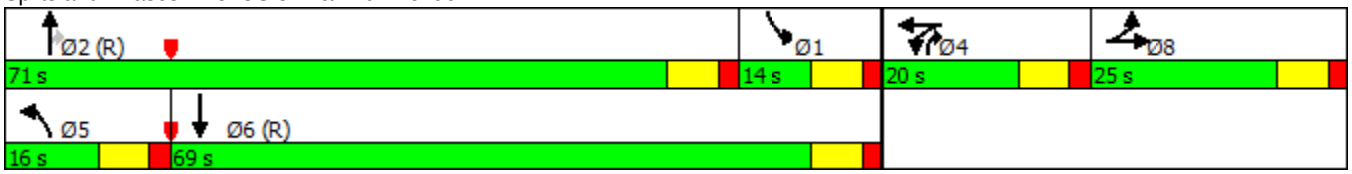
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Act Effct Green (s) | 18.0 | 18.0 | | | 13.4 | | 9.0 | 66.4 | 81.2 | 7.0 | 61.6 | |
| Actuated g/C Ratio | 0.14 | 0.14 | | | 0.10 | | 0.07 | 0.51 | 0.62 | 0.05 | 0.47 | |
| v/c Ratio | 0.45 | 1.13 | | | 1.13 | | 0.90 | 1.05 | 0.09 | 0.63 | 0.96 | |
| Control Delay | 58.0 | 147.3 | | | 140.7 | | 103.2 | 50.5 | 3.7 | 64.0 | 27.5 | |
| Queue Delay | 0.0 | 0.0 | | | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 58.0 | 147.3 | | | 140.7 | | 103.2 | 50.5 | 3.7 | 64.0 | 27.5 | |
| LOS | E | F | | | F | | F | D | A | E | C | |
| Approach Delay | | 121.4 | | | 140.7 | | | 51.3 | | | 28.9 | |
| Approach LOS | | F | | | F | | | D | | | C | |
| Queue Length 50th (ft) | 85 | ~258 | | | ~201 | | 87 | ~922 | 15 | 47 | 464 | |
| Queue Length 95th (ft) | 146 | #433 | | | #307 | | m#113 | #1047 | m16 | m68 | #803 | |
| Internal Link Dist (ft) | | 547 | | | 248 | | | 1025 | | | 2433 | |
| Turn Bay Length (ft) | | | | | | | 250 | | 500 | 400 | | |
| Base Capacity (vph) | 242 | 235 | | | 340 | | 119 | 1756 | 960 | 92 | 1629 | |
| Starvation Cap Reductn | 0 | 0 | | | 0 | | 0 | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | | 0 | | 0 | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | | 0 | | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | 0.45 | 1.13 | | | 1.13 | | 0.90 | 1.05 | 0.09 | 0.63 | 0.95 | |

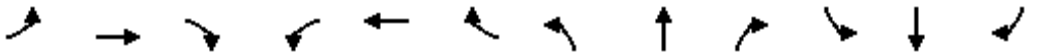
**Intersection Summary**

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 44 (34%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 160
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.13
Intersection Signal Delay: 56.9 Intersection LOS: E
Intersection Capacity Utilization 98.7% ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: US 321 & 2nd Avenue NW





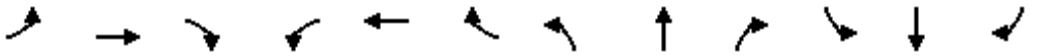
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 16 | 135 | 71 | 45 | 54 | 7 | 36 | 1724 | 58 | 7 | 1393 | 7 |
| Future Volume (vph) | 16 | 135 | 71 | 45 | 54 | 7 | 36 | 1724 | 58 | 7 | 1393 | 7 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 150 | | 0 | 100 | | 200 | 150 | | 0 |
| Storage Lanes | 0 | | 0 | 1 | | 0 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Frt | | 0.957 | | | 0.982 | | | | 0.850 | | 0.999 | |
| Flt Protected | | 0.996 | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1758 | 0 | 1671 | 1728 | 0 | 1719 | 3438 | 1538 | 1736 | 3468 | 0 |
| Flt Permitted | | 0.973 | | 0.329 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 1718 | 0 | 579 | 1728 | 0 | 1719 | 3438 | 1538 | 1736 | 3468 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 45 | | | 45 | |
| Link Distance (ft) | | 406 | | | 154 | | | 2513 | | | 1038 | |
| Travel Time (s) | | 7.9 | | | 3.0 | | | 38.1 | | | 15.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 8% | 8% | 8% | 5% | 5% | 5% | 4% | 4% | 4% |
| Adj. Flow (vph) | 18 | 150 | 79 | 50 | 60 | 8 | 40 | 1916 | 64 | 8 | 1548 | 8 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 247 | 0 | 50 | 68 | 0 | 40 | 1916 | 64 | 8 | 1556 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway 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 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | Perm | NA | | Perm | NA | | Prot | NA | Perm | Prot | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | 2 | | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 12.0 | 12.0 | 7.0 | 12.0 | |
| Minimum Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 14.0 | 19.0 | 19.0 | 14.0 | 19.0 | |
| Total Split (s) | 30.0 | 30.0 | | 30.0 | 30.0 | | 14.0 | 86.0 | 86.0 | 14.0 | 86.0 | |
| Total Split (%) | 23.1% | 23.1% | | 23.1% | 23.1% | | 10.8% | 66.2% | 66.2% | 10.8% | 66.2% | |
| Maximum Green (s) | 23.0 | 23.0 | | 23.0 | 23.0 | | 7.0 | 79.0 | 79.0 | 7.0 | 79.0 | |
| Yellow Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | |
| Lead/Lag | | | | | | | Lag | Lead | Lead | Lag | Lead | |
| Lead-Lag Optimize? | | | | | | | Yes | Yes | Yes | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | None | C-Min | C-Min | None | C-Min | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Act Effct Green (s) | | 22.5 | | 22.5 | 22.5 | | 7.8 | 90.7 | 90.7 | 7.0 | 81.5 | |
| Actuated g/C Ratio | | 0.17 | | 0.17 | 0.17 | | 0.06 | 0.70 | 0.70 | 0.05 | 0.63 | |
| v/c Ratio | | 0.83 | | 0.50 | 0.23 | | 0.39 | 0.80 | 0.06 | 0.09 | 0.72 | |
| Control Delay | | 74.7 | | 66.2 | 47.5 | | 61.6 | 25.6 | 13.9 | 62.7 | 6.2 | |
| Queue Delay | | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | | 74.7 | | 66.2 | 47.5 | | 61.6 | 25.6 | 13.9 | 62.7 | 6.2 | |
| LOS | | E | | E | D | | E | C | B | E | A | |
| Approach Delay | | 74.7 | | | 55.4 | | | 26.0 | | | 6.5 | |
| Approach LOS | | E | | | E | | | C | | | A | |
| Queue Length 50th (ft) | | 199 | | 38 | 49 | | 30 | 572 | 28 | 7 | 103 | |
| Queue Length 95th (ft) | | #338 | | 85 | 95 | | m32 | m588 | m34 | m11 | 153 | |
| Internal Link Dist (ft) | | 326 | | | 74 | | | 2433 | | | 958 | |
| Turn Bay Length (ft) | | | | 150 | | | 100 | | 200 | 150 | | |
| Base Capacity (vph) | | 317 | | 107 | 319 | | 102 | 2398 | 1073 | 93 | 2222 | |
| Starvation Cap Reductn | | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | | 0 | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | | 0.78 | | 0.47 | 0.21 | | 0.39 | 0.80 | 0.06 | 0.09 | 0.70 | |

## Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 9 (7%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 22.2 Intersection LOS: C
Intersection Capacity Utilization 78.3% ICU Level of Service D
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: US 321 & 7th Avenue NW



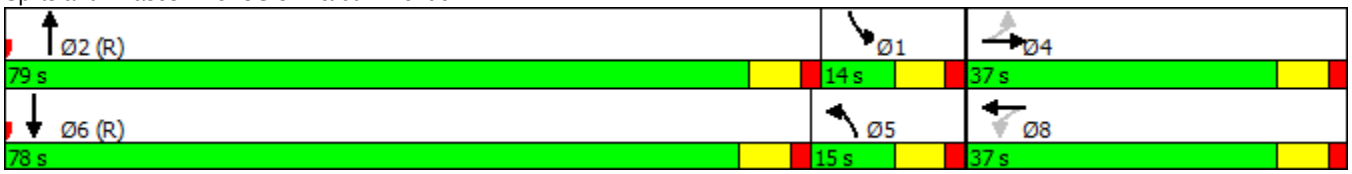
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 216 | 4 | 131 | 39 | 4 | 45 | 39 | 1580 | 56 | 53 | 1299 | 53 |
| Future Volume (vph) | 216 | 4 | 131 | 39 | 4 | 45 | 39 | 1580 | 56 | 53 | 1299 | 53 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 300 | | 0 | 150 | | 0 | 150 | | 0 | 100 | | 0 |
| Storage Lanes | 1 | | 0 | 1 | | 0 | 1 | | 0 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 |
| Ped Bike Factor | 0.84 | | | | | | | | | | | |
| Frt | | 0.854 | | | 0.861 | | | 0.995 | | | 0.994 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1752 | 1575 | 0 | 1736 | 1573 | 0 | 1736 | 3454 | 0 | 1736 | 3450 | 0 |
| Flt Permitted | 0.722 | | | 0.613 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1121 | 1575 | 0 | 1120 | 1573 | 0 | 1736 | 3454 | 0 | 1736 | 3450 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 45 | | | 45 | |
| Link Distance (ft) | | 346 | | | 350 | | | 1038 | | | 963 | |
| Travel Time (s) | | 6.7 | | | 6.8 | | | 15.7 | | | 14.6 | |
| Confl. Peds. (#/hr) | 131 | | | | | | | | | | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 240 | 4 | 146 | 43 | 4 | 50 | 43 | 1756 | 62 | 59 | 1443 | 59 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 240 | 150 | 0 | 43 | 54 | 0 | 43 | 1818 | 0 | 59 | 1502 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway 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 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | Perm | NA | | Perm | NA | | Prot | NA | | Prot | NA | |
| Protected Phases | | 4 | | | 8 | | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | | 8 | | | | | | | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 5 | 2 | | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 12.0 | | 7.0 | 12.0 | |
| Minimum Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | | 14.0 | 19.0 | | 14.0 | 19.0 | |
| Total Split (s) | 37.0 | 37.0 | | 37.0 | 37.0 | | 15.0 | 79.0 | | 14.0 | 78.0 | |
| Total Split (%) | 28.5% | 28.5% | | 28.5% | 28.5% | | 11.5% | 60.8% | | 10.8% | 60.0% | |
| Maximum Green (s) | 30.0 | 30.0 | | 30.0 | 30.0 | | 8.0 | 72.0 | | 7.0 | 71.0 | |
| Yellow Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Lost Time (s) | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Lead/Lag | | | | | | | Lag | Lead | | Lag | Lead | |
| Lead-Lag Optimize? | | | | | | | Yes | Yes | | Yes | Yes | |

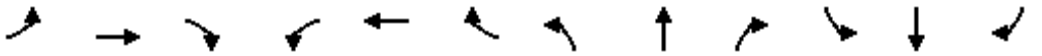
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | | None | C-Min | | None | C-Min | |
| Act Effct Green (s) | 29.3 | 29.3 | | 29.3 | 29.3 | | 9.5 | 75.5 | | 7.0 | 73.1 | |
| Actuated g/C Ratio | 0.23 | 0.23 | | 0.23 | 0.23 | | 0.07 | 0.58 | | 0.05 | 0.56 | |
| v/c Ratio | 0.95 | 0.42 | | 0.17 | 0.15 | | 0.34 | 0.91 | | 0.63 | 0.78 | |
| Control Delay | 95.8 | 47.2 | | 42.3 | 41.3 | | 59.5 | 22.1 | | 66.3 | 9.3 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | | 0.0 | 0.0 | |
| Total Delay | 95.8 | 47.2 | | 42.3 | 41.3 | | 59.5 | 22.1 | | 66.3 | 9.3 | |
| LOS | F | D | | D | D | | E | C | | E | A | |
| Approach Delay | | 77.1 | | | 41.8 | | | 22.9 | | | 11.4 | |
| Approach LOS | | E | | | D | | | C | | | B | |
| Queue Length 50th (ft) | 199 | 108 | | 29 | 37 | | 39 | 281 | | 53 | 98 | |
| Queue Length 95th (ft) | #364 | 176 | | 64 | 74 | | m43 | #914 | | m68 | 126 | |
| Internal Link Dist (ft) | | 266 | | | 270 | | | 958 | | | 883 | |
| Turn Bay Length (ft) | 300 | | | 150 | | | 150 | | | 100 | | |
| Base Capacity (vph) | 258 | 363 | | 258 | 363 | | 129 | 2006 | | 93 | 1983 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | | 0 | 0 | | 0 | 0 | |
| Reduced v/c Ratio | 0.93 | 0.41 | | 0.17 | 0.15 | | 0.33 | 0.91 | | 0.63 | 0.76 | |

**Intersection Summary**

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 124 (95%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 24.2 Intersection LOS: C
Intersection Capacity Utilization 80.8% ICU Level of Service D
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: US 321 & 9th Avenue NW





| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 70 | 137 | 39 | 61 | 82 | 323 | 51 | 1537 | 135 | 660 | 1430 | 86 |
| Future Volume (vph) | 70 | 137 | 39 | 61 | 82 | 323 | 51 | 1537 | 135 | 660 | 1430 | 86 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 600 | | 0 | 300 | | 0 | 400 | | 250 | 600 | | 0 |
| Storage Lanes | 1 | | 1 | 1 | | 1 | 1 | | 1 | 2 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 200 | | |
| Lane Util. Factor | 0.95 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 | 0.97 | 0.95 | 0.95 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | 0.991 | |
| Flt Protected | 0.950 | 0.998 | | 0.950 | 0.996 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1665 | 1749 | 1568 | 1681 | 1763 | 1583 | 1719 | 3438 | 1538 | 3367 | 3440 | 0 |
| Flt Permitted | 0.950 | 0.998 | | 0.950 | 0.996 | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1665 | 1749 | 1568 | 1681 | 1763 | 1583 | 1719 | 3438 | 1538 | 3367 | 3440 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 45 | | | 45 | |
| Link Distance (ft) | | 915 | | | 441 | | | 963 | | | 1050 | |
| Travel Time (s) | | 17.8 | | | 8.6 | | | 14.6 | | | 15.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 2% | 2% | 2% | 5% | 5% | 5% | 4% | 4% | 4% |
| Adj. Flow (vph) | 78 | 152 | 43 | 68 | 91 | 359 | 57 | 1708 | 150 | 733 | 1589 | 96 |
| Shared Lane Traffic (%) | 10% | | | 10% | | | | | | | | |
| Lane Group Flow (vph) | 70 | 160 | 43 | 61 | 98 | 359 | 57 | 1708 | 150 | 733 | 1685 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway 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 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | Split | NA | pm+ov | Split | NA | pm+ov | Prot | NA | Perm | Prot | NA | |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | 12.0 | 7.0 | 12.0 | |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 19.0 | 19.0 | 14.0 | 19.0 | |
| Total Split (s) | 17.0 | 17.0 | 14.0 | 14.0 | 14.0 | 32.0 | 14.0 | 67.0 | 67.0 | 32.0 | 85.0 | |
| Total Split (%) | 13.1% | 13.1% | 10.8% | 10.8% | 10.8% | 24.6% | 10.8% | 51.5% | 51.5% | 24.6% | 65.4% | |
| Maximum Green (s) | 10.0 | 10.0 | 7.0 | 7.0 | 7.0 | 25.0 | 7.0 | 60.0 | 60.0 | 25.0 | 78.0 | |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | |
| Lead/Lag | | | Lag | | | Lead | Lag | Lag | Lag | Lead | Lead | |
| Lead-Lag Optimize? | | | Yes | | | Yes | Yes | Yes | Yes | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | |

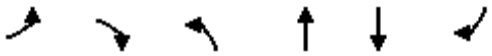
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Act Effct Green (s) | 10.0 | 10.0 | 23.2 | 7.0 | 7.0 | 39.0 | 7.6 | 60.0 | 60.0 | 25.0 | 80.2 | |
| Actuated g/C Ratio | 0.08 | 0.08 | 0.18 | 0.05 | 0.05 | 0.30 | 0.06 | 0.46 | 0.46 | 0.19 | 0.62 | |
| v/c Ratio | 0.55 | 1.19 | 0.15 | 0.68 | 1.04 | 0.76 | 0.57 | 1.08 | 0.21 | 1.13 | 0.79 | |
| Control Delay | 74.3 | 189.2 | 45.9 | 94.8 | 163.2 | 52.9 | 52.2 | 60.7 | 8.9 | 125.6 | 14.6 | |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 74.3 | 189.2 | 45.9 | 94.8 | 163.2 | 52.9 | 52.2 | 60.7 | 8.9 | 125.6 | 14.6 | |
| LOS | E | F | D | F | F | D | D | E | A | F | B | |
| Approach Delay | | 137.2 | | | 78.7 | | | 56.4 | | | 48.3 | |
| Approach LOS | | F | | | E | | | E | | | D | |
| Queue Length 50th (ft) | 61 | ~170 | 31 | 53 | ~93 | 274 | 45 | ~832 | 29 | ~372 | 418 | |
| Queue Length 95th (ft) | 115 | #322 | 66 | #130 | #218 | 396 | m52 | m#970 | m39 | #489 | 563 | |
| Internal Link Dist (ft) | | 835 | | | 361 | | | 883 | | | 970 | |
| Turn Bay Length (ft) | 600 | | | 300 | | | 400 | | 250 | 600 | | |
| Base Capacity (vph) | 128 | 134 | 280 | 90 | 94 | 474 | 100 | 1586 | 709 | 647 | 2138 | |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | 0.55 | 1.19 | 0.15 | 0.68 | 1.04 | 0.76 | 0.57 | 1.08 | 0.21 | 1.13 | 0.79 | |

**Intersection Summary**

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 16 (12%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 180
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.19
Intersection Signal Delay: 59.1 Intersection LOS: E
Intersection Capacity Utilization 97.7% ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: US 321 & Clement Boulevard



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 31 | 4 | 2525 | 1645 | 46 |
| Future Volume (vph) | 0 | 31 | 4 | 2525 | 1645 | 46 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 200 | | | 0 |
| Storage Lanes | 0 | 1 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 0.95 |
| Frt | | 0.865 | | | 0.996 | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 1596 | 1736 | 3471 | 3424 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 1596 | 1736 | 3471 | 3424 | 0 |
| Link Speed (mph) | 35 | | | 45 | 45 | |
| Link Distance (ft) | 250 | | | 1050 | 1732 | |
| Travel Time (s) | 4.9 | | | 15.9 | 26.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 4% | 4% | 5% | 5% |
| Adj. Flow (vph) | 0 | 34 | 4 | 2806 | 1828 | 51 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 34 | 4 | 2806 | 1879 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 0 | | | 24 | 24 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | 15 | | | 9 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 73.1% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

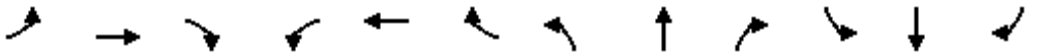
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 31 | 4 | 2525 | 1645 | 46 |
| Future Vol, veh/h | 0 | 31 | 4 | 2525 | 1645 | 46 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | 200 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 3 | 3 | 4 | 4 | 5 | 5 |
| Mvmt Flow | 0 | 34 | 4 | 2806 | 1828 | 51 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 939 | 1879 | 0 | - | 0 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | 6.96 | 4.18 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | 3.33 | 2.24 | - | - | - |
| Pot Cap-1 Maneuver | 0 | 263 | 308 | - | - | - |
| Stage 1 | 0 | - | - | - | - | - |
| Stage 2 | 0 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | - | 263 | 308 | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 20.7 | 0 | 0 |
| HCM LOS | C | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 308 | - | 263 | - | - |
| HCM Lane V/C Ratio | 0.014 | - | 0.131 | - | - |
| HCM Control Delay (s) | 16.9 | - | 20.7 | - | - |
| HCM Lane LOS | C | - | C | - | - |
| HCM 95th %tile Q(veh) | 0 | - | 0.4 | - | - |



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 28 | 8 | 16 | 24 | 8 | 390 | 10 | 2389 | 15 | 165 | 1626 | 12 |
| Future Volume (vph) | 28 | 8 | 16 | 24 | 8 | 390 | 10 | 2389 | 15 | 165 | 1626 | 12 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 250 | | 250 | 0 | | 100 | 300 | | 150 | 900 | | 200 |
| Storage Lanes | 1 | | 1 | 0 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.964 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1719 | 1810 | 1538 | 0 | 1796 | 1583 | 1736 | 3471 | 1553 | 1736 | 3471 | 1553 |
| Flt Permitted | 0.950 | | | | 0.964 | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1719 | 1810 | 1538 | 0 | 1796 | 1583 | 1736 | 3471 | 1553 | 1736 | 3471 | 1553 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 45 | | | 45 | |
| Link Distance (ft) | | 606 | | | 480 | | | 1732 | | | 3358 | |
| Travel Time (s) | | 11.8 | | | 9.4 | | | 26.2 | | | 50.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 2% | 2% | 2% | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 31 | 9 | 18 | 27 | 9 | 433 | 11 | 2654 | 17 | 183 | 1807 | 13 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 31 | 9 | 18 | 0 | 36 | 433 | 11 | 2654 | 17 | 183 | 1807 | 13 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 12 | | | 12 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway 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 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | Split | NA | pm+ov | Split | NA | pm+ov | Prot | NA | Perm | Prot | NA | Perm |
| Protected Phases | 4 | 4 | 5 | 8 | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | | | 4 | | | 8 | | | 2 | | | 6 |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | 6 |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 12.0 | 12.0 | 7.0 | 12.0 | 12.0 |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 19.0 | 19.0 | 14.0 | 19.0 | 19.0 |
| Total Split (s) | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 25.0 | 14.0 | 77.0 | 77.0 | 25.0 | 88.0 | 88.0 |
| Total Split (%) | 10.8% | 10.8% | 10.8% | 10.8% | 10.8% | 19.2% | 10.8% | 59.2% | 59.2% | 19.2% | 67.7% | 67.7% |
| Maximum Green (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 18.0 | 7.0 | 70.0 | 70.0 | 18.0 | 81.0 | 81.0 |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Lost Time (s) | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| Lead/Lag | | | Lead | | | Lag | Lead | Lead | Lead | Lag | Lag | Lag |
| Lead-Lag Optimize? | | | Yes | | | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | C-Min |

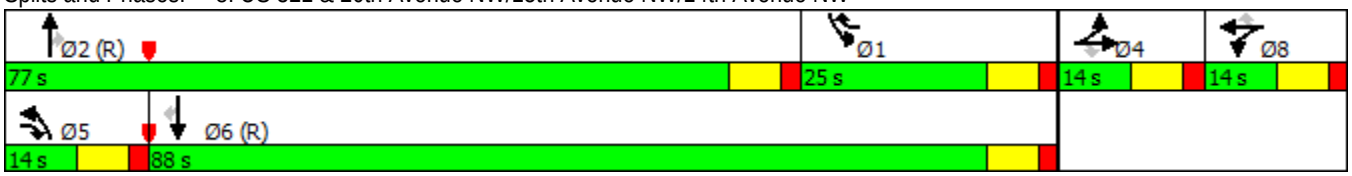
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Act Effct Green (s) | 7.0 | 7.0 | 11.2 | | 7.0 | 22.2 | 7.0 | 81.2 | 81.2 | 18.0 | 100.6 | 100.6 |
| Actuated g/C Ratio | 0.05 | 0.05 | 0.09 | | 0.05 | 0.17 | 0.05 | 0.62 | 0.62 | 0.14 | 0.77 | 0.77 |
| v/c Ratio | 0.34 | 0.09 | 0.14 | | 0.38 | 1.60 | 0.12 | 1.22 | 0.02 | 0.76 | 0.67 | 0.01 |
| Control Delay | 69.5 | 60.8 | 40.6 | | 70.9 | 319.3 | 75.8 | 121.4 | 6.9 | 63.2 | 11.0 | 7.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 69.5 | 60.8 | 40.6 | | 70.9 | 319.3 | 75.8 | 121.4 | 6.9 | 63.2 | 11.0 | 7.4 |
| LOS | E | E | D | | E | F | E | F | A | E | B | A |
| Approach Delay | | 59.2 | | | 300.2 | | | 120.5 | | | 15.7 | |
| Approach LOS | | E | | | F | | | F | | | B | |
| Queue Length 50th (ft) | 26 | 7 | 11 | | 30 | ~413 | 10 | ~1575 | 4 | 137 | 406 | 4 |
| Queue Length 95th (ft) | 60 | 26 | 32 | | 67 | #620 | m15 | m#1517 | m5 | m#254 | 513 | m3 |
| Internal Link Dist (ft) | | 526 | | | 400 | | | 1652 | | | 3278 | |
| Turn Bay Length (ft) | 250 | | 250 | | | 100 | 300 | | 150 | 900 | | 200 |
| Base Capacity (vph) | 92 | 97 | 132 | | 96 | 270 | 93 | 2168 | 970 | 240 | 2686 | 1201 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.34 | 0.09 | 0.14 | | 0.38 | 1.60 | 0.12 | 1.22 | 0.02 | 0.76 | 0.67 | 0.01 |

## Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 62 (48%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 180
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.60
Intersection Signal Delay: 95.7 Intersection LOS: F
Intersection Capacity Utilization 113.5% ICU Level of Service H
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: US 321 & 20th Avenue NW/15th Avenue NW/14th Avenue NW



| Lane Group | WBL | WBR | NBU | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 202 | 18 | 4 | 2343 | 467 | 28 | 1604 |
| Future Volume (vph) | 202 | 18 | 4 | 2343 | 467 | 28 | 1604 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 250 | 250 | 300 | | 300 | 400 | |
| Storage Lanes | 1 | 1 | 1 | | 1 | 1 | |
| Taper Length (ft) | 100 | | 100 | | | 100 | |
| Lane Util. Factor | 0.97 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 |
| Frt | | 0.850 | | | 0.850 | | |
| Flt Protected | 0.950 | | 0.950 | | | 0.950 | |
| Satd. Flow (prot) | 3433 | 1583 | 1736 | 3471 | 1553 | 1736 | 3471 |
| Flt Permitted | 0.950 | | 0.950 | | | 0.950 | |
| Satd. Flow (perm) | 3433 | 1583 | 1736 | 3471 | 1553 | 1736 | 3471 |
| Right Turn on Red | | No | | | No | | |
| Satd. Flow (RTOR) | | | | | | | |
| Link Speed (mph) | 45 | | | 55 | | | 55 |
| Link Distance (ft) | 983 | | | 1234 | | | 3568 |
| Travel Time (s) | 14.9 | | | 15.3 | | | 44.2 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 224 | 20 | 4 | 2603 | 519 | 31 | 1782 |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 224 | 20 | 4 | 2603 | 519 | 31 | 1782 |
| Enter Blocked Intersection | No | No | No | No | No | No | No |
| Lane Alignment | Left | Right | R NA | Left | Right | Left | Left |
| Median Width(ft) | 24 | | | 12 | | | 12 |
| Link Offset(ft) | 0 | | | 0 | | | 0 |
| Crosswalk Width(ft) | 16 | | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | 9 | | 9 | 15 | |
| Turn Type | Prot | Perm | Prot | NA | Free | Prot | NA |
| Protected Phases | 8 | | 5 | 2 | | 1 | 6 |
| Permitted Phases | | 8 | | | Free | | |
| Detector Phase | 8 | 8 | 5 | 2 | | 1 | 6 |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 14.0 | | 7.0 | 14.0 |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 21.0 | | 14.0 | 21.0 |
| Total Split (s) | 16.0 | 16.0 | 14.0 | 100.0 | | 14.0 | 100.0 |
| Total Split (%) | 12.3% | 12.3% | 10.8% | 76.9% | | 10.8% | 76.9% |
| Maximum Green (s) | 9.0 | 9.0 | 7.0 | 93.0 | | 7.0 | 93.0 |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Lost Time (s) | 7.0 | 7.0 | 7.0 | 7.0 | | 7.0 | 7.0 |
| Lead/Lag | | | Lead | Lead | | Lag | Lag |
| Lead-Lag Optimize? | | | Yes | Yes | | Yes | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Recall Mode | None | None | None | C-Min | | None | C-Min |

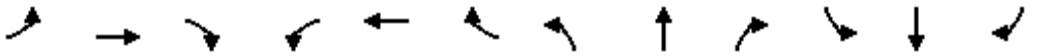
| Lane Group | WBL | WBR | NBU | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|---|
| Act Effct Green (s) | 10.6 | 10.6 | 7.0 | 97.0 | 130.0 | 7.0 | 102.6 |
| Actuated g/C Ratio | 0.08 | 0.08 | 0.05 | 0.75 | 1.00 | 0.05 | 0.79 |
| v/c Ratio | 0.80 | 0.16 | 0.04 | 1.01 | 0.33 | 0.33 | 0.65 |
| Control Delay | 79.8 | 59.8 | 83.0 | 17.4 | 0.1 | 57.9 | 7.1 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 79.8 | 59.8 | 83.0 | 17.4 | 0.1 | 57.9 | 7.1 |
| LOS | E | E | F | B | A | E | A |
| Approach Delay | 78.2 | | | 14.6 | | | 8.0 |
| Approach LOS | E | | | B | | | A |
| Queue Length 50th (ft) | 98 | 16 | 3 | ~1266 | 0 | 25 | 240 |
| Queue Length 95th (ft) | #180 | 44 | m3 | m101 | m0 | m41 | m361 |
| Internal Link Dist (ft) | 903 | | | 1154 | | | 3488 |
| Turn Bay Length (ft) | 250 | 250 | 300 | | 300 | 400 | |
| Base Capacity (vph) | 280 | 129 | 93 | 2589 | 1553 | 93 | 2738 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.80 | 0.16 | 0.04 | 1.01 | 0.33 | 0.33 | 0.65 |

**Intersection Summary**

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 117 (90%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 15.3 Intersection LOS: B
Intersection Capacity Utilization 82.3% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: US 321 & Grace Chapel Road



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 6 | 5 | 15 | 90 | 4 | 14 | 4 | 2025 | 75 | 36 | 1356 | 4 |
| Future Volume (vph) | 6 | 5 | 15 | 90 | 4 | 14 | 4 | 2025 | 75 | 36 | 1356 | 4 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 200 | | 350 | 450 | | 0 |
| Storage Lanes | 0 | | 1 | 0 | | 1 | 1 | | 1 | 1 | | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 0.95 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | |
| Flt Protected | | 0.974 | | | 0.954 | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 1762 | 1538 | 0 | 1220 | 1442 | 1736 | 3471 | 1442 | 1612 | 3505 | 0 |
| Flt Permitted | | 0.833 | | | 0.725 | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 1507 | 1538 | 0 | 927 | 1442 | 1736 | 3471 | 1442 | 1612 | 3505 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 25 | | | 35 | | | 55 | | | 55 | |
| Link Distance (ft) | | 264 | | | 676 | | | 3568 | | | 1233 | |
| Travel Time (s) | | 7.2 | | | 13.2 | | | 44.2 | | | 15.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 50% | 12% | 12% | 4% | 4% | 12% | 12% | 3% | 3% |
| Adj. Flow (vph) | 7 | 6 | 17 | 100 | 4 | 16 | 4 | 2250 | 83 | 40 | 1507 | 4 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 13 | 17 | 0 | 104 | 16 | 4 | 2250 | 83 | 40 | 1511 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 0 | | | 36 | | | 12 | | | 12 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway 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 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | Perm | NA | pm+ov | Perm | NA | pm+ov | Prot | NA | Perm | Prot | NA | |
| Protected Phases | | 4 | 5 | | 8 | 1 | 5 | 2 | | 1 | 6 | |
| Permitted Phases | 4 | | 4 | 8 | | 8 | | | 2 | | | |
| Detector Phase | 4 | 4 | 5 | 8 | 8 | 1 | 5 | 2 | 2 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 14.0 | 14.0 | 7.0 | 14.0 | |
| Minimum Split (s) | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | 21.0 | 21.0 | 14.0 | 21.0 | |
| Total Split (s) | 22.0 | 22.0 | 14.0 | 22.0 | 22.0 | 14.0 | 14.0 | 94.0 | 94.0 | 14.0 | 94.0 | |
| Total Split (%) | 16.9% | 16.9% | 10.8% | 16.9% | 16.9% | 10.8% | 10.8% | 72.3% | 72.3% | 10.8% | 72.3% | |
| Maximum Green (s) | 15.0 | 15.0 | 7.0 | 15.0 | 15.0 | 7.0 | 7.0 | 87.0 | 87.0 | 7.0 | 87.0 | |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Lost Time (s) | | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | |
| Lead/Lag | | | Lead | | | Lead | Lead | Lag | Lag | Lead | Lag | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | None | None | None | None | None | C-Min | C-Min | None | C-Min | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Act Effct Green (s) | | 15.8 | 29.8 | | 15.8 | 29.8 | 7.0 | 89.0 | 89.0 | 7.0 | 91.8 | |
| Actuated g/C Ratio | | 0.12 | 0.23 | | 0.12 | 0.23 | 0.05 | 0.68 | 0.68 | 0.05 | 0.71 | |
| v/c Ratio | | 0.07 | 0.05 | | 0.93 | 0.05 | 0.04 | 0.95 | 0.08 | 0.47 | 0.61 | |
| Control Delay | | 52.5 | 40.3 | | 125.4 | 40.4 | 47.5 | 16.6 | 8.9 | 93.5 | 2.8 | |
| Queue Delay | | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | | 52.5 | 40.3 | | 125.4 | 40.4 | 47.5 | 16.6 | 8.9 | 93.5 | 2.8 | |
| LOS | | D | D | | F | D | D | B | A | F | A | |
| Approach Delay | | 45.6 | | | 114.0 | | | 16.4 | | | 5.1 | |
| Approach LOS | | D | | | F | | | B | | | A | |
| Queue Length 50th (ft) | | 10 | 11 | | 89 | 11 | 4 | 337 | 24 | 35 | 52 | |
| Queue Length 95th (ft) | | 31 | 33 | | #209 | 31 | m4 | m335 | m24 | m57 | 58 | |
| Internal Link Dist (ft) | | 184 | | | 596 | | | 3488 | | | 1153 | |
| Turn Bay Length (ft) | | | | | | | 200 | | 350 | 450 | | |
| Base Capacity (vph) | | 182 | 352 | | 112 | 329 | 93 | 2377 | 988 | 86 | 2476 | |
| Starvation Cap Reductn | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | | 0.07 | 0.05 | | 0.93 | 0.05 | 0.04 | 0.95 | 0.08 | 0.47 | 0.61 | |

**Intersection Summary**

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 124 (95%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 15.2 Intersection LOS: B
Intersection Capacity Utilization 85.1% ICU Level of Service E
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: US 321 & Alex Lee Blvd

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 30 | 2315 | 4 | 0 | 1555 |
| Future Volume (vph) | 0 | 30 | 2315 | 4 | 0 | 1555 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 |
| Frt | | 0.865 | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1611 | 3505 | 0 | 0 | 3505 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1611 | 3505 | 0 | 0 | 3505 |
| Link Speed (mph) | 35 | | 55 | | | 55 |
| Link Distance (ft) | 444 | | 1233 | | | 1822 |
| Travel Time (s) | 8.6 | | 15.3 | | | 22.6 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 3% | 3% | 3% |
| Adj. Flow (vph) | 0 | 33 | 2572 | 4 | 0 | 1728 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 33 | 2576 | 0 | 0 | 1728 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 0 | | 12 | | | 12 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 16 | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Sign Control | Stop | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 74.1% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

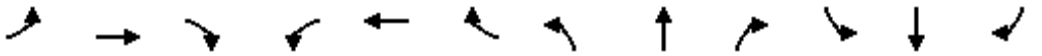
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 30 | 2315 | 4 | 0 | 1555 |
| Future Vol, veh/h | 0 | 30 | 2315 | 4 | 0 | 1555 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | Free | - | None |
| Storage Length | - | 0 | - | - | - | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 3 | 3 | 3 | 3 |
| Mvmt Flow | 0 | 33 | 2572 | 4 | 0 | 1728 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 1286 | 0 | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | - | 6.94 | - | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | - | 3.32 | - | - | - | - |
| Pot Cap-1 Maneuver | 0 | 155 | - | 0 | 0 | - |
| Stage 1 | 0 | - | - | 0 | 0 | - |
| Stage 2 | 0 | - | - | 0 | 0 | - |
| Platoon blocked, % | | | - | | | - |
| Mov Cap-1 Maneuver | - | 155 | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 34.5 | 0 | 0 |
| HCM LOS | D | | |

| Minor Lane/Major Mvmt | NBT | WBLn1 | SBT |
|---|---|---|---|
| Capacity (veh/h) | - | 155 | - |
| HCM Lane V/C Ratio | - | 0.215 | - |
| HCM Control Delay (s) | - | 34.5 | - |
| HCM Lane LOS | - | D | - |
| HCM 95th %tile Q(veh) | - | 0.8 | - |



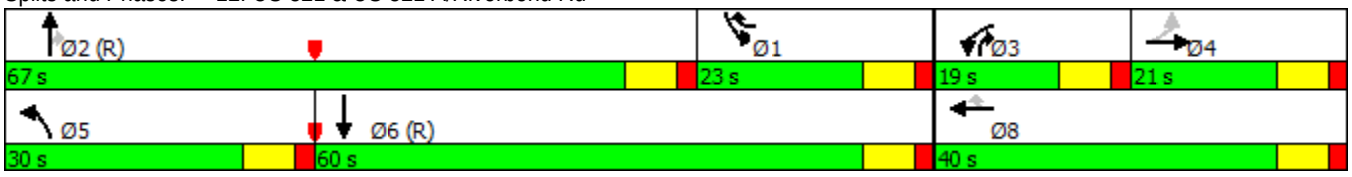
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 8 | 171 | 119 | 260 | 164 | 389 | 177 | 1292 | 401 | 376 | 937 | 8 |
| Future Volume (vph) | 8 | 171 | 119 | 260 | 164 | 389 | 177 | 1292 | 401 | 376 | 937 | 8 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 200 | | 100 | 0 | | 0 | 250 | | 200 | 350 | | 200 |
| Storage Lanes | 1 | | 1 | 2 | | 1 | 1 | | 1 | 2 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 200 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 0.97 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | 0.850 | | | 0.850 |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1752 | 1845 | 1568 | 3433 | 1863 | 1583 | 1736 | 3471 | 1553 | 3367 | 3471 | 1553 |
| Flt Permitted | 0.643 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (perm) | 1186 | 1845 | 1568 | 3433 | 1863 | 1583 | 1736 | 3471 | 1553 | 3367 | 3471 | 1553 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 55 | | | 55 | |
| Link Distance (ft) | | 491 | | | 484 | | | 1822 | | | 1161 | |
| Travel Time (s) | | 9.6 | | | 9.4 | | | 22.6 | | | 14.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 2% | 2% | 2% | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 9 | 190 | 132 | 289 | 182 | 432 | 197 | 1436 | 446 | 418 | 1041 | 9 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 9 | 190 | 132 | 289 | 182 | 432 | 197 | 1436 | 446 | 418 | 1041 | 9 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | | 24 | | | 24 | | | 24 | | | 24 | |
| Link Offset(ft) | | 0 | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | | 16 | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway 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 |
| Turning Speed (mph) | 15 | | 9 | 15 | | 9 | 15 | | 9 | 15 | | 9 |
| Turn Type | Perm | NA | Free | Prot | NA | pm+ov | Prot | NA | pm+ov | Prot | NA | Free |
| Protected Phases | | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | |
| Permitted Phases | 4 | | Free | | | 8 | | | 2 | | | Free |
| Detector Phase | 4 | 4 | | 3 | 8 | 1 | 5 | 2 | 3 | 1 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | | 7.0 | 7.0 | 7.0 | 7.0 | 14.0 | 7.0 | 7.0 | 14.0 | |
| Minimum Split (s) | 14.0 | 14.0 | | 14.0 | 14.0 | 14.0 | 14.0 | 21.0 | 14.0 | 14.0 | 21.0 | |
| Total Split (s) | 21.0 | 21.0 | | 19.0 | 40.0 | 23.0 | 30.0 | 67.0 | 19.0 | 23.0 | 60.0 | |
| Total Split (%) | 16.2% | 16.2% | | 14.6% | 30.8% | 17.7% | 23.1% | 51.5% | 14.6% | 17.7% | 46.2% | |
| Maximum Green (s) | 14.0 | 14.0 | | 12.0 | 33.0 | 16.0 | 23.0 | 60.0 | 12.0 | 16.0 | 53.0 | |
| Yellow Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | 0.0 | -2.0 | | -2.0 | -2.0 | -2.0 | 0.0 | 0.0 | -2.0 | -2.0 | 0.0 | |
| Total Lost Time (s) | 7.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 7.0 | 7.0 | 5.0 | 5.0 | 7.0 | |
| Lead/Lag | Lag | Lag | | Lead | | Lag | Lead | Lead | Lead | Lag | Lag | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | Yes | Yes | Yes | Yes | Yes | Yes | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | None | None | | None | None | None | None | C-Min | None | None | C-Min | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Act Effct Green (s) | 13.9 | 15.9 | 130.0 | 14.3 | 35.2 | 59.5 | 19.1 | 58.5 | 74.8 | 19.3 | 56.6 | 130.0 |
| Actuated g/C Ratio | 0.11 | 0.12 | 1.00 | 0.11 | 0.27 | 0.46 | 0.15 | 0.45 | 0.58 | 0.15 | 0.44 | 1.00 |
| v/c Ratio | 0.07 | 0.84 | 0.08 | 0.77 | 0.36 | 0.60 | 0.77 | 0.92 | 0.50 | 0.84 | 0.69 | 0.01 |
| Control Delay | 53.8 | 86.2 | 0.1 | 70.4 | 40.9 | 31.0 | 61.3 | 25.5 | 8.1 | 69.5 | 33.1 | 0.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 53.8 | 86.2 | 0.1 | 70.4 | 40.9 | 31.0 | 61.3 | 25.5 | 8.1 | 69.5 | 33.1 | 0.0 |
| LOS | D | F | A | E | D | C | E | C | A | E | C | A |
| Approach Delay | | 51.0 | | | 45.6 | | | 25.2 | | | 43.3 | |
| Approach LOS | | D | | | D | | | C | | | D | |
| Queue Length 50th (ft) | 7 | 159 | 0 | 124 | 125 | 273 | 151 | 519 | 157 | 180 | 369 | 0 |
| Queue Length 95th (ft) | 25 | #288 | 0 | #187 | 194 | 387 | m163 | m580 | m173 | #273 | 468 | 0 |
| Internal Link Dist (ft) | | 411 | | | 404 | | | 1742 | | | 1081 | |
| Turn Bay Length (ft) | 200 | | 100 | | | | 250 | | 200 | 350 | | 200 |
| Base Capacity (vph) | 127 | 227 | 1568 | 377 | 504 | 725 | 307 | 1602 | 893 | 500 | 1512 | 1553 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.07 | 0.84 | 0.08 | 0.77 | 0.36 | 0.60 | 0.64 | 0.90 | 0.50 | 0.84 | 0.69 | 0.01 |

**Intersection Summary**

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 91 (70%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 36.4 Intersection LOS: D
Intersection Capacity Utilization 81.5% ICU Level of Service D
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: US 321 & US 321 A/Riverbend Rd



## Summary of All Intervals

| Run Number | 1 | 10 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| Start Time | 4:50 | 4:50 | 4:50 | 4:50 | 4:50 | 4:50 | 4:50 |
| End Time | 6:00 | 6:00 | 6:00 | 6:00 | 6:00 | 6:00 | 6:00 |
| Total Time (min) | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| Time Recorded (min) | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Vehs Entered | 9473 | 9628 | 9203 | 9410 | 9533 | 9341 | 9498 |
| Vehs Exited | 9233 | 9321 | 8953 | 9087 | 9219 | 9124 | 9092 |
| Starting Vehs | 817 | 779 | 766 | 728 | 756 | 815 | 716 |
| Ending Vehs | 1057 | 1086 | 1016 | 1051 | 1070 | 1032 | 1122 |
| Denied Entry Before | 2 | 2 | 0 | 4 | 1 | 0 | 1 |
| Denied Entry After | 286 | 325 | 441 | 296 | 394 | 352 | 356 |
| Travel Distance (mi) | 19513 | 19873 | 19054 | 19545 | 19245 | 19497 | 19161 |
| Travel Time (hr) | 1112.7 | 1183.6 | 1127.6 | 1060.7 | 1103.6 | 1082.4 | 1145.3 |
| Total Delay (hr) | 681.5 | 745.3 | 705.9 | 628.0 | 676.0 | 651.2 | 721.0 |
| Total Stops | 23978 | 24542 | 22695 | 23902 | 21495 | 22088 | 25182 |
| Fuel Used (gal) | 794.9 | 820.5 | 783.0 | 781.9 | 785.2 | 786.1 | 791.3 |

## Summary of All Intervals

| Run Number | 7 | 8 | 9 | Avg |
|---|---|---|---|---|
| Start Time | 4:50 | 4:50 | 4:50 | 4:50 |
| End Time | 6:00 | 6:00 | 6:00 | 6:00 |
| Total Time (min) | 70 | 70 | 70 | 70 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 9450 | 9463 | 9491 | 9449 |
| Vehs Exited | 9137 | 9250 | 9138 | 9152 |
| Starting Vehs | 769 | 803 | 768 | 766 |
| Ending Vehs | 1082 | 1016 | 1121 | 1055 |
| Denied Entry Before | 3 | 4 | 0 | 0 |
| Denied Entry After | 382 | 363 | 375 | 355 |
| Travel Distance (mi) | 19586 | 19349 | 19116 | 19394 |
| Travel Time (hr) | 1134.6 | 1157.7 | 1110.7 | 1121.9 |
| Total Delay (hr) | 700.7 | 727.6 | 686.5 | 692.4 |
| Total Stops | 23530 | 23353 | 24014 | 23477 |
| Fuel Used (gal) | 803.4 | 801.1 | 781.1 | 792.8 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 4:50 |
| End Time | 5:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 5:00 |
| End Time | 6:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 10 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| Vehs Entered | 9473 | 9628 | 9203 | 9410 | 9533 | 9341 | 9498 |
| Vehs Exited | 9233 | 9321 | 8953 | 9087 | 9219 | 9124 | 9092 |
| Starting Vehs | 817 | 779 | 766 | 728 | 756 | 815 | 716 |
| Ending Vehs | 1057 | 1086 | 1016 | 1051 | 1070 | 1032 | 1122 |
| Denied Entry Before | 2 | 2 | 0 | 4 | 1 | 0 | 1 |
| Denied Entry After | 286 | 325 | 441 | 296 | 394 | 352 | 356 |
| Travel Distance (mi) | 19513 | 19873 | 19054 | 19545 | 19245 | 19497 | 19161 |
| Travel Time (hr) | 1112.7 | 1183.6 | 1127.6 | 1060.7 | 1103.6 | 1082.4 | 1145.3 |
| Total Delay (hr) | 681.5 | 745.3 | 705.9 | 628.0 | 676.0 | 651.2 | 721.0 |
| Total Stops | 23978 | 24542 | 22695 | 23902 | 21495 | 22088 | 25182 |
| Fuel Used (gal) | 794.9 | 820.5 | 783.0 | 781.9 | 785.2 | 786.1 | 791.3 |

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 5:00 |
| End Time | 6:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 7 | 8 | 9 | Avg |
|---|---|---|---|---|
| Vehs Entered | 9450 | 9463 | 9491 | 9449 |
| Vehs Exited | 9137 | 9250 | 9138 | 9152 |
| Starting Vehs | 769 | 803 | 768 | 766 |
| Ending Vehs | 1082 | 1016 | 1121 | 1055 |
| Denied Entry Before | 3 | 4 | 0 | 0 |
| Denied Entry After | 382 | 363 | 375 | 355 |
| Travel Distance (mi) | 19586 | 19349 | 19116 | 19394 |
| Travel Time (hr) | 1134.6 | 1157.7 | 1110.7 | 1121.9 |
| Total Delay (hr) | 700.7 | 727.6 | 686.5 | 692.4 |
| Total Stops | 23530 | 23353 | 24014 | 23477 |
| Fuel Used (gal) | 803.4 | 801.1 | 781.1 | 792.8 |

## Total Network Performance By Run

| Run Number | 1 | 10 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| Denied Delay (hr) | 103.1 | 147.0 | 163.4 | 81.5 | 137.9 | 120.6 | 124.4 |
| Denied Del/Veh (s) | 38.0 | 53.2 | 61.0 | 30.2 | 50.0 | 44.8 | 45.4 |
| Total Delay (hr) | 578.4 | 598.2 | 542.5 | 546.5 | 538.1 | 530.6 | 596.6 |
| Total Del/Veh (s) | 202.4 | 206.9 | 195.9 | 194.1 | 188.3 | 188.1 | 210.3 |
| Stop Delay (hr) | 361.5 | 374.3 | 342.0 | 323.5 | 339.9 | 323.3 | 377.5 |
| Stop Del/Veh (s) | 126.5 | 129.5 | 123.5 | 114.9 | 118.9 | 114.6 | 133.1 |
| Total Stops | 23978 | 24542 | 22695 | 23902 | 21495 | 22088 | 25182 |
| Stop/Veh | 2.33 | 2.36 | 2.28 | 2.36 | 2.09 | 2.17 | 2.47 |
| Travel Dist (mi) | 19513.4 | 19873.4 | 19054.1 | 19545.1 | 19245.0 | 19497.1 | 19160.8 |
| Travel Time (hr) | 1112.7 | 1183.6 | 1127.6 | 1060.7 | 1103.6 | 1082.4 | 1145.3 |
| Avg Speed (mph) | 19 | 19 | 20 | 20 | 20 | 20 | 19 |
| Vehicles Entered | 9473 | 9628 | 9203 | 9410 | 9533 | 9341 | 9498 |
| Vehicles Exited | 9233 | 9321 | 8953 | 9087 | 9219 | 9124 | 9092 |
| Hourly Exit Rate | 9233 | 9321 | 8953 | 9087 | 9219 | 9124 | 9092 |
| Input Volume | 66386 | 66386 | 66386 | 66386 | 66386 | 66386 | 66386 |
| % of Volume | 14 | 14 | 13 | 14 | 14 | 14 | 14 |
| Denied Entry Before | 2 | 2 | 0 | 4 | 1 | 0 | 1 |
| Denied Entry After | 286 | 325 | 441 | 296 | 394 | 352 | 356 |

## Total Network Performance By Run

| Run Number | 7 | 8 | 9 | Avg |
|---|---|---|---|---|
| Denied Delay (hr) | 139.0 | 157.2 | 126.4 | 130.1 |
| Denied Del/Veh (s) | 50.9 | 57.6 | 46.1 | 47.8 |
| Total Delay (hr) | 561.8 | 570.4 | 560.1 | 562.3 |
| Total Del/Veh (s) | 197.9 | 200.0 | 196.5 | 198.3 |
| Stop Delay (hr) | 344.7 | 353.3 | 348.9 | 348.9 |
| Stop Del/Veh (s) | 121.4 | 123.9 | 122.4 | 123.1 |
| Total Stops | 23530 | 23353 | 24014 | 23477 |
| Stop/Veh | 2.30 | 2.27 | 2.34 | 2.30 |
| Travel Dist (mi) | 19585.9 | 19348.8 | 19115.9 | 19393.9 |
| Travel Time (hr) | 1134.6 | 1157.7 | 1110.7 | 1121.9 |
| Avg Speed (mph) | 20 | 19 | 19 | 20 |
| Vehicles Entered | 9450 | 9463 | 9491 | 9449 |
| Vehicles Exited | 9137 | 9250 | 9138 | 9152 |
| Hourly Exit Rate | 9137 | 9250 | 9138 | 9152 |
| Input Volume | 66386 | 66386 | 66386 | 66386 |
| % of Volume | 14 | 14 | 14 | 14 |
| Denied Entry Before | 3 | 4 | 0 | 0 |
| Denied Entry After | 382 | 363 | 375 | 355 |

## Intersection: 1: US 321 & 13th Street SW

| Movement | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | NB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | LT | TR | L | L | T | R | L | T | T | R | L |
| Maximum Queue (ft) | 138 | 171 | 120 | 138 | 169 | 112 | 98 | 227 | 646 | 666 | 16 | 159 |
| Average Queue (ft) | 23 | 91 | 16 | 24 | 91 | 39 | 9 | 27 | 343 | 351 | 1 | 61 |
| 95th Queue (ft) | 88 | 154 | 61 | 96 | 154 | 88 | 60 | 123 | 533 | 546 | 9 | 126 |
| Link Distance (ft) | | 409 | 409 | | 504 | 504 | | | 2831 | 2831 | | |
| Upstream Blk Time (%) | | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | | |
| Storage Bay Dist (ft) | 300 | | | 150 | | | 200 | 200 | | | 1000 | 250 |
| Storage Blk Time (%) | | | | 0 | 1 | 0 | | | 20 | | | |
| Queuing Penalty (veh) | | | | 0 | 1 | 0 | | | 3 | | | |

## Intersection: 1: US 321 & 13th Street SW

| Movement | SB | SB | SB |
|---|---|---|---|
| Directions Served | T | T | T |
| Maximum Queue (ft) | 327 | 332 | 317 |
| Average Queue (ft) | 69 | 79 | 74 |
| 95th Queue (ft) | 211 | 217 | 206 |
| Link Distance (ft) | 1853 | 1853 | |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | 400 |
| Storage Blk Time (%) | 2 | 0 | 0 |
| Queuing Penalty (veh) | 2 | 0 | 0 |

## Intersection: 2: US 321 & Main Avenue Drive NW

| Movement | EB | WB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | LTR | LTR | L | T | TR | L | TR |
| Maximum Queue (ft) | 872 | 733 | 86 | 196 | 197 | 46 | 16 |
| Average Queue (ft) | 748 | 401 | 21 | 7 | 7 | 9 | 1 |
| 95th Queue (ft) | 1081 | 824 | 57 | 186 | 189 | 30 | 8 |
| Link Distance (ft) | 841 | 788 | | 1853 | 1853 | | 1020 |
| Upstream Blk Time (%) | 72 | 11 | | 0 | 0 | | |
| Queuing Penalty (veh) | 0 | 0 | | 0 | 1 | | |
| Storage Bay Dist (ft) | | | 200 | | | 150 | |
| Storage Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |

## Intersection: 3: US 321 & 2nd Avenue NW

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | LT | TR | L | T | T | R | L | T | TR |
| Maximum Queue (ft) | 417 | 586 | 289 | 263 | 350 | 706 | 730 | 381 | 271 | 593 | 598 |
| Average Queue (ft) | 180 | 407 | 205 | 164 | 119 | 353 | 373 | 39 | 54 | 290 | 307 |
| 95th Queue (ft) | 527 | 698 | 302 | 280 | 288 | 673 | 692 | 238 | 159 | 542 | 558 |
| Link Distance (ft) | 570 | 570 | 258 | 258 | | 1020 | 1020 | | | 2420 | 2420 |
| Upstream Blk Time (%) | 8 | 26 | 13 | 6 | | 0 | | | | | |
| Queuing Penalty (veh) | 0 | 0 | 0 | 0 | | 0 | | | | | |
| Storage Bay Dist (ft) | | | | | 250 | | | 500 | 400 | | |
| Storage Blk Time (%) | | | | | 0 | 20 | 5 | | | 6 | |
| Queuing Penalty (veh) | | | | | 0 | 19 | 4 | | | 3 | |

## Intersection: 4: US 321 & 7th Avenue NW

| Movement | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | LTR | L | TR | L | T | T | R | L | T | TR |
| Maximum Queue (ft) | 312 | 104 | 116 | 166 | 720 | 748 | 300 | 42 | 464 | 487 |
| Average Queue (ft) | 171 | 38 | 47 | 43 | 405 | 429 | 76 | 7 | 130 | 144 |
| 95th Queue (ft) | 283 | 85 | 104 | 126 | 711 | 730 | 270 | 28 | 322 | 339 |
| Link Distance (ft) | 356 | | 94 | | 2420 | 2420 | | | 967 | 967 |
| Upstream Blk Time (%) | 0 | 3 | 4 | | | | | | | |
| Queuing Penalty (veh) | 0 | 0 | 0 | | | | | | | |
| Storage Bay Dist (ft) | | 150 | | 100 | | | 200 | 150 | | |
| Storage Blk Time (%) | | 3 | 4 | 1 | 25 | 23 | | | 7 | |
| Queuing Penalty (veh) | | 2 | 2 | 6 | 9 | 13 | | | 0 | |

## Intersection: 5: US 321 & 9th Avenue NW

| Movement | EB | EB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | TR | L | TR | L | T | TR | L | T | TR |
| Maximum Queue (ft) | 318 | 291 | 88 | 121 | 249 | 905 | 907 | 160 | 468 | 478 |
| Average Queue (ft) | 216 | 136 | 31 | 48 | 63 | 511 | 524 | 53 | 135 | 136 |
| 95th Queue (ft) | 339 | 287 | 71 | 98 | 190 | 947 | 958 | 120 | 342 | 345 |
| Link Distance (ft) | | 297 | | 302 | | 967 | 967 | | 874 | 874 |
| Upstream Blk Time (%) | 11 | 7 | | | | 1 | 1 | | | |
| Queuing Penalty (veh) | 0 | 0 | | | | 5 | 7 | | | |
| Storage Bay Dist (ft) | 300 | | 150 | | 150 | | | 100 | | |
| Storage Blk Time (%) | 11 | 7 | | 0 | | 39 | | 3 | 18 | |
| Queuing Penalty (veh) | 15 | 14 | | 0 | | 15 | | 20 | 10 | |

## Intersection: 6: US 321 & Clement Boulevard

| Movement | EB | EB | EB | WB | WB | WB | NB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | LT | R | L | LT | R | L | T | T | R | L | L |
| Maximum Queue (ft) | 402 | 461 | 85 | 235 | 330 | 400 | 499 | 877 | 889 | 350 | 426 | 431 |
| Average Queue (ft) | 195 | 290 | 23 | 76 | 187 | 267 | 97 | 586 | 609 | 147 | 265 | 270 |
| 95th Queue (ft) | 472 | 542 | 63 | 210 | 334 | 444 | 353 | 983 | 1018 | 431 | 400 | 405 |
| Link Distance (ft) | | 850 | 850 | | 385 | 385 | | 874 | 874 | | | |
| Upstream Blk Time (%) | | | | 0 | 2 | 14 | | 0 | 1 | | | |
| Queuing Penalty (veh) | | | | 0 | 0 | 0 | | 3 | 7 | | | |
| Storage Bay Dist (ft) | 600 | | | 300 | | | 400 | | | 250 | 600 | 600 |
| Storage Blk Time (%) | 0 | 3 | | | 0 | | | 24 | 39 | | | |
| Queuing Penalty (veh) | 0 | 1 | | | 0 | | | 12 | 53 | | | |

## Intersection: 6: US 321 & Clement Boulevard

| Movement | SB | SB |
|---|---|---|
| Directions Served | T | TR |
| Maximum Queue (ft) | 522 | 530 |
| Average Queue (ft) | 234 | 245 |
| 95th Queue (ft) | 428 | 442 |
| Link Distance (ft) | 964 | 964 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | 0 | |
| Queuing Penalty (veh) | 1 | |

## Intersection: 7: US 321 & 13th Avenue Drive NW

| Movement | EB | NB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | R | L | T | T | T | TR |
| Maximum Queue (ft) | 65 | 192 | 803 | 814 | 9 | 7 |
| Average Queue (ft) | 22 | 13 | 507 | 512 | 0 | 0 |
| 95th Queue (ft) | 52 | 106 | 977 | 983 | 6 | 6 |
| Link Distance (ft) | 196 | | 964 | 964 | 1656 | 1656 |
| Upstream Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |
| Storage Bay Dist (ft) | | 200 | | | | |
| Storage Blk Time (%) | | | 36 | | | |
| Queuing Penalty (veh) | | | 1 | | | |

## Intersection: 8: US 321 & 20th Avenue NW/15th Avenue NW/14th Avenue NW

| Movement | EB | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | R | LT | R | L | T | T | R | L | T | T |
| Maximum Queue (ft) | 74 | 38 | 65 | 427 | 200 | 225 | 1684 | 1692 | 227 | 233 | 327 | 314 |
| Average Queue (ft) | 24 | 7 | 12 | 223 | 176 | 21 | 1504 | 1514 | 21 | 125 | 139 | 137 |
| 95th Queue (ft) | 59 | 26 | 41 | 464 | 236 | 134 | 2049 | 2052 | 125 | 209 | 280 | 274 |
| Link Distance (ft) | | 546 | | 415 | | | 1656 | 1656 | | | 3294 | 3294 |
| Upstream Blk Time (%) | | | | 5 | | | 5 | 6 | | | | |
| Queuing Penalty (veh) | | | | 0 | | | 60 | 75 | | | | |
| Storage Bay Dist (ft) | 250 | | 250 | | 100 | 300 | | | 150 | 900 | | |
| Storage Blk Time (%) | | | | 3 | 44 | | 41 | 39 | | | | 2 |
| Queuing Penalty (veh) | | | | 12 | 14 | | 4 | 6 | | | | 0 |

## Intersection: 8: US 321 & 20th Avenue NW/15th Avenue NW/14th Avenue NW

| Movement | SB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 56 |
| Average Queue (ft) | 4 |
| 95th Queue (ft) | 35 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 200 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 9: US 321 & Grace Chapel Road

| Movement | WB | WB | WB | NB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | R | U | T | T | R | L | T | T |
| Maximum Queue (ft) | 175 | 202 | 57 | 30 | 472 | 472 | 266 | 85 | 278 | 288 |
| Average Queue (ft) | 77 | 125 | 20 | 4 | 219 | 228 | 25 | 27 | 118 | 108 |
| 95th Queue (ft) | 168 | 191 | 51 | 20 | 396 | 407 | 165 | 66 | 232 | 223 |
| Link Distance (ft) | | 928 | | | 1174 | 1174 | | | 3473 | 3473 |
| Upstream Blk Time (%) | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | |
| Storage Bay Dist (ft) | 250 | | 250 | 300 | | | 300 | 400 | | |
| Storage Blk Time (%) | | | | | 2 | 2 | | | | |
| Queuing Penalty (veh) | | | | | 0 | 11 | | | | |

## Intersection: 10: US 321 & Alex Lee Blvd

| Movement | EB | EB | WB | WB | NB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | LT | R | LT | R | L | T | T | R | L | T | TR |
| Maximum Queue (ft) | 50 | 70 | 280 | 58 | 52 | 432 | 431 | 104 | 109 | 179 | 183 |
| Average Queue (ft) | 13 | 16 | 117 | 9 | 4 | 191 | 210 | 16 | 26 | 44 | 45 |
| 95th Queue (ft) | 40 | 50 | 230 | 34 | 34 | 398 | 416 | 70 | 74 | 128 | 130 |
| Link Distance (ft) | 217 | 217 | 618 | 618 | | 3473 | 3473 | | | 1153 | 1153 |
| Upstream Blk Time (%) | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | |
| Storage Bay Dist (ft) | | | | | 200 | | | 350 | 450 | | |
| Storage Blk Time (%) | | | | | | 6 | 1 | | | | |
| Queuing Penalty (veh) | | | | | | 0 | 1 | | | | |

## Intersection: 11: US 321 & Pooveys Grove Church Road

| Movement | WB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 72 |
| Average Queue (ft) | 24 |
| 95th Queue (ft) | 57 |
| Link Distance (ft) | 398 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 12: US 321 & US 321 A/Riverbend Rd

| Movement | EB | EB | EB | WB | WB | WB | WB | NB | NB | NB | NB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | R | L | L | T | R | L | T | T | R | L |
| Maximum Queue (ft) | 93 | 374 | 200 | 225 | 198 | 196 | 327 | 332 | 512 | 546 | 300 | 262 |
| Average Queue (ft) | 11 | 182 | 56 | 156 | 111 | 89 | 159 | 131 | 260 | 273 | 159 | 146 |
| 95th Queue (ft) | 64 | 347 | 194 | 216 | 204 | 168 | 279 | 252 | 434 | 465 | 325 | 235 |
| Link Distance (ft) | | 435 | | 418 | 418 | 418 | 418 | | 1744 | 1744 | | |
| Upstream Blk Time (%) | | 1 | | | | | 0 | | | | | |
| Queuing Penalty (veh) | | 0 | | | | | 0 | | | | | |
| Storage Bay Dist (ft) | 200 | | 100 | | | | | 250 | | | 200 | 350 |
| Storage Blk Time (%) | | 41 | 0 | | | | | 0 | 9 | 15 | 1 | 0 |
| Queuing Penalty (veh) | | 52 | 0 | | | | | 3 | 16 | 60 | 6 | 0 |

## Intersection: 12: US 321 & US 321 A/Riverbend Rd

| Movement | SB | SB | SB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 297 | 329 | 318 |
| Average Queue (ft) | 186 | 213 | 193 |
| 95th Queue (ft) | 266 | 310 | 287 |
| Link Distance (ft) | | 1113 | 1113 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | 350 | | |
| Storage Blk Time (%) | 0 | 0 | 6 |
| Queuing Penalty (veh) | 0 | 1 | 1 |

## Intersection: 158: Bend

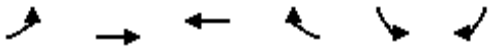
| Movement | SB |
|---|---|
| Directions Served | T |
| Maximum Queue (ft) | 277 |
| Average Queue (ft) | 9 |
| 95th Queue (ft) | 273 |
| Link Distance (ft) | 2831 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Network Summary

Network wide Queuing Penalty: 554

# APPENDIX D

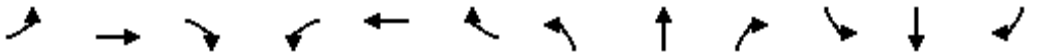
## 2040 Build Alternative 13th Street – One-Way Split Partial Cloverleaf Interchange Synchro, SimTraffic & HCS Reports



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑↑↑ | ↑↑↑ | ↱ | | ↱ |
| Traffic Volume (veh/h) | 0 | 1857 | 1534 | 116 | 0 | 59 |
| Future Volume (Veh/h) | 0 | 1857 | 1534 | 116 | 0 | 59 |
| Sign Control | | Free | Free | | Yield | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 2063 | 1704 | 129 | 0 | 66 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1704 | | | | 2392 | 568 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1704 | | | | 2392 | 568 |
| tC, single (s) | 4.2 | | | | 6.9 | 7.0 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 100 | | | | 100 | 86 |
| cM capacity (veh/h) | 356 | | | | 27 | 458 |

| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | WB 4 | SB 1 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 688 | 688 | 688 | 568 | 568 | 568 | 129 | 66 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 0 | 129 | 66 |
| cSH | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 458 |
| Volume to Capacity | 0.40 | 0.40 | 0.40 | 0.33 | 0.33 | 0.33 | 0.08 | 0.14 |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 14.2 |
| Lane LOS | | | | | | | | B |
| Approach Delay (s) | 0.0 | | | 0.0 | | | | 14.2 |
| Approach LOS | | | | | | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.2 | | |
| Intersection Capacity Utilization | 40.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



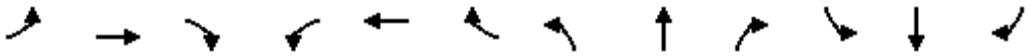
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 4 | 413 | 32 | 8 | 66 | 0 | 0 | 144 | 38 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 4 | 413 | 32 | 8 | 66 | 0 | 0 | 144 | 38 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 4 | 459 | 36 | 9 | 73 | 0 | 0 | 160 | 42 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | 4 |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 495 | | | 0 | | | 338 | 503 | 0 | 522 | 485 | 248 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 495 | | | 0 | | | 338 | 503 | 0 | 522 | 485 | 248 |
| tC, single (s) | 4.2 | | | 4.2 | | | 7.6 | 6.6 | 7.0 | 7.6 | 6.6 | 7.0 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.6 | 4.1 | 3.4 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 98 | 84 | 100 | 100 | 66 | 94 |
| cM capacity (veh/h) | 1058 | | | 1607 | | | 404 | 460 | 1071 | 378 | 473 | 744 |

| Direction, Lane # | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 234 | 266 | 82 | 202 |
| Volume Left | 4 | 0 | 9 | 0 |
| Volume Right | 0 | 36 | 0 | 42 |
| cSH | 1607 | 1700 | 453 | 597 |
| Volume to Capacity | 0.00 | 0.16 | 0.18 | 0.34 |
| Queue Length 95th (ft) | 0 | 0 | 16 | 37 |
| Control Delay (s) | 0.1 | 0.0 | 14.7 | 15.1 |
| Lane LOS | A | | B | C |
| Approach Delay (s) | 0.1 | | 14.7 | 15.1 |
| Approach LOS | | | B | C |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 5.5 | | | |
| Intersection Capacity Utilization | 29.8% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

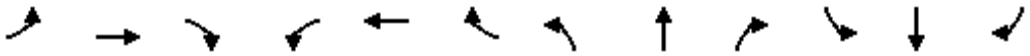
Intersection Sign configuration not allowed in HCM analysis.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 66 | 258 | 9 | 0 | 0 | 0 | 0 | 4 | 13 | 149 | 4 | 0 |
| Future Volume (Veh/h) | 66 | 258 | 9 | 0 | 0 | 0 | 0 | 4 | 13 | 149 | 4 | 0 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 73 | 287 | 10 | 0 | 0 | 0 | 0 | 4 | 14 | 166 | 4 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 0 | | | 297 | | | 440 | 438 | 148 | 306 | 443 | 0 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 0 | | | 297 | | | 440 | 438 | 148 | 306 | 443 | 0 |
| tC, single (s) | 4.2 | | | 4.2 | | | 7.7 | 6.7 | 7.1 | 7.6 | 6.6 | 7.0 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.6 | 4.1 | 3.4 | 3.6 | 4.1 | 3.4 |
| p0 queue free % | 95 | | | 100 | | | 100 | 99 | 98 | 71 | 99 | 100 |
| cM capacity (veh/h) | 1614 | | | 1254 | | | 467 | 475 | 853 | 579 | 476 | 1071 |

| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 216 | 154 | 18 | 170 |
| Volume Left | 73 | 0 | 0 | 166 |
| Volume Right | 0 | 10 | 14 | 0 |
| cSH | 1614 | 1700 | 725 | 576 |
| Volume to Capacity | 0.05 | 0.09 | 0.02 | 0.30 |
| Queue Length 95th (ft) | 4 | 0 | 2 | 31 |
| Control Delay (s) | 2.7 | 0.0 | 10.1 | 13.8 |
| Lane LOS | A | | B | B |
| Approach Delay (s) | 1.6 | | 10.1 | 13.8 |
| Approach LOS | | | B | B |

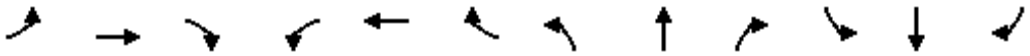
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 5.6 | | | |
| Intersection Capacity Utilization | 31.1% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 126 | 197 | 141 | 0 | 0 | 0 | 0 | 16 | 126 | 35 | 40 | 0 |
| Future Volume (Veh/h) | 126 | 197 | 141 | 0 | 0 | 0 | 0 | 16 | 126 | 35 | 40 | 0 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 140 | 219 | 157 | 0 | 0 | 0 | 0 | 18 | 140 | 39 | 44 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 0 | | | 376 | | | 600 | 578 | 188 | 538 | 656 | 0 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 0 | | | 376 | | | 600 | 578 | 188 | 538 | 656 | 0 |
| tC, single (s) | 4.2 | | | 4.2 | | | 7.6 | 6.6 | 7.0 | 7.6 | 6.6 | 7.0 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 91 | | | 100 | | | 100 | 95 | 83 | 88 | 87 | 100 |
| cM capacity (veh/h) | 1614 | | | 1172 | | | 323 | 387 | 819 | 315 | 347 | 1078 |

| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 250 | 266 | 158 | 83 |
| Volume Left | 140 | 0 | 0 | 39 |
| Volume Right | 0 | 157 | 140 | 0 |
| cSH | 1614 | 1700 | 726 | 331 |
| Volume to Capacity | 0.09 | 0.16 | 0.22 | 0.25 |
| Queue Length 95th (ft) | 7 | 0 | 21 | 24 |
| Control Delay (s) | 4.5 | 0.0 | 11.3 | 19.5 |
| Lane LOS | A | | B | C |
| Approach Delay (s) | 2.2 | | 11.3 | 19.5 |
| Approach LOS | | | B | C |

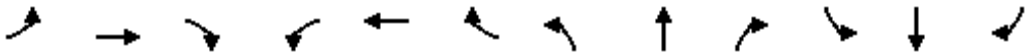
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 6.0 | | |
| Intersection Capacity Utilization | 36.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 25 | 360 | 39 | 0 | 0 | 0 | 0 | 48 | 68 | 4 | 20 | 0 |
| Future Volume (Veh/h) | 25 | 360 | 39 | 0 | 0 | 0 | 0 | 48 | 68 | 4 | 20 | 0 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 28 | 400 | 43 | 0 | 0 | 0 | 0 | 53 | 76 | 4 | 22 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | 4 | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 0 | | | 443 | | | 488 | 478 | 222 | 320 | 499 | 0 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 0 | | | 443 | | | 488 | 478 | 222 | 320 | 499 | 0 |
| tC, single (s) | 4.2 | | | 4.2 | | | 7.6 | 6.6 | 7.0 | 7.6 | 6.6 | 7.0 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.6 | 4.1 | 3.4 | 3.6 | 4.1 | 3.4 |
| p0 queue free % | 98 | | | 100 | | | 100 | 89 | 90 | 99 | 95 | 100 |
| cM capacity (veh/h) | 1614 | | | 1099 | | | 429 | 466 | 767 | 484 | 453 | 1068 |

| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 228 | 243 | 129 | 26 |
| Volume Left | 28 | 0 | 0 | 4 |
| Volume Right | 0 | 43 | 76 | 0 |
| cSH | 1614 | 1700 | 1135 | 458 |
| Volume to Capacity | 0.02 | 0.14 | 0.11 | 0.06 |
| Queue Length 95th (ft) | 1 | 0 | 10 | 5 |
| Control Delay (s) | 1.0 | 0.0 | 11.6 | 13.3 |
| Lane LOS | A | | B | B |
| Approach Delay (s) | 0.5 | | 11.6 | 13.3 |
| Approach LOS | | | B | B |

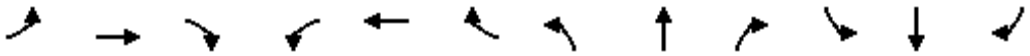
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 3.3 | | | |
| Intersection Capacity Utilization | 29.5% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 44 | 456 | 15 | 74 | 61 | 0 | 0 | 35 | 65 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 44 | 456 | 15 | 74 | 61 | 0 | 0 | 35 | 65 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 49 | 507 | 17 | 82 | 68 | 0 | 0 | 39 | 72 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 524 | | | 0 | | | 443 | 622 | 0 | 648 | 614 | 262 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 524 | | | 0 | | | 443 | 622 | 0 | 648 | 614 | 262 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.6 | 6.6 | 7.0 | 7.6 | 6.6 | 7.0 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 97 | | | 80 | 82 | 100 | 100 | 90 | 90 |
| cM capacity (veh/h) | 1039 | | | 1622 | | | 402 | 385 | 1078 | 299 | 392 | 734 |

| Direction, Lane # | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 302 | 270 | 150 | 111 |
| Volume Left | 49 | 0 | 82 | 0 |
| Volume Right | 0 | 17 | 0 | 72 |
| cSH | 1622 | 1700 | 394 | 561 |
| Volume to Capacity | 0.03 | 0.16 | 0.38 | 0.20 |
| Queue Length 95th (ft) | 2 | 0 | 44 | 18 |
| Control Delay (s) | 1.4 | 0.0 | 19.6 | 13.0 |
| Lane LOS | A | | C | B |
| Approach Delay (s) | 0.7 | | 19.6 | 13.0 |
| Approach LOS | | | C | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 5.8 | | |
| Intersection Capacity Utilization | 35.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 30 | 578 | 4 | 62 | 4 | 0 | 0 | 4 | 4 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 30 | 578 | 4 | 62 | 4 | 0 | 0 | 4 | 4 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 33 | 642 | 4 | 69 | 4 | 0 | 0 | 4 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 646 | | | 0 | | | 393 | 712 | 0 | 712 | 710 | 323 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 646 | | | 0 | | | 393 | 712 | 0 | 712 | 710 | 323 |
| tC, single (s) | 4.2 | | | 4.2 | | | 7.6 | 6.6 | 7.0 | 7.6 | 6.6 | 7.0 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.6 | 4.1 | 3.4 | 3.6 | 4.1 | 3.4 |
| p0 queue free % | 100 | | | 98 | | | 87 | 99 | 100 | 100 | 99 | 99 |
| cM capacity (veh/h) | 922 | | | 1607 | | | 513 | 339 | 1068 | 304 | 342 | 661 |

| Direction, Lane # | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 354 | 325 | 73 | 8 |
| Volume Left | 33 | 0 | 69 | 0 |
| Volume Right | 0 | 4 | 0 | 4 |
| cSH | 1607 | 1700 | 499 | 451 |
| Volume to Capacity | 0.02 | 0.19 | 0.15 | 0.02 |
| Queue Length 95th (ft) | 2 | 0 | 13 | 1 |
| Control Delay (s) | 0.8 | 0.0 | 13.5 | 13.1 |
| Lane LOS | A | | B | B |
| Approach Delay (s) | 0.4 | | 13.5 | 13.1 |
| Approach LOS | | | B | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.8 | | | |
| Intersection Capacity Utilization | 34.0% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

## Summary of All Intervals

| Start Time | 6:50 |
|---|---|
| End Time | 8:00 |
| Total Time (min) | 70 |
| Time Recorded (min) | 60 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 5064 |
| Vehs Exited | 5086 |
| Starting Vehs | 136 |
| Ending Vehs | 114 |
| Travel Distance (mi) | 4804 |
| Travel Time (hr) | 126.7 |
| Total Delay (hr) | 10.0 |
| Total Stops | 1127 |
| Fuel Used (gal) | 157.8 |

## Interval #0 Information Seeding

| Start Time | 6:50 |
|---|---|
| End Time | 7:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 7:00 |
|---|---|
| End Time | 8:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 5064 |
|---|---|
| Vehs Exited | 5086 |
| Starting Vehs | 136 |
| Ending Vehs | 114 |
| Travel Distance (mi) | 4804 |
| Travel Time (hr) | 126.7 |
| Total Delay (hr) | 10.0 |
| Total Stops | 1127 |
| Fuel Used (gal) | 157.8 |

## Intersection: 3: US 321 & US 321 NB Off Ramp

| Movement | SB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 68 |
| Average Queue (ft) | 17 |
| 95th Queue (ft) | 48 |
| Link Distance (ft) | 556 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 10: 15 St SW/15th St Connector & 1st Avenue SW

| Movement | NB | SB | SB |
|---|---|---|---|
| Directions Served | LT | T | R |
| Maximum Queue (ft) | 72 | 93 | 53 |
| Average Queue (ft) | 33 | 46 | 25 |
| 95th Queue (ft) | 52 | 73 | 49 |
| Link Distance (ft) | 285 | 433 | |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | 100 |
| Storage Blk Time (%) | | 0 | |
| Queuing Penalty (veh) | | 0 | |

## Intersection: 15: US 321 & 13th Street U-turn

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 16: 15th St Connector & US 321

| Movement | NE |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 31 |
| Average Queue (ft) | 12 |
| 95th Queue (ft) | 34 |
| Link Distance (ft) | 433 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 32: 15 St SW & 1st Street SW Connector/2nd Avenue SW

| Movement | NB | SB |
|---|---|---|
| Directions Served | TR | LT |
| Maximum Queue (ft) | 68 | 72 |
| Average Queue (ft) | 15 | 43 |
| 95th Queue (ft) | 45 | 68 |
| Link Distance (ft) | 298 | 285 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 33: 14th Street SW & 2nd Avenue SW

| Movement | EB | NB | SB |
|---|---|---|---|
| Directions Served | TR | TR | LT |
| Maximum Queue (ft) | 18 | 63 | 50 |
| Average Queue (ft) | 1 | 31 | 27 |
| 95th Queue (ft) | 6 | 52 | 41 |
| Link Distance (ft) | 618 | 349 | 269 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 34: 2nd Avenue SW & 13th Street SW

| Movement | NB | NB | SB |
|---|---|---|---|
| Directions Served | T | R | LT |
| Maximum Queue (ft) | 47 | 74 | 27 |
| Average Queue (ft) | 22 | 26 | 14 |
| 95th Queue (ft) | 44 | 48 | 35 |
| Link Distance (ft) | 556 | | 304 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | 100 | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 37: 14th Street SW & 1st Avenue SW

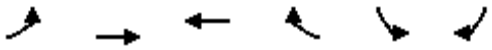
| Movement | NB | SB |
|---|---|---|
| Directions Served | LT | TR |
| Maximum Queue (ft) | 85 | 82 |
| Average Queue (ft) | 41 | 27 |
| 95th Queue (ft) | 74 | 58 |
| Link Distance (ft) | 269 | 446 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 38: 13th Street SW & 1st Avenue SW

| Movement | NB | SB |
|---|---|---|
| Directions Served | LT | TR |
| Maximum Queue (ft) | 86 | 29 |
| Average Queue (ft) | 26 | 8 |
| 95th Queue (ft) | 54 | 29 |
| Link Distance (ft) | 304 | 179 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Network Summary

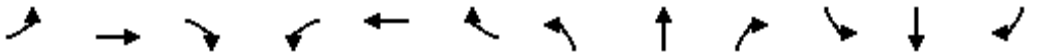
Network wide Queuing Penalty: 0



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 1511 | 1850 | 102 | 0 | 86 |
| Future Volume (Veh/h) | 0 | 1511 | 1850 | 102 | 0 | 86 |
| Sign Control | | Free | Free | | Yield | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 1679 | 2056 | 113 | 0 | 96 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 2056 | | | | 2616 | 685 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 2056 | | | | 2616 | 685 |
| tC, single (s) | 4.2 | | | | 6.9 | 7.0 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 100 | | | | 100 | 75 |
| cM capacity (veh/h) | 258 | | | | 19 | 383 |

| Direction, Lane # | EB 1 | EB 2 | EB 3 | WB 1 | WB 2 | WB 3 | WB 4 | SB 1 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 560 | 560 | 560 | 685 | 685 | 685 | 113 | 96 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 | 0 | 0 | 113 | 96 |
| cSH | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 383 |
| Volume to Capacity | 0.33 | 0.33 | 0.33 | 0.40 | 0.40 | 0.40 | 0.07 | 0.25 |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 24 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 17.5 |
| Lane LOS | | | | | | | | C |
| Approach Delay (s) | 0.0 | | | 0.0 | | | | 17.5 |
| Approach LOS | | | | | | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.4 | | |
| Intersection Capacity Utilization | 47.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



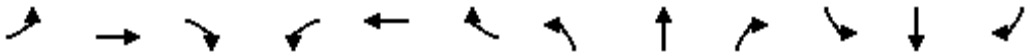
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 4 | 436 | 59 | 5 | 45 | 0 | 0 | 178 | 17 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 4 | 436 | 59 | 5 | 45 | 0 | 0 | 178 | 17 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 4 | 484 | 66 | 6 | 50 | 0 | 0 | 198 | 19 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | 4 |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 550 | | | 0 | | | 358 | 558 | 0 | 550 | 525 | 275 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 550 | | | 0 | | | 358 | 558 | 0 | 550 | 525 | 275 |
| tC, single (s) | 4.2 | | | 4.2 | | | 7.6 | 6.6 | 7.0 | 7.6 | 6.6 | 7.0 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.6 | 4.1 | 3.4 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 98 | 88 | 100 | 100 | 56 | 97 |
| cM capacity (veh/h) | 1009 | | | 1607 | | | 358 | 427 | 1071 | 374 | 448 | 714 |

| Direction, Lane # | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 246 | 308 | 56 | 217 |
| Volume Left | 4 | 0 | 6 | 0 |
| Volume Right | 0 | 66 | 0 | 19 |
| cSH | 1607 | 1700 | 418 | 491 |
| Volume to Capacity | 0.00 | 0.18 | 0.13 | 0.44 |
| Queue Length 95th (ft) | 0 | 0 | 11 | 56 |
| Control Delay (s) | 0.1 | 0.0 | 14.9 | 18.4 |
| Lane LOS | A | | B | C |
| Approach Delay (s) | 0.1 | | 14.9 | 18.4 |
| Approach LOS | | | B | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 5.9 | | |
| Intersection Capacity Utilization | 30.7% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

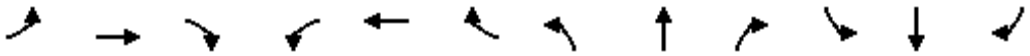
Intersection Sign configuration not allowed in HCM analysis.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 45 | 277 | 13 | 0 | 0 | 0 | 0 | 4 | 9 | 187 | 4 | 0 |
| Future Volume (Veh/h) | 45 | 277 | 13 | 0 | 0 | 0 | 0 | 4 | 9 | 187 | 4 | 0 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 50 | 308 | 14 | 0 | 0 | 0 | 0 | 4 | 10 | 208 | 4 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 0 | | | 322 | | | 417 | 415 | 161 | 266 | 422 | 0 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 0 | | | 322 | | | 417 | 415 | 161 | 266 | 422 | 0 |
| tC, single (s) | 4.2 | | | 4.2 | | | 7.7 | 6.7 | 7.1 | 7.6 | 6.6 | 7.0 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.6 | 4.1 | 3.4 | 3.6 | 4.1 | 3.4 |
| p0 queue free % | 97 | | | 100 | | | 100 | 99 | 99 | 67 | 99 | 100 |
| cM capacity (veh/h) | 1614 | | | 1227 | | | 491 | 497 | 837 | 628 | 497 | 1071 |

| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 204 | 168 | 14 | 212 |
| Volume Left | 50 | 0 | 0 | 208 |
| Volume Right | 0 | 14 | 10 | 0 |
| cSH | 1614 | 1700 | 700 | 625 |
| Volume to Capacity | 0.03 | 0.10 | 0.02 | 0.34 |
| Queue Length 95th (ft) | 2 | 0 | 2 | 37 |
| Control Delay (s) | 2.0 | 0.0 | 10.2 | 13.7 |
| Lane LOS | A | | B | B |
| Approach Delay (s) | 1.1 | | 10.2 | 13.7 |
| Approach LOS | | | B | B |

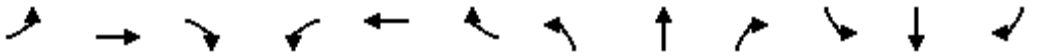
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 5.8 | | | |
| Intersection Capacity Utilization | 33.3% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 60 | 239 | 176 | 0 | 0 | 0 | 0 | 5 | 92 | 79 | 82 | 0 |
| Future Volume (Veh/h) | 60 | 239 | 176 | 0 | 0 | 0 | 0 | 5 | 92 | 79 | 82 | 0 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 67 | 266 | 196 | 0 | 0 | 0 | 0 | 6 | 102 | 88 | 91 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 0 | | | 462 | | | 544 | 498 | 231 | 372 | 596 | 0 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 0 | | | 462 | | | 544 | 498 | 231 | 372 | 596 | 0 |
| tC, single (s) | 4.2 | | | 4.2 | | | 7.6 | 6.6 | 7.0 | 7.6 | 6.6 | 7.0 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 100 | | | 100 | 99 | 87 | 81 | 77 | 100 |
| cM capacity (veh/h) | 1614 | | | 1088 | | | 335 | 451 | 768 | 461 | 394 | 1078 |

| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 200 | 329 | 108 | 179 |
| Volume Left | 67 | 0 | 0 | 88 |
| Volume Right | 0 | 196 | 102 | 0 |
| cSH | 1614 | 1700 | 739 | 424 |
| Volume to Capacity | 0.04 | 0.19 | 0.15 | 0.42 |
| Queue Length 95th (ft) | 3 | 0 | 13 | 51 |
| Control Delay (s) | 2.7 | 0.0 | 10.7 | 19.5 |
| Lane LOS | A | | B | C |
| Approach Delay (s) | 1.0 | | 10.7 | 19.5 |
| Approach LOS | | | B | C |

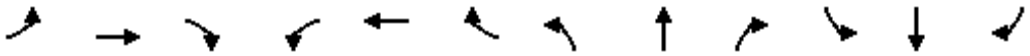
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 6.4 | | |
| Intersection Capacity Utilization | 36.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 11 | 367 | 36 | 0 | 0 | 0 | 0 | 24 | 78 | 6 | 50 | 0 |
| Future Volume (Veh/h) | 11 | 367 | 36 | 0 | 0 | 0 | 0 | 24 | 78 | 6 | 50 | 0 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 12 | 408 | 40 | 0 | 0 | 0 | 0 | 27 | 87 | 7 | 56 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | 4 | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 0 | | | 448 | | | 480 | 452 | 224 | 285 | 472 | 0 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 0 | | | 448 | | | 480 | 452 | 224 | 285 | 472 | 0 |
| tC, single (s) | 4.2 | | | 4.2 | | | 7.6 | 6.6 | 7.0 | 7.6 | 6.6 | 7.0 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.6 | 4.1 | 3.4 | 3.6 | 4.1 | 3.4 |
| p0 queue free % | 99 | | | 100 | | | 100 | 94 | 89 | 99 | 88 | 100 |
| cM capacity (veh/h) | 1614 | | | 1095 | | | 414 | 487 | 764 | 534 | 474 | 1068 |

| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 216 | 244 | 114 | 63 |
| Volume Left | 12 | 0 | 0 | 7 |
| Volume Right | 0 | 40 | 87 | 0 |
| cSH | 1614 | 1700 | 1001 | 480 |
| Volume to Capacity | 0.01 | 0.14 | 0.11 | 0.13 |
| Queue Length 95th (ft) | 1 | 0 | 10 | 11 |
| Control Delay (s) | 0.5 | 0.0 | 10.9 | 13.6 |
| Lane LOS | A | | B | B |
| Approach Delay (s) | 0.2 | | 10.9 | 13.6 |
| Approach LOS | | | B | B |

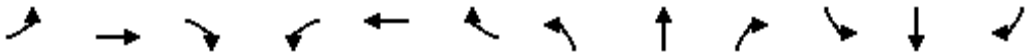
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.5 | | |
| Intersection Capacity Utilization | 29.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 121 | 497 | 66 | 15 | 50 | 0 | 0 | 38 | 25 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 121 | 497 | 66 | 15 | 50 | 0 | 0 | 38 | 25 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 134 | 552 | 73 | 17 | 56 | 0 | 0 | 42 | 28 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 625 | | | 0 | | | 593 | 893 | 0 | 884 | 856 | 312 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 625 | | | 0 | | | 593 | 893 | 0 | 884 | 856 | 312 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.6 | 6.6 | 7.0 | 7.6 | 6.6 | 7.0 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 92 | | | 94 | 78 | 100 | 100 | 84 | 96 |
| cM capacity (veh/h) | 952 | | | 1622 | | | 305 | 253 | 1078 | 185 | 268 | 680 |

| Direction, Lane # | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 410 | 349 | 73 | 70 |
| Volume Left | 134 | 0 | 17 | 0 |
| Volume Right | 0 | 73 | 0 | 28 |
| cSH | 1622 | 1700 | 263 | 353 |
| Volume to Capacity | 0.08 | 0.21 | 0.28 | 0.20 |
| Queue Length 95th (ft) | 7 | 0 | 27 | 18 |
| Control Delay (s) | 2.9 | 0.0 | 23.8 | 17.7 |
| Lane LOS | A | | C | C |
| Approach Delay (s) | 1.6 | | 23.8 | 17.7 |
| Approach LOS | | | C | C |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 4.6 | | | |
| Intersection Capacity Utilization | 36.2% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 61 | 603 | 8 | 33 | 4 | 0 | 0 | 4 | 4 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 61 | 603 | 8 | 33 | 4 | 0 | 0 | 4 | 4 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 68 | 670 | 9 | 37 | 4 | 0 | 0 | 4 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 679 | | | 0 | | | 477 | 815 | 0 | 812 | 810 | 340 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 679 | | | 0 | | | 477 | 815 | 0 | 812 | 810 | 340 |
| tC, single (s) | 4.2 | | | 4.2 | | | 7.6 | 6.6 | 7.0 | 7.6 | 6.6 | 7.0 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.6 | 4.1 | 3.4 | 3.6 | 4.1 | 3.4 |
| p0 queue free % | 100 | | | 96 | | | 92 | 99 | 100 | 100 | 99 | 99 |
| cM capacity (veh/h) | 896 | | | 1607 | | | 438 | 288 | 1068 | 252 | 292 | 645 |

| Direction, Lane # | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 403 | 344 | 41 | 8 |
| Volume Left | 68 | 0 | 37 | 0 |
| Volume Right | 0 | 9 | 0 | 4 |
| cSH | 1607 | 1700 | 417 | 402 |
| Volume to Capacity | 0.04 | 0.20 | 0.10 | 0.02 |
| Queue Length 95th (ft) | 3 | 0 | 8 | 2 |
| Control Delay (s) | 1.6 | 0.0 | 14.6 | 14.1 |
| Lane LOS | A | | B | B |
| Approach Delay (s) | 0.8 | | 14.6 | 14.1 |
| Approach LOS | | | B | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.7 | | | |
| Intersection Capacity Utilization | 34.1% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

## Summary of All Intervals

| Start Time | 4:50 |
|---|---|
| End Time | 6:00 |
| Total Time (min) | 70 |
| Time Recorded (min) | 60 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 5024 |
| Vehs Exited | 5031 |
| Starting Vehs | 127 |
| Ending Vehs | 120 |
| Travel Distance (mi) | 4774 |
| Travel Time (hr) | 123.6 |
| Total Delay (hr) | 9.6 |
| Total Stops | 1024 |
| Fuel Used (gal) | 155.7 |

## Interval #0 Information Seeding

| Start Time | 4:50 |
|---|---|
| End Time | 5:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 5:00 |
|---|---|
| End Time | 6:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 5024 |
|---|---|
| Vehs Exited | 5031 |
| Starting Vehs | 127 |
| Ending Vehs | 120 |
| Travel Distance (mi) | 4774 |
| Travel Time (hr) | 123.6 |
| Total Delay (hr) | 9.6 |
| Total Stops | 1024 |
| Fuel Used (gal) | 155.7 |

## Intersection: 3: US 321 & US 321 NB Off Ramp

| Movement | SB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 53 |
| Average Queue (ft) | 27 |
| 95th Queue (ft) | 52 |
| Link Distance (ft) | 556 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 10: 15 St SW/15th St Connector & 1st Avenue SW

| Movement | WB | NB | SB | SB |
|---|---|---|---|---|
| Directions Served | TR | LT | T | R |
| Maximum Queue (ft) | 19 | 31 | 72 | 49 |
| Average Queue (ft) | 1 | 27 | 42 | 11 |
| 95th Queue (ft) | 6 | 44 | 67 | 37 |
| Link Distance (ft) | 683 | 285 | 433 | |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | | | 100 |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 15: US 321 & 13th Street U-turn

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 16: 15th St Connector & US 321

| Movement | NE |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 31 |
| Average Queue (ft) | 8 |
| 95th Queue (ft) | 28 |
| Link Distance (ft) | 433 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 32: 15 St SW & 1st Street SW Connector/2nd Avenue SW

| Movement | NB | SB |
|---|---|---|
| Directions Served | TR | LT |
| Maximum Queue (ft) | 49 | 93 |
| Average Queue (ft) | 11 | 44 |
| 95th Queue (ft) | 37 | 74 |
| Link Distance (ft) | 298 | 285 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 33: 14th Street SW & 2nd Avenue SW

| Movement | EB | NB | SB |
|---|---|---|---|
| Directions Served | TR | TR | LT |
| Maximum Queue (ft) | 17 | 45 | 142 |
| Average Queue (ft) | 1 | 23 | 48 |
| 95th Queue (ft) | 6 | 42 | 97 |
| Link Distance (ft) | 618 | 349 | 269 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 34: 2nd Avenue SW & 13th Street SW

| Movement | EB | NB | NB | SB |
|---|---|---|---|---|
| Directions Served | LT | T | R | LT |
| Maximum Queue (ft) | 26 | 28 | 73 | 49 |
| Average Queue (ft) | 1 | 12 | 29 | 24 |
| 95th Queue (ft) | 9 | 33 | 56 | 39 |
| Link Distance (ft) | 527 | 556 | | 304 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | | 100 | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 37: 14th Street SW & 1st Avenue SW

| Movement | NB | SB |
|---|---|---|
| Directions Served | LT | TR |
| Maximum Queue (ft) | 107 | 64 |
| Average Queue (ft) | 32 | 19 |
| 95th Queue (ft) | 72 | 36 |
| Link Distance (ft) | 269 | 446 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 38: 13th Street SW & 1st Avenue SW

| Movement | NB | SB |
|---|---|---|
| Directions Served | LT | TR |
| Maximum Queue (ft) | 49 | 49 |
| Average Queue (ft) | 18 | 9 |
| 95th Queue (ft) | 41 | 33 |
| Link Distance (ft) | 304 | 179 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Network Summary

Network wide Queuing Penalty: 0

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 201 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Freeway Number of Lanes, N | 2 | Downstream Adj Ramp | |
|---|---|---|---|---|---|
| ☐ Yes | ☐ On | Ramp Number of Lanes, N | 1 | ☑ Yes | ☑ On |
| ☑ No | ☐ Off | Acceleration Lane Length, $L_A$ | | ☐ No | ☐ Off |
| $L_{up}$ = | ft | Deceleration Lane Length $L_D$ | 100 | $L_{down}$ = | 200 ft |
| $V_u$ = | veh/h | Freeway Volume, $V_F$ | 1650 | $V_D$ = | 59 veh/h |
| | | Ramp Volume, $V_R$ | 116 | | |
| | | Freeway Free-Flow Speed, $S_{FF}$ | 55.0 | | |
| | | Ramp Free-Flow Speed, $S_{FR}$ | 35.0 | | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1650 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 1971 |
| Ramp | 116 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 139 |
| UpStream | | | | | | | | |
| DownStream | 59 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 70 |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = using Equation (Exhibit 13-6)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$M_S$ = (Exibit 13-11)

$S_R$= mph (Exhibit 13-11)

$S_0$= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)

$V_{12}$ = 1971 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 1971 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 1832 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 139 | Exhibit 13-10 | 2000 | No |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 1971 | Exhibit 13-8 | 4400:All | No |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = 20.3 (pc/mi/ln)

LOS = C (Exhibit 13-2)

### Speed Determination

$D_s$ = 0.441 (Exhibit 13-12)

$S_R$= 49.3 mph (Exhibit 13-12)

$S_0$= N/A mph (Exhibit 13-12)

S = 49.3 mph (Exhibit 13-13)



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# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 201 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
$L_{up}$ = ft
$V_u$ = veh/h

| | |
|---|---|
| Freeway Number of Lanes, N | 2 |
| Ramp Number of Lanes, N | 1 |
| Acceleration Lane Length, $L_A$ | |
| Deceleration Lane Length $L_D$ | 100 |
| Freeway Volume, $V_F$ | 1952 |
| Ramp Volume, $V_R$ | 102 |
| Freeway Free-Flow Speed, $S_{FF}$ | 55.0 |
| Ramp Free-Flow Speed, $S_{FR}$ | 35.0 |

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
$L_{down}$ = 200 ft
$V_D$ = 86 veh/h

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1952 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2332 |
| Ramp | 102 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 122 |
| UpStream | | | | | | | | |
| DownStream | 86 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 103 |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$
$L_{EQ}$ = (Equation 13-6 or 13-7)
$P_{FM}$ = using Equation (Exhibit 13-6)
$V_{12}$ = pc/h
$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)
Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No
Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No
If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$
$D_R$ = (pc/mi/ln)
LOS = (Exhibit 13-2)

### Speed Determination

$M_S$ = (Exibit 13-11)
$S_R$= mph (Exhibit 13-11)
$S_0$= mph (Exhibit 13-11)
S = mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$
$L_{EQ}$ = (Equation 13-12 or 13-13)
$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)
$V_{12}$ = 2332 pc/h
$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)
Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No
Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No
If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 2332 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 2210 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 122 | Exhibit 13-10 | 2000 | No |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 2332 | Exhibit 13-8 | 4400:All | No |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$
$D_R$ = 23.4 (pc/mi/ln)
LOS = C (Exhibit 13-2)

### Speed Determination

$D_s$ = 0.439 (Exhibit 13-12)
$S_R$= 49.3 mph (Exhibit 13-12)
$S_0$= N/A mph (Exhibit 13-12)
S = 49.3 mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 202 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Downstream Adj Ramp |
|---|---|---|
| ☑ Yes ☐ On | Freeway Number of Lanes, N: 2 | ☐ Yes ☐ On |
| ☐ No ☑ Off | Ramp Number of Lanes, N: 1 | ☑ No ☐ Off |
| $L_{up}$ = 200 ft | Acceleration Lane Length, $L_A$: 500 | $L_{down}$ = ft |
| $V_u$ = 182 veh/h | Deceleration Lane Length $L_D$: | $V_D$ = veh/h |
| | Freeway Volume, $V_F$: 1759 | |
| | Ramp Volume, $V_R$: 98 | |
| | Freeway Free-Flow Speed, $S_{FF}$: 55.0 | |
| | Ramp Free-Flow Speed, $S_{FR}$: 35.0 | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1759 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2101 |
| Ramp | 98 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 117 |
| UpStream | 182 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 217 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = 1.000 using Equation (Exhibit 13-6)

$V_{12}$ = 2101 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 2218 | Exhibit 13-8 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 2218 | Exhibit 13-8 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$

$D_R$ = 19.6 (pc/mi/ln)

LOS = B (Exhibit 13-2)

### Speed Determination

$M_S$ = 0.322 (Exibit 13-11)

$S_R$ = 50.8 mph (Exhibit 13-11)

$S_0$ = N/A mph (Exhibit 13-11)

S = 50.8 mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = using Equation (Exhibit 13-7)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 13-8 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 13-8 | | |
| $V_R$ | | Exhibit 13-10 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$D_s$ = (Exhibit 13-12)

$S_R$ = mph (Exhibit 13-12)

$S_0$ = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 202 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Downstream Adj Ramp |
|---|---|---|
| ☑ Yes ☐ On | Freeway Number of Lanes, N: 2 | ☐ Yes ☐ On |
| ☐ No ☑ Off | Ramp Number of Lanes, N: 1 | ☑ No ☐ Off |
| $L_{up}$ = 200 ft | Acceleration Lane Length, $L_A$: 500 | $L_{down}$ = ft |
| $V_u$ = 195 veh/h | Deceleration Lane Length $L_D$: | $V_D$ = veh/h |
| | Freeway Volume, $V_F$: 1407 | |
| | Ramp Volume, $V_R$: 104 | |
| | Freeway Free-Flow Speed, $S_{FF}$: 55.0 | |
| | Ramp Free-Flow Speed, $S_{FR}$: 35.0 | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1407 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 1681 |
| Ramp | 104 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 124 |
| UpStream | 195 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 233 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = 1.000 using Equation (Exhibit 13-6)

$V_{12}$ = 1681 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 1805 | Exhibit 13-8 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 1805 | Exhibit 13-8 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$

$D_R$ = 16.4 (pc/mi/ln)

LOS = B (Exhibit 13-2)

### Speed Determination

$M_S$ = 0.310 (Exibit 13-11)

$S_R$ = 51.0 mph (Exhibit 13-11)

$S_0$ = N/A mph (Exhibit 13-11)

S = 51.0 mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = using Equation (Exhibit 13-7)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 13-8 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 13-8 | | |
| $V_R$ | | Exhibit 13-10 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$D_s$ = (Exhibit 13-12)

$S_R$ = mph (Exhibit 13-12)

$S_0$ = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 203 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Downstream Adj Ramp |
|---|---|---|
| ☑ Yes ☐ On | Freeway Number of Lanes, N: 2 | ☐ Yes ☐ On |
| ☐ No ☑ Off | Ramp Number of Lanes, N: 1 | ☑ No ☐ Off |
| $L_{up}$ = 200 ft | Acceleration Lane Length, $L_A$: 500 | $L_{down}$ = ft |
| $V_u$ = 116 veh/h | Deceleration Lane Length $L_D$: | $V_D$ = veh/h |
| | Freeway Volume, $V_F$: 1650 | |
| | Ramp Volume, $V_R$: 59 | |
| | Freeway Free-Flow Speed, $S_{FF}$: 55.0 | |
| | Ramp Free-Flow Speed, $S_{FR}$: 35.0 | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1650 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 1971 |
| Ramp | 59 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 70 |
| UpStream | 116 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 139 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = 1.000 using Equation (Exhibit 13-6)

$V_{12}$ = 1971 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 2041 | Exhibit 13-8 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 2041 | Exhibit 13-8 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$

$D_R$ = 18.2 (pc/mi/ln)

LOS = B (Exhibit 13-2)

### Speed Determination

$M_S$ = 0.316 (Exibit 13-11)

$S_R$ = 50.9 mph (Exhibit 13-11)

$S_0$ = N/A mph (Exhibit 13-11)

S = 50.9 mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = using Equation (Exhibit 13-7)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 13-8 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 13-8 | | |
| $V_R$ | | Exhibit 13-10 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$D_s$ = (Exhibit 13-12)

$S_R$ = mph (Exhibit 13-12)

$S_0$ = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 203 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Downstream Adj Ramp |
|---|---|---|
| ☑ Yes ☐ On | Freeway Number of Lanes, N: 2 | ☐ Yes ☐ On |
| ☐ No ☑ Off | Ramp Number of Lanes, N: 1 | ☑ No ☐ Off |
| $L_{up}$ = 200 ft | Acceleration Lane Length, $L_A$: 500 | $L_{down}$ = ft |
| $V_u$ = 102 veh/h | Deceleration Lane Length $L_D$: | $V_D$ = veh/h |
| | Freeway Volume, $V_F$: 1850 | |
| | Ramp Volume, $V_R$: 86 | |
| | Freeway Free-Flow Speed, $S_{FF}$: 55.0 | |
| | Ramp Free-Flow Speed, $S_{FR}$: 35.0 | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1850 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2210 |
| Ramp | 86 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 103 |
| UpStream | 102 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 122 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = 1.000 using Equation (Exhibit 13-6)

$V_{12}$ = 2210 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 2313 | Exhibit 13-8 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 2313 | Exhibit 13-8 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$

$D_R$ = 20.3 (pc/mi/ln)

LOS = C (Exhibit 13-2)

### Speed Determination

$M_S$ = 0.325 (Exibit 13-11)

$S_R$ = 50.8 mph (Exhibit 13-11)

$S_0$ = N/A mph (Exhibit 13-11)

S = 50.8 mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = using Equation (Exhibit 13-7)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 13-8 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 13-8 | | |
| $V_R$ | | Exhibit 13-10 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$D_s$ = (Exhibit 13-12)

$S_R$ = mph (Exhibit 13-12)

$S_0$ = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 204 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
$L_{up}$ = ft
$V_u$ = veh/h

| | |
|---|---|
| Freeway Number of Lanes, N | 2 |
| Ramp Number of Lanes, N | 1 |
| Acceleration Lane Length, $L_A$ | |
| Deceleration Lane Length $L_D$ | 100 |
| Freeway Volume, $V_F$ | 1941 |
| Ramp Volume, $V_R$ | 182 |
| Freeway Free-Flow Speed, $S_{FF}$ | 55.0 |
| Ramp Free-Flow Speed, $S_{FR}$ | 35.0 |

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
$L_{down}$ = 200 ft
$V_D$ = 98 veh/h

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1941 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2318 |
| Ramp | 182 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 217 |
| UpStream | | | | | | | | |
| DownStream | 98 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 117 |

### Merge Areas

#### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$
$L_{EQ}$ = (Equation 13-6 or 13-7)
$P_{FM}$ = using Equation (Exhibit 13-6)
$V_{12}$ = pc/h
$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)
Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No
Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No
If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

#### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

#### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

#### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$
$D_R$ = (pc/mi/ln)
LOS = (Exhibit 13-2)

#### Speed Determination

$M_S$ = (Exibit 13-11)
$S_R$= mph (Exhibit 13-11)
$S_0$= mph (Exhibit 13-11)
S = mph (Exhibit 13-13)

### Diverge Areas

#### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$
$L_{EQ}$ = (Equation 13-12 or 13-13)
$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)
$V_{12}$ = 2318 pc/h
$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)
Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No
Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No
If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

#### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 2318 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 2101 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 217 | Exhibit 13-10 | 2000 | No |

#### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 2318 | Exhibit 13-8 | 4400:All | No |

#### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$
$D_R$ = 23.3 (pc/mi/ln)
LOS = C (Exhibit 13-2)

#### Speed Determination

$D_s$ = 0.448 (Exhibit 13-12)
$S_R$= 49.2 mph (Exhibit 13-12)
$S_0$= N/A mph (Exhibit 13-12)
S = 49.2 mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 204 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Freeway Number of Lanes, N | 2 | Downstream Adj Ramp | |
|---|---|---|---|---|---|
| ☐ Yes | ☐ On | Ramp Number of Lanes, N | 1 | ☑ Yes | ☑ On |
| ☑ No | ☐ Off | Acceleration Lane Length, $L_A$ | | ☐ No | ☐ Off |
| $L_{up}$ = | ft | Deceleration Lane Length $L_D$ | 100 | $L_{down}$ = | 200 ft |
| $V_u$ = | veh/h | Freeway Volume, $V_F$ | 1602 | $V_D$ = | 104 veh/h |
| | | Ramp Volume, $V_R$ | 195 | | |
| | | Freeway Free-Flow Speed, $S_{FF}$ | 55.0 | | |
| | | Ramp Free-Flow Speed, $S_{FR}$ | 35.0 | | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1602 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 1913 |
| Ramp | 195 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 233 |
| UpStream | | | | | | | | |
| DownStream | 104 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 124 |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = using Equation (Exhibit 13-6)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$M_S$ = (Exibit 13-11)

$S_R$= mph (Exhibit 13-11)

$S_0$= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)

$V_{12}$ = 1913 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 1913 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 1680 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 233 | Exhibit 13-10 | 2000 | No |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 1913 | Exhibit 13-8 | 4400:All | No |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = 19.8 (pc/mi/ln)

LOS = B (Exhibit 13-2)

### Speed Determination

$D_s$ = 0.449 (Exhibit 13-12)

$S_R$= 49.2 mph (Exhibit 13-12)

$S_0$= N/A mph (Exhibit 13-12)

S = 49.2 mph (Exhibit 13-13)

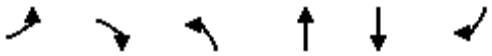
# APPENDIX E

## 2040 Build Alternative 13th Street – Partial Cloverleaf Interchange Synchro, SimTraffic & HCS Reports

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 9 | 104 | 127 | 127 | 68 | 100 |
| Future Volume (Veh/h) | 9 | 104 | 127 | 127 | 68 | 100 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 10 | 116 | 141 | 141 | 76 | 111 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 419 | 141 | | | 282 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 419 | 141 | | | 282 | |
| tC, single (s) | 6.9 | 7.0 | | | 4.2 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 98 | 87 | | | 94 | |
| cM capacity (veh/h) | 524 | 875 | | | 1263 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 126 | 94 | 188 | 113 | 74 |
| Volume Left | 10 | 0 | 0 | 76 | 0 |
| Volume Right | 116 | 0 | 141 | 0 | 0 |
| cSH | 831 | 1700 | 1700 | 1263 | 1700 |
| Volume to Capacity | 0.15 | 0.06 | 0.11 | 0.06 | 0.04 |
| Queue Length 95th (ft) | 13 | 0 | 0 | 5 | 0 |
| Control Delay (s) | 10.1 | 0.0 | 0.0 | 5.6 | 0.0 |
| Lane LOS | B | | | A | |
| Approach Delay (s) | 10.1 | 0.0 | | 3.4 | |
| Approach LOS | B | | | | |

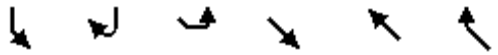
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 3.2 | | | |
| Intersection Capacity Utilization | 29.3% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 90 | 92 | 16 | 164 | 11 | 98 |
| Future Volume (Veh/h) | 90 | 92 | 16 | 164 | 11 | 98 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 100 | 102 | 18 | 182 | 12 | 109 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 194 | 60 | 121 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 194 | 60 | 121 | | | |
| tC, single (s) | 6.9 | 7.0 | 4.2 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 87 | 90 | 99 | | | |
| cM capacity (veh/h) | 762 | 986 | 1450 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 202 | 79 | 121 | 8 | 113 |
| Volume Left | 100 | 18 | 0 | 0 | 0 |
| Volume Right | 102 | 0 | 0 | 0 | 109 |
| cSH | 861 | 1450 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.23 | 0.01 | 0.07 | 0.00 | 0.07 |
| Queue Length 95th (ft) | 23 | 1 | 0 | 0 | 0 |
| Control Delay (s) | 10.5 | 1.8 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | A | | | |
| Approach Delay (s) | 10.5 | 0.7 | | 0.0 | |
| Approach LOS | B | | | | |

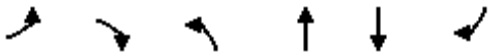
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 4.3 | | | |
| Intersection Capacity Utilization | 25.6% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |



| Movement | SBL | SBR | SEL | SET | NWT | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 195 | 0 | 1873 | 1407 | 113 |
| Future Volume (Veh/h) | 0 | 195 | 0 | 1873 | 1407 | 113 |
| Sign Control | Yield | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 217 | 0 | 2081 | 1563 | 126 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 2257 | 521 | 1563 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 2257 | 521 | 1563 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 57 | 100 | | | |
| cM capacity (veh/h) | 35 | 500 | 419 | | | |

| Direction, Lane # | SB 1 | SE 1 | SE 2 | SE 3 | NW 1 | NW 2 | NW 3 | NW 4 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 217 | 694 | 694 | 694 | 521 | 521 | 521 | 126 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 217 | 0 | 0 | 0 | 0 | 0 | 0 | 126 |
| cSH | 500 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.43 | 0.41 | 0.41 | 0.41 | 0.31 | 0.31 | 0.31 | 0.07 |
| Queue Length 95th (ft) | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Control Delay (s) | 17.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | C | | | | | | | |
| Approach Delay (s) | 17.6 | 0.0 | | | 0.0 | | | |
| Approach LOS | C | | | | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.0 | | | |
| Intersection Capacity Utilization | 45.9% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 114 | 0 | 1602 | 1759 | 182 |
| Future Volume (Veh/h) | 0 | 114 | 0 | 1602 | 1759 | 182 |
| Sign Control | Yield | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 127 | 0 | 1780 | 1954 | 202 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 2547 | 651 | 1954 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 2547 | 651 | 1954 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 69 | 100 | | | |
| cM capacity (veh/h) | 22 | 411 | 295 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | SB 4 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 127 | 593 | 593 | 593 | 651 | 651 | 651 | 202 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 127 | 0 | 0 | 0 | 0 | 0 | 0 | 202 |
| cSH | 411 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.31 | 0.35 | 0.35 | 0.35 | 0.38 | 0.38 | 0.38 | 0.12 |
| Queue Length 95th (ft) | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Control Delay (s) | 17.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | C | | | | | | | |
| Approach Delay (s) | 17.6 | 0.0 | | | 0.0 | | | |
| Approach LOS | C | | | | | | | |

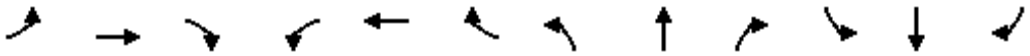
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 0.6 | | | |
| Intersection Capacity Utilization | 47.7% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 4 | 461 | 8 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 4 | 461 | 8 | 0 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 4 | 512 | 9 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 0 | | 264 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 0 | | 264 | 0 |
| tC, single (s) | | | 4.1 | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 99 | 100 |
| cM capacity (veh/h) | | | 1622 | | 701 | 1084 |

| Direction, Lane # | WB 1 | WB 2 | NB 1 |
|---|---|---|---|
| Volume Total | 175 | 341 | 9 |
| Volume Left | 4 | 0 | 9 |
| Volume Right | 0 | 0 | 0 |
| cSH | 1622 | 1700 | 701 |
| Volume to Capacity | 0.00 | 0.20 | 0.01 |
| Queue Length 95th (ft) | 0 | 0 | 1 |
| Control Delay (s) | 0.2 | 0.0 | 10.2 |
| Lane LOS | A | | B |
| Approach Delay (s) | 0.1 | | 10.2 |
| Approach LOS | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.2 | | |
| Intersection Capacity Utilization | 22.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

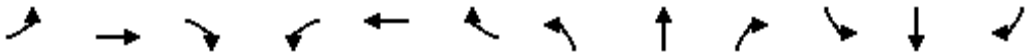
Intersection Sign configuration not allowed in HCM analysis.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 8 | 324 | 9 | 0 | 0 | 0 | 0 | 4 | 13 | 5 | 4 | 0 |
| Future Volume (Veh/h) | 8 | 324 | 9 | 0 | 0 | 0 | 0 | 4 | 13 | 5 | 4 | 0 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 9 | 360 | 10 | 0 | 0 | 0 | 0 | 4 | 14 | 6 | 4 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 0 | | | 370 | | | 385 | 383 | 185 | 214 | 388 | 0 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 0 | | | 370 | | | 385 | 383 | 185 | 214 | 388 | 0 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 100 | | | 100 | 99 | 98 | 99 | 99 | 100 |
| cM capacity (veh/h) | 1622 | | | 1185 | | | 543 | 546 | 826 | 705 | 542 | 1084 |

| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 189 | 190 | 18 | 10 |
| Volume Left | 9 | 0 | 0 | 6 |
| Volume Right | 0 | 10 | 14 | 0 |
| cSH | 1622 | 1700 | 741 | 629 |
| Volume to Capacity | 0.01 | 0.11 | 0.02 | 0.02 |
| Queue Length 95th (ft) | 0 | 0 | 2 | 1 |
| Control Delay (s) | 0.4 | 0.0 | 10.0 | 10.8 |
| Lane LOS | A | | A | B |
| Approach Delay (s) | 0.2 | | 10.0 | 10.8 |
| Approach LOS | | | A | B |

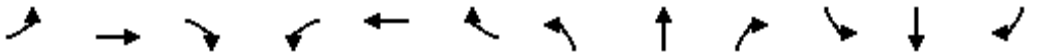
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 0.9 | | | |
| Intersection Capacity Utilization | 20.8% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 126 | 224 | 36 | 0 | 0 | 0 | 0 | 4 | 105 | 35 | 33 | 0 |
| Future Volume (Veh/h) | 126 | 224 | 36 | 0 | 0 | 0 | 0 | 4 | 105 | 35 | 33 | 0 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 140 | 249 | 40 | 0 | 0 | 0 | 0 | 4 | 117 | 39 | 37 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 0 | | | 289 | | | 568 | 549 | 144 | 524 | 569 | 0 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 0 | | | 289 | | | 568 | 549 | 144 | 524 | 569 | 0 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 91 | | | 100 | | | 100 | 99 | 87 | 89 | 91 | 100 |
| cM capacity (veh/h) | 1622 | | | 1270 | | | 352 | 404 | 877 | 351 | 393 | 1084 |

| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 264 | 164 | 121 | 76 |
| Volume Left | 140 | 0 | 0 | 39 |
| Volume Right | 0 | 40 | 117 | 0 |
| cSH | 1622 | 1700 | 844 | 370 |
| Volume to Capacity | 0.09 | 0.10 | 0.14 | 0.21 |
| Queue Length 95th (ft) | 7 | 0 | 12 | 19 |
| Control Delay (s) | 4.3 | 0.0 | 10.0 | 17.2 |
| Lane LOS | A | | A | C |
| Approach Delay (s) | 2.6 | | 10.0 | 17.2 |
| Approach LOS | | | A | C |

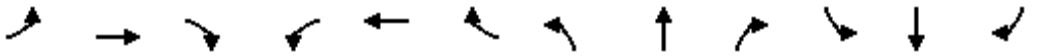
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 5.8 | | | |
| Intersection Capacity Utilization | 28.0% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 25 | 287 | 118 | 0 | 0 | 0 | 0 | 102 | 141 | 4 | 59 | 0 |
| Future Volume (Veh/h) | 25 | 287 | 118 | 0 | 0 | 0 | 0 | 102 | 141 | 4 | 59 | 0 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 28 | 319 | 131 | 0 | 0 | 0 | 0 | 113 | 157 | 4 | 66 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 0 | | | 450 | | | 474 | 440 | 225 | 429 | 506 | 0 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 0 | | | 450 | | | 474 | 440 | 225 | 429 | 506 | 0 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 98 | | | 100 | | | 100 | 77 | 80 | 99 | 86 | 100 |
| cM capacity (veh/h) | 1622 | | | 1107 | | | 416 | 501 | 778 | 332 | 459 | 1084 |

| Direction, Lane # | EB 1 | EB 2 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 188 | 290 | 113 | 157 | 4 | 66 |
| Volume Left | 28 | 0 | 0 | 0 | 4 | 0 |
| Volume Right | 0 | 131 | 0 | 157 | 0 | 0 |
| cSH | 1622 | 1700 | 501 | 778 | 332 | 459 |
| Volume to Capacity | 0.02 | 0.17 | 0.23 | 0.20 | 0.01 | 0.14 |
| Queue Length 95th (ft) | 1 | 0 | 21 | 19 | 1 | 12 |
| Control Delay (s) | 1.2 | 0.0 | 14.3 | 10.8 | 16.0 | 14.1 |
| Lane LOS | A | | B | B | C | B |
| Approach Delay (s) | 0.5 | | 12.3 | | 14.3 | |
| Approach LOS | | | B | | B | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 5.5 | | | |
| Intersection Capacity Utilization | 34.5% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

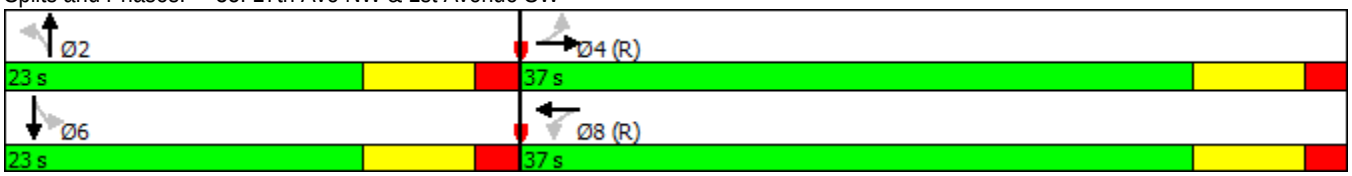


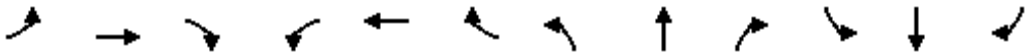
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 37 | 161 | 11 | 27 | 139 | 78 | 22 | 52 | 8 | 46 | 53 | 31 |
| Future Volume (vph) | 37 | 161 | 11 | 27 | 139 | 78 | 22 | 52 | 8 | 46 | 53 | 31 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 75 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 50 | | | 50 | | | 50 | | | 50 | | |
| Lane Util. 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 |
| Frt | | 0.993 | | | 0.957 | | | 0.980 | | | 0.968 | |
| Flt Protected | | 0.991 | | | 0.994 | | 0.950 | | | | 0.983 | |
| Satd. Flow (prot) | 0 | 1833 | 0 | 0 | 1772 | 0 | 1770 | 1825 | 0 | 0 | 1772 | 0 |
| Flt Permitted | | 0.917 | | | 0.955 | | 0.696 | | | | 0.855 | |
| Satd. Flow (perm) | 0 | 1696 | 0 | 0 | 1702 | 0 | 1296 | 1825 | 0 | 0 | 1542 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 634 | | | 290 | | | 373 | | | 463 | |
| Travel Time (s) | | 12.4 | | | 5.6 | | | 7.3 | | | 9.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 41 | 179 | 12 | 30 | 154 | 87 | 24 | 58 | 9 | 51 | 59 | 34 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 232 | 0 | 0 | 271 | 0 | 24 | 67 | 0 | 0 | 144 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 19.0 | 19.0 | | 19.0 | 19.0 | | 14.0 | 14.0 | | 14.0 | 14.0 | |
| Total Split (s) | 37.0 | 37.0 | | 37.0 | 37.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | |
| Total Split (%) | 61.7% | 61.7% | | 61.7% | 61.7% | | 38.3% | 38.3% | | 38.3% | 38.3% | |
| Maximum Green (s) | 30.0 | 30.0 | | 30.0 | 30.0 | | 16.0 | 16.0 | | 16.0 | 16.0 | |
| Yellow Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -2.0 | | | -2.0 | | -2.0 | -2.0 | | | -2.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | C-Min | C-Min | | C-Min | C-Min | | None | None | | None | None | |
| Act Effct Green (s) | | 41.0 | | | 41.0 | | 12.8 | 12.8 | | | 12.8 | |
| Actuated g/C Ratio | | 0.68 | | | 0.68 | | 0.21 | 0.21 | | | 0.21 | |
| v/c Ratio | | 0.20 | | | 0.23 | | 0.09 | 0.17 | | | 0.44 | |
| Control Delay | | 6.1 | | | 6.3 | | 17.9 | 19.0 | | | 23.9 | |
| Queue Delay | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | | 0.0 | |
| Total Delay | | 6.1 | | | 6.3 | | 17.9 | 19.0 | | | 23.9 | |
| LOS | | A | | | A | | B | B | | | C | |
| Approach Delay | | 6.1 | | | 6.3 | | | 18.7 | | | 23.9 | |
| Approach LOS | | A | | | A | | | B | | | C | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 50th (ft) | | 31 | | | 37 | | 7 | 20 | | | 46 | |
| Queue Length 95th (ft) | | 72 | | | 85 | | 21 | 43 | | | 83 | |
| Internal Link Dist (ft) | | 554 | | | 210 | | | 293 | | | 383 | |
| Turn Bay Length (ft) | | | | | | | 75 | | | | | |
| Base Capacity (vph) | | 1158 | | | 1162 | | 388 | 547 | | | 462 | |
| Starvation Cap Reductn | | 0 | | | 0 | | 0 | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | | | 0 | | 0 | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | | | 0 | | 0 | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.20 | | | 0.23 | | 0.06 | 0.12 | | | 0.31 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 60 | | | |
| Actuated Cycle Length: 60 | | | |
| Offset: 29 (48%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green | | | |
| Natural Cycle: 40 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.44 | | | |
| Intersection Signal Delay: 11.2 | | Intersection LOS: B | |
| Intersection Capacity Utilization 39.8% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 35: 17th Ave NW & 1st Avenue SW

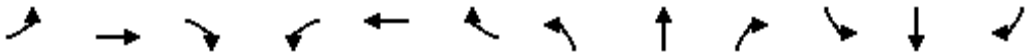




| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 37 | 478 | 15 | 58 | 61 | 0 | 0 | 35 | 65 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 37 | 478 | 15 | 58 | 61 | 0 | 0 | 35 | 65 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 41 | 531 | 17 | 64 | 68 | 0 | 0 | 39 | 72 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 548 | | | 0 | | | 439 | 630 | 0 | 656 | 622 | 274 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 548 | | | 0 | | | 439 | 630 | 0 | 656 | 622 | 274 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 97 | | | 84 | 82 | 100 | 100 | 90 | 90 |
| cM capacity (veh/h) | 1018 | | | 1622 | | | 409 | 387 | 1084 | 298 | 391 | 724 |

| Direction, Lane # | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 306 | 282 | 132 | 111 |
| Volume Left | 41 | 0 | 64 | 0 |
| Volume Right | 0 | 17 | 0 | 72 |
| cSH | 1622 | 1700 | 398 | 557 |
| Volume to Capacity | 0.03 | 0.17 | 0.33 | 0.20 |
| Queue Length 95th (ft) | 2 | 0 | 36 | 18 |
| Control Delay (s) | 1.2 | 0.0 | 18.5 | 13.1 |
| Lane LOS | A | | C | B |
| Approach Delay (s) | 0.6 | | 18.5 | 13.1 |
| Approach LOS | | | C | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 5.1 | | | |
| Intersection Capacity Utilization | 34.5% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 4 | 523 | 4 | 116 | 4 | 0 | 0 | 4 | 4 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 4 | 523 | 4 | 116 | 4 | 0 | 0 | 4 | 4 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 4 | 581 | 4 | 129 | 4 | 0 | 0 | 4 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 585 | | | 0 | | | 304 | 593 | 0 | 593 | 591 | 292 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 585 | | | 0 | | | 304 | 593 | 0 | 593 | 591 | 292 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 79 | 99 | 100 | 100 | 99 | 99 |
| cM capacity (veh/h) | 986 | | | 1622 | | | 616 | 416 | 1084 | 386 | 417 | 704 |

| Direction, Lane # | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 294 | 294 | 133 | 8 |
| Volume Left | 4 | 0 | 129 | 0 |
| Volume Right | 0 | 4 | 0 | 4 |
| cSH | 1622 | 1700 | 607 | 524 |
| Volume to Capacity | 0.00 | 0.17 | 0.22 | 0.02 |
| Queue Length 95th (ft) | 0 | 0 | 21 | 1 |
| Control Delay (s) | 0.1 | 0.0 | 12.6 | 12.0 |
| Lane LOS | A | | B | B |
| Approach Delay (s) | 0.1 | | 12.6 | 12.0 |
| Approach LOS | | | B | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.5 | | | |
| Intersection Capacity Utilization | 34.7% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

## Summary of All Intervals

| Start Time | 6:57 |
|---|---|
| End Time | 7:10 |
| Total Time (min) | 13 |
| Time Recorded (min) | 10 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 956 |
| Vehs Exited | 954 |
| Starting Vehs | 102 |
| Ending Vehs | 104 |
| Travel Distance (mi) | 709 |
| Travel Time (hr) | 18.0 |
| Total Delay (hr) | 1.7 |
| Total Stops | 281 |
| Fuel Used (gal) | 23.0 |

## Interval #0 Information Seeding

| Start Time | 6:57 |
|---|---|
| End Time | 7:00 |
| Total Time (min) | 3 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 7:00 |
|---|---|
| End Time | 7:10 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 956 |
|---|---|
| Vehs Exited | 954 |
| Starting Vehs | 102 |
| Ending Vehs | 104 |
| Travel Distance (mi) | 709 |
| Travel Time (hr) | 18.0 |
| Total Delay (hr) | 1.7 |
| Total Stops | 281 |
| Fuel Used (gal) | 23.0 |

## Intersection: 1: 13th Street SW & US 321 On/Off Ramp

| Movement | WB | SB |
|---|---|---|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 77 | 30 |
| Average Queue (ft) | 37 | 12 |
| 95th Queue (ft) | 71 | 35 |
| Link Distance (ft) | 527 | 145 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 2: 13th Street SW & US 321 SB Off Ramp

| Movement | EB | NB |
|---|---|---|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 79 | 53 |
| Average Queue (ft) | 60 | 11 |
| 95th Queue (ft) | 90 | 46 |
| Link Distance (ft) | 514 | 866 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 3: NB US 321 & US 321 NB Off Ramp

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 4: NB US 321 & US 321 SB Off Ramp

| Movement | EB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 171 |
| Average Queue (ft) | 34 |
| 95th Queue (ft) | 147 |
| Link Distance (ft) | 514 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 10: 15 St SW & 1st Avenue SW

| Movement | NB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 28 |
| Average Queue (ft) | 11 |
| 95th Queue (ft) | 32 |
| Link Distance (ft) | 258 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 15: NB US 321 & 13th Street U-turn

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 32: 15 St SW & 2nd Avenue SW & 1st Street SW Connector

| Movement | NB | SB |
|---|---|---|
| Directions Served | TR | LT |
| Maximum Queue (ft) | 28 | 26 |
| Average Queue (ft) | 11 | 10 |
| 95th Queue (ft) | 33 | 31 |
| Link Distance (ft) | 295 | 258 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 33: 14th Street SW & 2nd Avenue SW

| Movement | NB | SB |
|---|---|---|
| Directions Served | TR | LT |
| Maximum Queue (ft) | 40 | 26 |
| Average Queue (ft) | 25 | 20 |
| 95th Queue (ft) | 41 | 37 |
| Link Distance (ft) | 349 | 268 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 34: 2nd Avenue SW & 13th Street SW

| Movement | NB | NB | SB |
|---|---|---|---|
| Directions Served | T | R | T |
| Maximum Queue (ft) | 67 | 87 | 49 |
| Average Queue (ft) | 35 | 31 | 28 |
| 95th Queue (ft) | 66 | 77 | 56 |
| Link Distance (ft) | 145 | 145 | 292 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 37: 14th Street SW & 1st Avenue SW

| Movement | NB | SB |
|---|---|---|
| Directions Served | LT | TR |
| Maximum Queue (ft) | 47 | 61 |
| Average Queue (ft) | 29 | 26 |
| 95th Queue (ft) | 44 | 55 |
| Link Distance (ft) | 268 | 446 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 38: 13th Street SW & 1st Avenue SW

| Movement | NB | SB |
|---|---|---|
| Directions Served | LT | TR |
| Maximum Queue (ft) | 49 | 29 |
| Average Queue (ft) | 36 | 11 |
| 95th Queue (ft) | 54 | 35 |
| Link Distance (ft) | 292 | 179 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

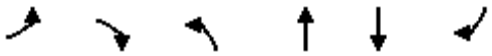
## Network Summary

Network wide Queuing Penalty: 0

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 16 | 98 | 88 | 91 | 90 | 141 |
| Future Volume (Veh/h) | 16 | 98 | 88 | 91 | 90 | 141 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 18 | 109 | 98 | 101 | 100 | 157 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 427 | 100 | | | 199 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 427 | 100 | | | 199 | |
| tC, single (s) | 6.9 | 7.0 | | | 4.2 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 96 | 88 | | | 93 | |
| cM capacity (veh/h) | 510 | 930 | | | 1356 | |

| Direction, Lane # | WB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 127 | 65 | 134 | 152 | 105 |
| Volume Left | 18 | 0 | 0 | 100 | 0 |
| Volume Right | 109 | 0 | 101 | 0 | 0 |
| cSH | 833 | 1700 | 1700 | 1356 | 1700 |
| Volume to Capacity | 0.15 | 0.04 | 0.08 | 0.07 | 0.06 |
| Queue Length 95th (ft) | 13 | 0 | 0 | 6 | 0 |
| Control Delay (s) | 10.1 | 0.0 | 0.0 | 5.4 | 0.0 |
| Lane LOS | B | | | A | |
| Approach Delay (s) | 10.1 | 0.0 | | 3.2 | |
| Approach LOS | B | | | | |

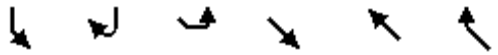
| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.6 | | |
| Intersection Capacity Utilization | 28.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 68 | 127 | 9 | 111 | 53 | 104 |
| Future Volume (Veh/h) | 68 | 127 | 9 | 111 | 53 | 104 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 76 | 141 | 10 | 123 | 59 | 116 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 198 | 88 | 175 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 198 | 88 | 175 | | | |
| tC, single (s) | 6.9 | 7.0 | 4.2 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 90 | 85 | 99 | | | |
| cM capacity (veh/h) | 760 | 947 | 1384 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 217 | 51 | 82 | 39 | 136 |
| Volume Left | 76 | 10 | 0 | 0 | 0 |
| Volume Right | 141 | 0 | 0 | 0 | 116 |
| cSH | 872 | 1384 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.25 | 0.01 | 0.05 | 0.02 | 0.08 |
| Queue Length 95th (ft) | 25 | 1 | 0 | 0 | 0 |
| Control Delay (s) | 10.5 | 1.5 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | A | | | |
| Approach Delay (s) | 10.5 | 0.6 | | 0.0 | |
| Approach LOS | B | | | | |

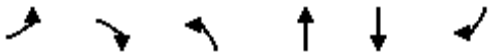
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 4.5 | | | |
| Intersection Capacity Utilization | 28.2% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |



| Movement | SBL | SBR | SEL | SET | NWT | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 181 | 0 | 1520 | 1759 | 114 |
| Future Volume (Veh/h) | 0 | 181 | 0 | 1520 | 1759 | 114 |
| Sign Control | Yield | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 201 | 0 | 1689 | 1954 | 127 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 2517 | 651 | 1954 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 2517 | 651 | 1954 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 51 | 100 | | | |
| cM capacity (veh/h) | 23 | 411 | 295 | | | |

| Direction, Lane # | SB 1 | SE 1 | SE 2 | SE 3 | NW 1 | NW 2 | NW 3 | NW 4 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 201 | 563 | 563 | 563 | 651 | 651 | 651 | 127 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 201 | 0 | 0 | 0 | 0 | 0 | 0 | 127 |
| cSH | 411 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.49 | 0.33 | 0.33 | 0.33 | 0.38 | 0.38 | 0.38 | 0.07 |
| Queue Length 95th (ft) | 65 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Control Delay (s) | 21.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | C | | | | | | | |
| Approach Delay (s) | 21.9 | 0.0 | | | 0.0 | | | |
| Approach LOS | C | | | | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.1 | | | |
| Intersection Capacity Utilization | 51.9% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 113 | 0 | 1940 | 1407 | 195 |
| Future Volume (Veh/h) | 0 | 113 | 0 | 1940 | 1407 | 195 |
| Sign Control | Yield | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 126 | 0 | 2156 | 1563 | 217 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 2282 | 521 | 1563 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 2282 | 521 | 1563 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 75 | 100 | | | |
| cM capacity (veh/h) | 33 | 500 | 419 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 | SB 4 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 126 | 719 | 719 | 719 | 521 | 521 | 521 | 217 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 126 | 0 | 0 | 0 | 0 | 0 | 0 | 217 |
| cSH | 500 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.25 | 0.42 | 0.42 | 0.42 | 0.31 | 0.31 | 0.31 | 0.13 |
| Queue Length 95th (ft) | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Control Delay (s) | 14.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | | | | | |
| Approach Delay (s) | 14.6 | 0.0 | | | 0.0 | | | |
| Approach LOS | B | | | | | | | |

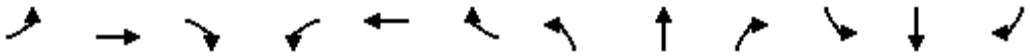
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 0.5 | | | |
| Intersection Capacity Utilization | 40.8% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 4 | 453 | 5 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 4 | 453 | 5 | 0 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 4 | 503 | 6 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 0 | | 260 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 0 | | 260 | 0 |
| tC, single (s) | | | 4.1 | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 99 | 100 |
| cM capacity (veh/h) | | | 1622 | | 705 | 1084 |

| Direction, Lane # | WB 1 | WB 2 | NB 1 |
|---|---|---|---|
| Volume Total | 172 | 335 | 6 |
| Volume Left | 4 | 0 | 6 |
| Volume Right | 0 | 0 | 0 |
| cSH | 1622 | 1700 | 705 |
| Volume to Capacity | 0.00 | 0.20 | 0.01 |
| Queue Length 95th (ft) | 0 | 0 | 1 |
| Control Delay (s) | 0.2 | 0.0 | 10.1 |
| Lane LOS | A | | B |
| Approach Delay (s) | 0.1 | | 10.1 |
| Approach LOS | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.2 | | |
| Intersection Capacity Utilization | 22.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

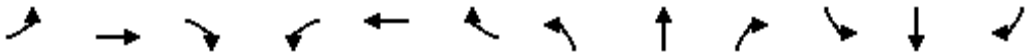
Intersection Sign configuration not allowed in HCM analysis.



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 5 | 322 | 13 | 0 | 0 | 0 | 0 | 4 | 9 | 9 | 4 | 0 |
| Future Volume (Veh/h) | 5 | 322 | 13 | 0 | 0 | 0 | 0 | 4 | 9 | 9 | 4 | 0 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 6 | 358 | 14 | 0 | 0 | 0 | 0 | 4 | 10 | 10 | 4 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 0 | | | 372 | | | 379 | 377 | 186 | 203 | 384 | 0 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 0 | | | 372 | | | 379 | 377 | 186 | 203 | 384 | 0 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 100 | | | 100 | 99 | 99 | 99 | 99 | 100 |
| cM capacity (veh/h) | 1622 | | | 1183 | | | 549 | 551 | 824 | 722 | 546 | 1084 |

| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 185 | 193 | 14 | 14 |
| Volume Left | 6 | 0 | 0 | 10 |
| Volume Right | 0 | 14 | 10 | 0 |
| cSH | 1622 | 1700 | 722 | 661 |
| Volume to Capacity | 0.00 | 0.11 | 0.02 | 0.02 |
| Queue Length 95th (ft) | 0 | 0 | 1 | 2 |
| Control Delay (s) | 0.3 | 0.0 | 10.1 | 10.6 |
| Lane LOS | A | | B | B |
| Approach Delay (s) | 0.1 | | 10.1 | 10.6 |
| Approach LOS | | | B | B |

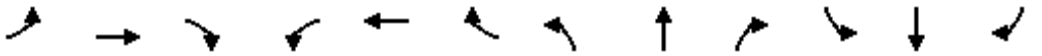
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 0.8 | | | |
| Intersection Capacity Utilization | 23.5% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 60 | 249 | 33 | 0 | 0 | 0 | 0 | 4 | 77 | 79 | 61 | 0 |
| Future Volume (Veh/h) | 60 | 249 | 33 | 0 | 0 | 0 | 0 | 4 | 77 | 79 | 61 | 0 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 67 | 277 | 37 | 0 | 0 | 0 | 0 | 4 | 86 | 88 | 68 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 0 | | | 314 | | | 464 | 430 | 157 | 360 | 448 | 0 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 0 | | | 314 | | | 464 | 430 | 157 | 360 | 448 | 0 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 96 | | | 100 | | | 100 | 99 | 90 | 82 | 86 | 100 |
| cM capacity (veh/h) | 1622 | | | 1243 | | | 417 | 495 | 861 | 494 | 484 | 1084 |

| Direction, Lane # | EB 1 | EB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 206 | 176 | 90 | 156 |
| Volume Left | 67 | 0 | 0 | 88 |
| Volume Right | 0 | 37 | 86 | 0 |
| cSH | 1622 | 1700 | 833 | 489 |
| Volume to Capacity | 0.04 | 0.10 | 0.11 | 0.32 |
| Queue Length 95th (ft) | 3 | 0 | 9 | 34 |
| Control Delay (s) | 2.6 | 0.0 | 9.8 | 15.8 |
| Lane LOS | A | | A | C |
| Approach Delay (s) | 1.4 | | 9.8 | 15.8 |
| Approach LOS | | | A | C |

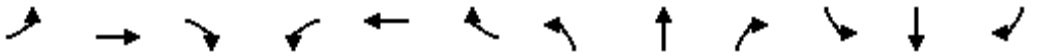
| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 6.2 | | | |
| Intersection Capacity Utilization | 30.6% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 11 | 301 | 97 | 0 | 0 | 0 | 0 | 46 | 144 | 6 | 130 | 0 |
| Future Volume (Veh/h) | 11 | 301 | 97 | 0 | 0 | 0 | 0 | 46 | 144 | 6 | 130 | 0 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 12 | 334 | 108 | 0 | 0 | 0 | 0 | 51 | 160 | 7 | 144 | 0 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 0 | | | 442 | | | 484 | 412 | 221 | 376 | 466 | 0 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 0 | | | 442 | | | 484 | 412 | 221 | 376 | 466 | 0 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 100 | | | 100 | 90 | 80 | 98 | 71 | 100 |
| cM capacity (veh/h) | 1622 | | | 1114 | | | 358 | 525 | 783 | 407 | 489 | 1084 |

| Direction, Lane # | EB 1 | EB 2 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|
| Volume Total | 179 | 275 | 51 | 160 | 7 | 144 |
| Volume Left | 12 | 0 | 0 | 0 | 7 | 0 |
| Volume Right | 0 | 108 | 0 | 160 | 0 | 0 |
| cSH | 1622 | 1700 | 525 | 783 | 407 | 489 |
| Volume to Capacity | 0.01 | 0.16 | 0.10 | 0.20 | 0.02 | 0.29 |
| Queue Length 95th (ft) | 1 | 0 | 8 | 19 | 1 | 30 |
| Control Delay (s) | 0.5 | 0.0 | 12.6 | 10.8 | 14.0 | 15.4 |
| Lane LOS | A | | B | B | B | C |
| Approach Delay (s) | 0.2 | | 11.2 | | 15.3 | |
| Approach LOS | | | B | | C | |

| Intersection Summary | | | | | |
|---|---|---|---|---|---|
| Average Delay | 5.9 | | | | |
| Intersection Capacity Utilization | 34.0% | ICU Level of Service | | A | |
| Analysis Period (min) | 15 | | | | |

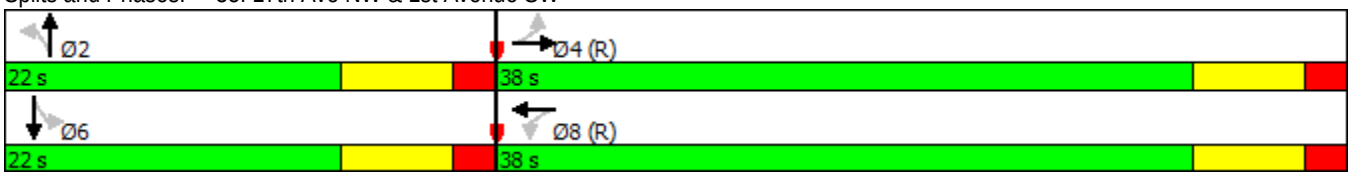


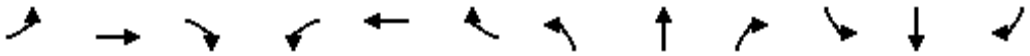
| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 41 | 264 | 18 | 40 | 354 | 75 | 20 | 78 | 15 | 51 | 112 | 42 |
| Future Volume (vph) | 41 | 264 | 18 | 40 | 354 | 75 | 20 | 78 | 15 | 51 | 112 | 42 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 75 | | 0 | 0 | | 0 |
| Storage Lanes | 0 | | 0 | 0 | | 0 | 1 | | 0 | 0 | | 0 |
| Taper Length (ft) | 50 | | | 50 | | | 50 | | | 50 | | |
| Lane Util. 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 |
| Frt | | 0.992 | | | 0.978 | | | 0.975 | | | 0.972 | |
| Flt Protected | | 0.994 | | | 0.996 | | 0.950 | | | | 0.988 | |
| Satd. Flow (prot) | 0 | 1837 | 0 | 0 | 1814 | 0 | 1770 | 1816 | 0 | 0 | 1789 | 0 |
| Flt Permitted | | 0.899 | | | 0.947 | | 0.568 | | | | 0.886 | |
| Satd. Flow (perm) | 0 | 1661 | 0 | 0 | 1725 | 0 | 1058 | 1816 | 0 | 0 | 1604 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 35 | |
| Link Distance (ft) | | 634 | | | 290 | | | 373 | | | 463 | |
| Travel Time (s) | | 12.4 | | | 5.6 | | | 7.3 | | | 9.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 46 | 293 | 20 | 44 | 393 | 83 | 22 | 87 | 17 | 57 | 124 | 47 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 359 | 0 | 0 | 520 | 0 | 22 | 104 | 0 | 0 | 228 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 12.0 | 12.0 | | 12.0 | 12.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 21.0 | 21.0 | | 21.0 | 21.0 | | 21.0 | 21.0 | | 21.0 | 21.0 | |
| Total Split (s) | 38.0 | 38.0 | | 38.0 | 38.0 | | 22.0 | 22.0 | | 22.0 | 22.0 | |
| Total Split (%) | 63.3% | 63.3% | | 63.3% | 63.3% | | 36.7% | 36.7% | | 36.7% | 36.7% | |
| Maximum Green (s) | 31.0 | 31.0 | | 31.0 | 31.0 | | 15.0 | 15.0 | | 15.0 | 15.0 | |
| Yellow Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -2.0 | | | -2.0 | | -2.0 | -2.0 | | | -2.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | 5.0 | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | C-Min | C-Min | | C-Min | C-Min | | None | None | | None | None | |
| Act Effct Green (s) | | 35.3 | | | 35.3 | | 14.7 | 14.7 | | | 14.7 | |
| Actuated g/C Ratio | | 0.59 | | | 0.59 | | 0.24 | 0.24 | | | 0.24 | |
| v/c Ratio | | 0.37 | | | 0.51 | | 0.08 | 0.23 | | | 0.58 | |
| Control Delay | | 8.5 | | | 10.3 | | 16.9 | 18.5 | | | 25.7 | |
| Queue Delay | | 0.0 | | | 0.0 | | 0.0 | 0.0 | | | 0.0 | |
| Total Delay | | 8.5 | | | 10.3 | | 16.9 | 18.5 | | | 25.7 | |
| LOS | | A | | | B | | B | B | | | C | |
| Approach Delay | | 8.5 | | | 10.3 | | | 18.2 | | | 25.7 | |
| Approach LOS | | A | | | B | | | B | | | C | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 50th (ft) | | 62 | | | 101 | | 6 | 29 | | | 71 | |
| Queue Length 95th (ft) | | 117 | | | 185 | | 21 | 61 | | | 127 | |
| Internal Link Dist (ft) | | 554 | | | 210 | | | 293 | | | 383 | |
| Turn Bay Length (ft) | | | | | | | 75 | | | | | |
| Base Capacity (vph) | | 979 | | | 1017 | | 301 | 518 | | | 457 | |
| Starvation Cap Reductn | | 0 | | | 0 | | 0 | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | | | 0 | | 0 | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | | | 0 | | 0 | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.37 | | | 0.51 | | 0.07 | 0.20 | | | 0.50 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 60 | | | |
| Actuated Cycle Length: 60 | | | |
| Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green | | | |
| Natural Cycle: 45 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.58 | | | |
| Intersection Signal Delay: 13.4 | | Intersection LOS: B | |
| Intersection Capacity Utilization 57.0% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 35: 17th Ave NW & 1st Avenue SW

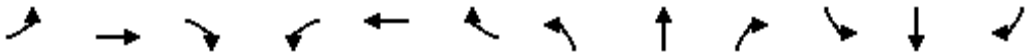




| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 100 | 460 | 66 | 10 | 50 | 0 | 0 | 38 | 25 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 100 | 460 | 66 | 10 | 50 | 0 | 0 | 38 | 25 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 111 | 511 | 73 | 11 | 56 | 0 | 0 | 42 | 28 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 584 | | | 0 | | | 526 | 806 | 0 | 798 | 770 | 292 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 584 | | | 0 | | | 526 | 806 | 0 | 798 | 770 | 292 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 93 | | | 97 | 81 | 100 | 100 | 86 | 96 |
| cM capacity (veh/h) | 987 | | | 1622 | | | 354 | 293 | 1084 | 224 | 307 | 704 |

| Direction, Lane # | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 366 | 328 | 67 | 70 |
| Volume Left | 111 | 0 | 11 | 0 |
| Volume Right | 0 | 73 | 0 | 28 |
| cSH | 1622 | 1700 | 301 | 397 |
| Volume to Capacity | 0.07 | 0.19 | 0.22 | 0.18 |
| Queue Length 95th (ft) | 6 | 0 | 21 | 16 |
| Control Delay (s) | 2.7 | 0.0 | 20.3 | 16.0 |
| Lane LOS | A | | C | C |
| Approach Delay (s) | 1.4 | | 20.3 | 16.0 |
| Approach LOS | | | C | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 4.2 | | |
| Intersection Capacity Utilization | 34.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 141 | 523 | 8 | 55 | 4 | 0 | 0 | 4 | 4 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 141 | 523 | 8 | 55 | 4 | 0 | 0 | 4 | 4 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 157 | 581 | 9 | 61 | 4 | 0 | 0 | 4 | 4 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 590 | | | 0 | | | 610 | 904 | 0 | 902 | 900 | 295 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 590 | | | 0 | | | 610 | 904 | 0 | 902 | 900 | 295 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.5 | 6.5 | 6.9 | 7.5 | 6.5 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 90 | | | 82 | 98 | 100 | 100 | 98 | 99 |
| cM capacity (veh/h) | 982 | | | 1622 | | | 344 | 249 | 1084 | 213 | 250 | 701 |

| Direction, Lane # | WB 1 | WB 2 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 448 | 300 | 65 | 8 |
| Volume Left | 157 | 0 | 61 | 0 |
| Volume Right | 0 | 9 | 0 | 4 |
| cSH | 1622 | 1700 | 336 | 369 |
| Volume to Capacity | 0.10 | 0.18 | 0.19 | 0.02 |
| Queue Length 95th (ft) | 8 | 0 | 18 | 2 |
| Control Delay (s) | 3.2 | 0.0 | 18.3 | 15.0 |
| Lane LOS | A | | C | B |
| Approach Delay (s) | 1.9 | | 18.3 | 15.0 |
| Approach LOS | | | C | B |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 3.3 | | | |
| Intersection Capacity Utilization | 35.4% | ICU Level of Service | A | |
| Analysis Period (min) | 15 | | | |

## Summary of All Intervals

| Start Time | 4:50 |
|---|---|
| End Time | 6:00 |
| Total Time (min) | 70 |
| Time Recorded (min) | 60 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 5284 |
| Vehs Exited | 5273 |
| Starting Vehs | 106 |
| Ending Vehs | 117 |
| Travel Distance (mi) | 4312 |
| Travel Time (hr) | 109.1 |
| Total Delay (hr) | 9.3 |
| Total Stops | 1467 |
| Fuel Used (gal) | 135.6 |

## Interval #0 Information Seeding

| Start Time | 4:50 |
|---|---|
| End Time | 5:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 5:00 |
|---|---|
| End Time | 6:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 5284 |
|---|---|
| Vehs Exited | 5273 |
| Starting Vehs | 106 |
| Ending Vehs | 117 |
| Travel Distance (mi) | 4312 |
| Travel Time (hr) | 109.1 |
| Total Delay (hr) | 9.3 |
| Total Stops | 1467 |
| Fuel Used (gal) | 135.6 |

## Intersection: 1: 13th Street SW & US 321 On/Off Ramp

| Movement | WB | SB |
|---|---|---|
| Directions Served | LR | LT |
| Maximum Queue (ft) | 77 | 49 |
| Average Queue (ft) | 34 | 5 |
| 95th Queue (ft) | 59 | 26 |
| Link Distance (ft) | 527 | 145 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 2: 13th Street SW & US 321 SB Off Ramp

| Movement | EB | NB | SB |
|---|---|---|---|
| Directions Served | LR | LT | TR |
| Maximum Queue (ft) | 78 | 31 | 34 |
| Average Queue (ft) | 37 | 7 | 1 |
| 95th Queue (ft) | 58 | 27 | 11 |
| Link Distance (ft) | 514 | 866 | 534 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 3: NB US 321 & US 321 NB Off Ramp

| Movement | SB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 56 |
| Average Queue (ft) | 4 |
| 95th Queue (ft) | 26 |
| Link Distance (ft) | 527 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 4: NB US 321 & US 321 SB Off Ramp

| Movement | EB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 106 |
| Average Queue (ft) | 6 |
| 95th Queue (ft) | 42 |
| Link Distance (ft) | 514 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 10: 15 St SW & 1st Avenue SW

| Movement | NB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 28 |
| Average Queue (ft) | 5 |
| 95th Queue (ft) | 22 |
| Link Distance (ft) | 258 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 15: NB US 321 & 13th Street U-turn

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 32: 15 St SW & 2nd Avenue SW & 1st Street SW Connector

| Movement | NB | SB |
|---|---|---|
| Directions Served | TR | LT |
| Maximum Queue (ft) | 28 | 26 |
| Average Queue (ft) | 14 | 8 |
| 95th Queue (ft) | 36 | 27 |
| Link Distance (ft) | 295 | 258 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 33: 14th Street SW & 2nd Avenue SW

| Movement | NB | SB |
|---|---|---|
| Directions Served | TR | LT |
| Maximum Queue (ft) | 39 | 50 |
| Average Queue (ft) | 18 | 33 |
| 95th Queue (ft) | 30 | 53 |
| Link Distance (ft) | 349 | 268 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 34: 2nd Avenue SW & 13th Street SW

| Movement | NB | NB | SB | SB |
|---|---|---|---|---|
| Directions Served | T | R | L | T |
| Maximum Queue (ft) | 43 | 64 | 27 | 68 |
| Average Queue (ft) | 17 | 32 | 3 | 36 |
| 95th Queue (ft) | 35 | 58 | 16 | 59 |
| Link Distance (ft) | 145 | 145 | 292 | 292 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 37: 14th Street SW & 1st Avenue SW

| Movement | WB | NB | SB |
|---|---|---|---|
| Directions Served | TR | LT | TR |
| Maximum Queue (ft) | 17 | 66 | 37 |
| Average Queue (ft) | 1 | 25 | 16 |
| 95th Queue (ft) | 6 | 50 | 27 |
| Link Distance (ft) | 474 | 268 | 446 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 38: 13th Street SW & 1st Avenue SW

| Movement | WB | NB | SB |
|---|---|---|---|
| Directions Served | LT | LT | TR |
| Maximum Queue (ft) | 29 | 48 | 29 |
| Average Queue (ft) | 1 | 22 | 9 |
| 95th Queue (ft) | 10 | 43 | 31 |
| Link Distance (ft) | 309 | 292 | 179 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Network Summary

Network wide Queuing Penalty: 0

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 201 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Freeway Number of Lanes, N | 2 | Downstream Adj Ramp | |
|---|---|---|---|---|---|
| ☐ Yes | ☐ On | Ramp Number of Lanes, N | 1 | ☑ Yes | ☑ On |
| ☑ No | ☐ Off | Acceleration Lane Length, $L_A$ | | ☐ No | ☐ Off |
| $L_{up}$ = | ft | Deceleration Lane Length $L_D$ | 100 | $L_{down}$ = | 200 ft |
| $V_u$ = | veh/h | Freeway Volume, $V_F$ | 1520 | $V_D$ = | 74 veh/h |
| | | Ramp Volume, $V_R$ | 113 | | |
| | | Freeway Free-Flow Speed, $S_{FF}$ | 55.0 | | |
| | | Ramp Free-Flow Speed, $S_{FR}$ | 35.0 | | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1520 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 1816 |
| Ramp | 113 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 135 |
| UpStream | | | | | | | | |
| DownStream | 74 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 88 |

### Merge Areas

#### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = using Equation (Exhibit 13-6)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

#### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

#### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

#### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

#### Speed Determination

$M_S$ = (Exibit 13-11)

$S_R$= mph (Exhibit 13-11)

$S_0$= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

### Diverge Areas

#### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)

$V_{12}$ = 1816 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

#### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 1816 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 1681 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 135 | Exhibit 13-10 | 2000 | No |

#### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 1816 | Exhibit 13-8 | 4400:All | No |

#### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = 19.0 (pc/mi/ln)

LOS = B (Exhibit 13-2)

#### Speed Determination

$D_s$ = 0.440 (Exhibit 13-12)

$S_R$= 49.3 mph (Exhibit 13-12)

$S_0$= N/A mph (Exhibit 13-12)

S = 49.3 mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 201 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Freeway Number of Lanes, N | 2 | Downstream Adj Ramp | |
|---|---|---|---|---|---|
| ☐ Yes | ☐ On | Ramp Number of Lanes, N | 1 | ☑ Yes | ☑ On |
| ☑ No | ☐ Off | Acceleration Lane Length, $L_A$ | | ☐ No | ☐ Off |
| $L_{up}$ = | ft | Deceleration Lane Length $L_D$ | 100 | $L_{down}$ = | 200 ft |
| $V_u$ = | veh/h | Freeway Volume, $V_F$ | 1873 | $V_D$ = | 74 veh/h |
| | | Ramp Volume, $V_R$ | 114 | | |
| | | Freeway Free-Flow Speed, $S_{FF}$ | 55.0 | | |
| | | Ramp Free-Flow Speed, $S_{FR}$ | 35.0 | | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1873 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2237 |
| Ramp | 114 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 136 |
| UpStream | | | | | | | | |
| DownStream | 74 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 88 |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = using Equation (Exhibit 13-6)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$M_S$ = (Exibit 13-11)

$S_R$= mph (Exhibit 13-11)

$S_0$= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)

$V_{12}$ = 2237 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 2237 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 2101 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 136 | Exhibit 13-10 | 2000 | No |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 2237 | Exhibit 13-8 | 4400:All | No |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = 22.6 (pc/mi/ln)

LOS = C (Exhibit 13-2)

### Speed Determination

$D_s$ = 0.440 (Exhibit 13-12)

$S_R$= 49.3 mph (Exhibit 13-12)

$S_0$= N/A mph (Exhibit 13-12)

S = 49.3 mph (Exhibit 13-13)



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# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 202 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

Upstream Adj Ramp: ☑ Yes ☐ On ☐ No ☑ Off
$L_{up}$ = 200 ft
$V_u$ = 182 veh/h

Terrain: Rolling

$S_{FF}$ = 55.0 mph $S_{FR}$ = 35.0 mph

Sketch ( show lanes, $L_A$, $L_D$, $V_R$, $V_f$)

Downstream Adj Ramp: ☐ Yes ☐ On ☑ No ☐ Off
$L_{down}$ = ft
$V_D$ = veh/h

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1759 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2101 |
| Ramp | 114 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 136 |
| UpStream | 182 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 217 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 25-2 or 25-3)
$P_{FM}$ = 1.000 using Equation (Exhibit 25-5)
$V_{12}$ = 2101 pc/h
$V_3$ or $V_{av34}$ 0 pc/h (Equation 25-4 or 25-5)
Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No
Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No
If Yes, $V_{12a}$ = pc/h (Equation 25-8)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 2237 | Exhibit 25-7 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 2237 | Exhibit 25-7 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = 19.7 (pc/mi/ln)
LOS = B (Exhibit 25-4)

### Speed Determination

$M_S$ = 0.323 (Exibit 25-19)
$S_R$ = 50.8 mph (Exhibit 25-19)
$S_0$ = N/A mph (Exhibit 25-19)
S = 50.8 mph (Exhibit 25-14)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 25-8 or 25-9)
$P_{FD}$ = using Equation (Exhibit 25-12)
$V_{12}$ = pc/h
$V_3$ or $V_{av34}$ pc/h (Equation 25-15 or 25-16)
Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No
Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No
If Yes, $V_{12a}$ = pc/h (Equation 25-18)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 25-14 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 25-14 | | |
| $V_R$ | | Exhibit 25-3 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 25-14 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = (pc/mi/ln)
LOS = (Exhibit 25-4)

### Speed Determination

$D_s$ = (Exhibit 25-19)
$S_R$ = mph (Exhibit 25-19)
$S_0$ = mph (Exhibit 25-19)
S = mph (Exhibit 25-15)



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# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 202 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

Upstream Adj Ramp: ☑ Yes ☐ On ☐ No ☑ Off

$L_{up}$ = 200 ft

$V_u$ = 195 veh/h

Terrain: Rolling

$S_{FF}$ = 55.0 mph $S_{FR}$ = 35.0 mph

Sketch ( show lanes, $L_A$, $L_D$, $V_R$, $V_f$)

Downstream Adj Ramp: ☐ Yes ☐ On ☑ No ☐ Off

$L_{down}$ = ft

$V_D$ = veh/h

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | $v = V/PHF \times f_{HV} \times f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1407 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 1681 |
| Ramp | 195 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 233 |
| UpStream | 195 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 233 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 25-2 or 25-3)

$P_{FM}$ = 1.000 using Equation (Exhibit 25-5)

$V_{12}$ = 1681 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 25-4 or 25-5)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 25-8)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 1914 | Exhibit 25-7 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 1914 | Exhibit 25-7 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = 17.2 (pc/mi/ln)

LOS = B (Exhibit 25-4)

### Speed Determination

$M_S$ = 0.312 (Exibit 25-19)

$S_R$ = 50.9 mph (Exhibit 25-19)

$S_0$ = N/A mph (Exhibit 25-19)

S = 50.9 mph (Exhibit 25-14)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 25-8 or 25-9)

$P_{FD}$ = using Equation (Exhibit 25-12)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 25-15 or 25-16)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 25-18)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 25-14 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 25-14 | | |
| $V_R$ | | Exhibit 25-3 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 25-14 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 25-4)

### Speed Determination

$D_s$ = (Exhibit 25-19)

$S_R$ = mph (Exhibit 25-19)

$S_0$ = mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 203 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

Upstream Adj Ramp
☑ Yes ☐ On
☐ No ☑ Off
$L_{up}$ = 200 ft
$V_u$ = 113 veh/h

Terrain: Rolling
$S_{FF}$ = 55.0 mph $S_{FR}$ = 35.0 mph
Sketch ( show lanes, $L_A$, $L_D$, $V_R$, $V_f$)

Downstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
$L_{down}$ = ft
$V_D$ = veh/h

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1407 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 1681 |
| Ramp | 195 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 233 |
| UpStream | 113 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 135 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 25-2 or 25-3)
$P_{FM}$ = 1.000 using Equation (Exhibit 25-5)
$V_{12}$ = 1681 pc/h
$V_3$ or $V_{av34}$ 0 pc/h (Equation 25-4 or 25-5)
Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No
Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No
If Yes, $V_{12a}$ = pc/h (Equation 25-8)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 1914 | Exhibit 25-7 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 1914 | Exhibit 25-7 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = 17.2 (pc/mi/ln)
LOS = B (Exhibit 25-4)

### Speed Determination

$M_S$ = 0.312 (Exibit 25-19)
$S_R$ = 50.9 mph (Exhibit 25-19)
$S_0$ = N/A mph (Exhibit 25-19)
S = 50.9 mph (Exhibit 25-14)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 25-8 or 25-9)
$P_{FD}$ = using Equation (Exhibit 25-12)
$V_{12}$ = pc/h
$V_3$ or $V_{av34}$ pc/h (Equation 25-15 or 25-16)
Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No
Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No
If Yes, $V_{12a}$ = pc/h (Equation 25-18)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 25-14 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 25-14 | | |
| $V_R$ | | Exhibit 25-3 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 25-14 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = (pc/mi/ln)
LOS = (Exhibit 25-4)

### Speed Determination

$D_s$ = (Exhibit 25-19)
$S_R$ = mph (Exhibit 25-19)
$S_0$ = mph (Exhibit 25-19)
S = mph (Exhibit 25-15)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 203 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

Upstream Adj Ramp: ☑ Yes ☐ On ☐ No ☑ Off

$L_{up}$ = 200 ft

$V_u$ = 114 veh/h

Terrain: Rolling

$S_{FF}$ = 55.0 mph $S_{FR}$ = 35.0 mph

Sketch ( show lanes, $L_A$, $L_D$, $V_R$, $V_f$)

Downstream Adj Ramp: ☐ Yes ☐ On ☑ No ☐ Off

$L_{down}$ = ft

$V_D$ = veh/h

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1759 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2101 |
| Ramp | 181 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 216 |
| UpStream | 114 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 136 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 25-2 or 25-3)

$P_{FM}$ = 1.000 using Equation (Exhibit 25-5)

$V_{12}$ = 2101 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 25-4 or 25-5)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 25-8)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 2317 | Exhibit 25-7 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 2317 | Exhibit 25-7 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = 20.3 (pc/mi/ln)

LOS = C (Exhibit 25-4)

### Speed Determination

$M_S$ = 0.326 (Exibit 25-19)

$S_R$ = 50.8 mph (Exhibit 25-19)

$S_0$ = N/A mph (Exhibit 25-19)

S = 50.8 mph (Exhibit 25-14)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 25-8 or 25-9)

$P_{FD}$ = using Equation (Exhibit 25-12)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 25-15 or 25-16)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 25-18)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 25-14 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 25-14 | | |
| $V_R$ | | Exhibit 25-3 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 25-14 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 25-4)

### Speed Determination

$D_s$ = (Exhibit 25-19)

$S_R$ = mph (Exhibit 25-19)

$S_0$ = mph (Exhibit 25-19)

S = mph (Exhibit 25-15)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 204 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
$L_{up}$ = ft
$V_u$ = veh/h

| | |
|---|---|
| Freeway Number of Lanes, N | 2 |
| Ramp Number of Lanes, N | 1 |
| Acceleration Lane Length, $L_A$ | |
| Deceleration Lane Length $L_D$ | 100 |
| Freeway Volume, $V_F$ | 1941 |
| Ramp Volume, $V_R$ | 182 |
| Freeway Free-Flow Speed, $S_{FF}$ | 55.0 |
| Ramp Free-Flow Speed, $S_{FR}$ | 35.0 |

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
$L_{down}$ = 200 ft
$V_D$ = 332 veh/h

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1941 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2318 |
| Ramp | 182 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 217 |
| UpStream | | | | | | | | |
| DownStream | 332 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 397 |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$
$L_{EQ}$ = (Equation 13-6 or 13-7)
$P_{FM}$ = using Equation (Exhibit 13-6)
$V_{12}$ = pc/h
$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)
Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No
Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No
If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$
$D_R$ = (pc/mi/ln)
LOS = (Exhibit 13-2)

### Speed Determination

$M_S$ = (Exibit 13-11)
$S_R$= mph (Exhibit 13-11)
$S_0$= mph (Exhibit 13-11)
S = mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$
$L_{EQ}$ = (Equation 13-12 or 13-13)
$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)
$V_{12}$ = 2318 pc/h
$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)
Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No
Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No
If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 2318 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 2101 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 217 | Exhibit 13-10 | 2000 | No |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 2318 | Exhibit 13-8 | 4400:All | No |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$
$D_R$ = 23.3 (pc/mi/ln)
LOS = C (Exhibit 13-2)

### Speed Determination

$D_s$ = 0.448 (Exhibit 13-12)
$S_R$= 49.2 mph (Exhibit 13-12)
$S_0$= N/A mph (Exhibit 13-12)
S = 49.2 mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 204 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Freeway Number of Lanes, N | 2 | Downstream Adj Ramp | |
|---|---|---|---|---|---|
| ☐ Yes | ☐ On | Ramp Number of Lanes, N | 1 | ☑ Yes | ☑ On |
| ☑ No | ☐ Off | Acceleration Lane Length, $L_A$ | | ☐ No | ☐ Off |
| $L_{up}$ = | ft | Deceleration Lane Length $L_D$ | 100 | $L_{down}$ = | 200 ft |
| $V_u$ = | veh/h | Freeway Volume, $V_F$ | 1602 | $V_D$ = | 332 veh/h |
| | | Ramp Volume, $V_R$ | 195 | | |
| | | Freeway Free-Flow Speed, $S_{FF}$ | 55.0 | | |
| | | Ramp Free-Flow Speed, $S_{FR}$ | 35.0 | | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1602 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 1913 |
| Ramp | 195 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 233 |
| UpStream | | | | | | | | |
| DownStream | 332 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 397 |

### Merge Areas

#### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = using Equation (Exhibit 13-6)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

#### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

#### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

#### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

#### Speed Determination

$M_S$ = (Exibit 13-11)

$S_R$= mph (Exhibit 13-11)

$S_0$= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

### Diverge Areas

#### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)

$V_{12}$ = 1913 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

#### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 1913 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 1680 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 233 | Exhibit 13-10 | 2000 | No |

#### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 1913 | Exhibit 13-8 | 4400:All | No |

#### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = 19.8 (pc/mi/ln)

LOS = B (Exhibit 13-2)

#### Speed Determination

$D_s$ = 0.449 (Exhibit 13-12)

$S_R$= 49.2 mph (Exhibit 13-12)

$S_0$= N/A mph (Exhibit 13-12)

S = 49.2 mph (Exhibit 13-13)

# APPENDIX F

## 2040 Build Alternative 13th Street – Two-Way Partial Cloverleaf Interchange Synchro, SimTraffic & HCS Reports

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.8 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 24 | 102 | 76 | 215 | 28 | 114 |
| Future Vol, veh/h | 24 | 102 | 76 | 215 | 28 | 114 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 100 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 5 | 5 | 5 | 5 | 5 | 5 |
| Mvmt Flow | 27 | 113 | 84 | 239 | 31 | 127 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 393 | 204 | 0 | 0 | 323 | 0 |
| Stage 1 | 204 | - | - | - | - | - |
| Stage 2 | 189 | - | - | - | - | - |
| Critical Hdwy | 6.45 | 6.25 | - | - | 4.15 | - |
| Critical Hdwy Stg 1 | 5.45 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.45 | - | - | - | - | - |
| Follow-up Hdwy | 3.545 | 3.345 | - | - | 2.245 | - |
| Pot Cap-1 Maneuver | 606 | 829 | - | - | 1220 | - |
| Stage 1 | 823 | - | - | - | - | - |
| Stage 2 | 836 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 591 | 829 | - | - | 1220 | - |
| Mov Cap-2 Maneuver | 591 | - | - | - | - | - |
| Stage 1 | 823 | - | - | - | - | - |
| Stage 2 | 815 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10.7 | 0 | 1.6 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 770 | 1220 | - |
| HCM Lane V/C Ratio | - | - | 0.182 | 0.026 | - |
| HCM Control Delay (s) | - | - | 10.7 | 8 | - |
| HCM Lane LOS | - | - | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.7 | 0.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.9 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 38 | 156 | 42 | 253 | 44 | 94 |
| Future Vol, veh/h | 38 | 156 | 42 | 253 | 44 | 94 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | 0 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 5 | 5 | 5 | 5 | 5 | 5 |
| Mvmt Flow | 42 | 173 | 47 | 281 | 49 | 104 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 475 | 101 | 153 | 0 | - | 0 |
| Stage 1 | 101 | - | - | - | - | - |
| Stage 2 | 374 | - | - | - | - | - |
| Critical Hdwy | 6.45 | 6.25 | 4.15 | - | - | - |
| Critical Hdwy Stg 1 | 5.45 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.45 | - | - | - | - | - |
| Follow-up Hdwy | 3.545 | 3.345 | 2.245 | - | - | - |
| Pot Cap-1 Maneuver | 543 | 946 | 1409 | - | - | - |
| Stage 1 | 916 | - | - | - | - | - |
| Stage 2 | 689 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 525 | 946 | 1409 | - | - | - |
| Mov Cap-2 Maneuver | 525 | - | - | - | - | - |
| Stage 1 | 916 | - | - | - | - | - |
| Stage 2 | 666 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11 | 1.1 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1409 | - | 818 | - | - |
| HCM Lane V/C Ratio | 0.033 | - | 0.264 | - | - |
| HCM Control Delay (s) | 7.6 | - | 11 | - | - |
| HCM Lane LOS | A | - | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 1.1 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.3 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 4 | 4 | 4 | 4 | 0 | 4 | 0 | 4 | 4 | 4 | 9 | 0 |
| Future Vol, veh/h | 4 | 4 | 4 | 4 | 0 | 4 | 0 | 4 | 4 | 4 | 9 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | 1 | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 3 | 3 | 3 | 8 | 8 | 8 | 8 | 8 | 8 | 6 | 6 | 6 |
| Mvmt Flow | 4 | 4 | 4 | 4 | 0 | 4 | 0 | 4 | 4 | 4 | 10 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 0 | 9 | 0 | - | - | 25 | 7 | 20 | 27 | - |
| Stage 1 | - | - | - | - | - | - | - | 16 | - | 0 | 9 | - |
| Stage 2 | - | - | - | - | - | - | - | 9 | - | 20 | 18 | - |
| Critical Hdwy | 4.13 | - | - | 4.18 | - | - | - | 6.58 | 6.28 | 7.16 | 6.56 | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | 5.58 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | 6.16 | 5.56 | - |
| Follow-up Hdwy | 2.227 | - | - | 2.272 | - | - | - | 4.072 | 3.372 | 3.554 | 4.054 | - |
| Pot Cap-1 Maneuver | - | - | - | 1572 | 0 | - | 0 | 857 | 1058 | 983 | 858 | 0 |
| Stage 1 | - | - | - | - | 0 | - | 0 | 870 | - | - | - | 0 |
| Stage 2 | - | - | - | - | 0 | - | 0 | - | - | 989 | 872 | 0 |
| Platoon blocked, % | | - | - | | | - | | | | | | |
| Mov Cap-1 Maneuver | - | - | - | 1572 | - | - | - | 855 | 1058 | 973 | 856 | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | 855 | - | 973 | 856 | - |
| Stage 1 | - | - | - | - | - | - | - | 870 | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | 980 | 872 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | | 3.6 | 8.8 | 9.1 |
| HCM LOS | | | A | A |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 946 | - | - | - | 1572 | - | 889 |
| HCM Lane V/C Ratio | 0.009 | - | - | - | 0.003 | - | 0.016 |
| HCM Control Delay (s) | 8.8 | - | - | - | 7.3 | - | 9.1 |
| HCM Lane LOS | A | - | - | - | A | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0 | - | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 277 | 88 | 0 | 0 | 0 | 0 | 0 | 199 | 5 | 41 | 0 |
| Future Vol, veh/h | 0 | 277 | 88 | 0 | 0 | 0 | 0 | 0 | 199 | 5 | 41 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | Stop | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 0 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | - | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 3 | 3 | 3 | 2 | 2 | 2 | 7 | 7 | 7 | 7 | 7 | 7 |
| Mvmt Flow | 0 | 308 | 98 | 0 | 0 | 0 | 0 | 0 | 221 | 6 | 46 | 0 |

| Major/Minor | Major1 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | 0 | - | - | 357 | 357 | 406 | - |
| Stage 1 | - | - | - | - | - | - | 0 | 0 | - |
| Stage 2 | - | - | - | - | - | - | 357 | 406 | - |
| Critical Hdwy | - | - | - | - | - | 6.27 | 7.17 | 6.57 | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.17 | 5.57 | - |
| Follow-up Hdwy | - | - | - | - | - | 3.363 | 3.563 | 4.063 | - |
| Pot Cap-1 Maneuver | 0 | - | - | 0 | 0 | 676 | 589 | 526 | 0 |
| Stage 1 | 0 | - | - | 0 | 0 | - | - | - | 0 |
| Stage 2 | 0 | - | - | 0 | 0 | - | 650 | 589 | 0 |
| Platoon blocked, % | | - | - | | | | | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 676 | 396 | 526 | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 396 | 526 | - |
| Stage 1 | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | 437 | 589 | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 12.9 | 12.9 |
| HCM LOS | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | 676 | - | - | 508 |
| HCM Lane V/C Ratio | 0.327 | - | - | 0.101 |
| HCM Control Delay (s) | 12.9 | - | - | 12.9 |
| HCM Lane LOS | B | - | - | B |
| HCM 95th %tile Q(veh) | 1.4 | - | - | 0.3 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 85 | 390 | 4 | 0 | 0 | 0 | 0 | 8 | 8 | 4 | 4 | 0 |
| Future Vol, veh/h | 85 | 390 | 4 | 0 | 0 | 0 | 0 | 8 | 8 | 4 | 4 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | - | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 4 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 94 | 433 | 4 | 0 | 0 | 0 | 0 | 9 | 9 | 4 | 4 | 0 |

| Major/Minor | Major1 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 0 | - | 624 | 219 | 410 | 627 | - |
| Stage 1 | - | - | - | - | 624 | - | 0 | 0 | - |
| Stage 2 | - | - | - | - | 0 | - | 410 | 627 | - |
| Critical Hdwy | 4.18 | - | - | - | 6.54 | 6.94 | 7.54 | 6.54 | - |
| Critical Hdwy Stg 1 | - | - | - | - | 5.54 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.24 | - | - | - | 4.02 | 3.32 | 3.52 | 4.02 | - |
| Pot Cap-1 Maneuver | - | - | - | 0 | 400 | 785 | 526 | 399 | 0 |
| Stage 1 | - | - | - | 0 | 476 | - | - | - | 0 |
| Stage 2 | - | - | - | 0 | - | - | 589 | 474 | 0 |
| Platoon blocked, % | | - | - | | | | | | |
| Mov Cap-1 Maneuver | - | - | - | - | 400 | 785 | 511 | 399 | - |
| Mov Cap-2 Maneuver | - | - | - | - | 400 | - | 511 | 399 | - |
| Stage 1 | - | - | - | - | 476 | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | 571 | 474 | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | | 12 | 13.2 |
| HCM LOS | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 530 | - | - | - | 448 |
| HCM Lane V/C Ratio | 0.034 | - | - | - | 0.02 |
| HCM Control Delay (s) | 12 | - | - | - | 13.2 |
| HCM Lane LOS | B | - | - | - | B |
| HCM 95th %tile Q(veh) | 0.1 | - | - | - | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 306 | 9 | 4 | 421 | 8 | 18 |
| Future Vol, veh/h | 306 | 9 | 4 | 421 | 8 | 18 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 3 | 3 | 4 | 4 | 6 | 6 |
| Mvmt Flow | 340 | 10 | 4 | 468 | 9 | 20 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 350 | 0 | 822 | 345 |
| Stage 1 | - | - | - | - | 345 | - |
| Stage 2 | - | - | - | - | 477 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.46 | 6.26 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.46 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.46 | - |
| Follow-up Hdwy | - | - | 2.236 | - | 3.554 | 3.354 |
| Pot Cap-1 Maneuver | - | - | 1198 | - | 338 | 689 |
| Stage 1 | - | - | - | - | 708 | - |
| Stage 2 | - | - | - | - | 616 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1198 | - | 336 | 689 |
| Mov Cap-2 Maneuver | - | - | - | - | 336 | - |
| Stage 1 | - | - | - | - | 708 | - |
| Stage 2 | - | - | - | - | 613 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 12.3 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 521 | - | - | 1198 | - |
| HCM Lane V/C Ratio | 0.055 | - | - | 0.004 | - |
| HCM Control Delay (s) | 12.3 | - | - | 8 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.2 | - | - | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 4 | 0 | 484 | 14 | 0 | 4 |
| Future Vol, veh/h | 4 | 0 | 484 | 14 | 0 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 3 | 3 |
| Mvmt Flow | 4 | 0 | 538 | 16 | 0 | 4 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 553 | - | - | 0 | - | 546 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | 4.12 | - | - | - | - | 6.23 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | 2.218 | - | - | - | - | 3.327 |
| Pot Cap-1 Maneuver | 1017 | 0 | - | - | 0 | 536 |
| Stage 1 | - | 0 | - | - | 0 | - |
| Stage 2 | - | 0 | - | - | 0 | - |
| Platoon blocked, % | | | - | - | | |
| Mov Cap-1 Maneuver | 1017 | - | - | - | - | 536 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.6 | 0 | 11.8 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | 1017 | - | - | 536 |
| HCM Lane V/C Ratio | 0.004 | - | - | 0.008 |
| HCM Control Delay (s) | 8.6 | - | - | 11.8 |
| HCM Lane LOS | A | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 |

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

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 592 | 4 | 0 | 4 |
| Future Vol, veh/h | 0 | 0 | 592 | 4 | 0 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | - | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 6 | 6 |
| Mvmt Flow | 0 | 0 | 658 | 4 | 0 | 4 |

| Major/Minor | Major2 | | Minor2 | |
|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 660 |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |
| Critical Hdwy | - | - | - | 6.26 |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - |
| Follow-up Hdwy | - | - | - | 3.354 |
| Pot Cap-1 Maneuver | - | - | 0 | 456 |
| Stage 1 | - | - | 0 | - |
| Stage 2 | - | - | 0 | - |
| Platoon blocked, % | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | 456 |
| Mov Cap-2 Maneuver | - | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |

| Approach | WB | SB |
|---|---|---|
| HCM Control Delay, s | 0 | 13 |
| HCM LOS | | B |

| Minor Lane/Major Mvmt | WBT | WBR | SBLn1 |
|---|---|---|---|
| Capacity (veh/h) | - | - | 456 |
| HCM Lane V/C Ratio | - | - | 0.01 |
| HCM Control Delay (s) | - | - | 13 |
| HCM Lane LOS | - | - | B |
| HCM 95th %tile Q(veh) | - | - | 0 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 4 | 560 | 4 | 90 | 4 | 0 | 0 | 4 | 4 |
| Future Vol, veh/h | 0 | 0 | 0 | 4 | 560 | 4 | 90 | 4 | 0 | 0 | 4 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | - | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 4 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 4 | 622 | 4 | 100 | 4 | 0 | 0 | 4 | 4 |

| Major/Minor | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 0 | 322 | 636 | - | - | 633 | 313 |
| Stage 1 | - | - | - | 0 | 0 | - | - | 633 | - |
| Stage 2 | - | - | - | 322 | 636 | - | - | 0 | - |
| Critical Hdwy | 4.18 | - | - | 7.54 | 6.54 | - | - | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | 6.54 | 5.54 | - | - | - | - |
| Follow-up Hdwy | 2.24 | - | - | 3.52 | 4.02 | - | - | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | - | - | - | 607 | 394 | 0 | 0 | 395 | 683 |
| Stage 1 | - | - | - | - | - | 0 | 0 | 472 | - |
| Stage 2 | - | - | - | 664 | 470 | 0 | 0 | - | - |
| Platoon blocked, % | | - | - | | | | | | |
| Mov Cap-1 Maneuver | - | - | - | 598 | 394 | - | - | 395 | 683 |
| Mov Cap-2 Maneuver | - | - | - | 598 | 394 | - | - | 395 | - |
| Stage 1 | - | - | - | - | - | - | - | 472 | - |
| Stage 2 | - | - | - | 653 | 470 | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | | 12.5 | 12.3 |
| HCM LOS | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 585 | - | - | - | 501 |
| HCM Lane V/C Ratio | 0.179 | - | - | - | 0.018 |
| HCM Control Delay (s) | 12.5 | - | - | - | 12.3 |
| HCM Lane LOS | B | - | - | - | B |
| HCM 95th %tile Q(veh) | 0.6 | - | - | - | 0.1 |

## Summary of All Intervals

| Start Time | 6:57 |
|---|---|
| End Time | 7:10 |
| Total Time (min) | 13 |
| Time Recorded (min) | 10 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 904 |
| Vehs Exited | 896 |
| Starting Vehs | 118 |
| Ending Vehs | 126 |
| Travel Distance (mi) | 830 |
| Travel Time (hr) | 21.8 |
| Total Delay (hr) | 2.8 |
| Total Stops | 190 |
| Fuel Used (gal) | 26.4 |

## Interval #0 Information Seeding

| Start Time | 6:57 |
|---|---|
| End Time | 7:00 |
| Total Time (min) | 3 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 7:00 |
|---|---|
| End Time | 7:10 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 904 |
|---|---|
| Vehs Exited | 896 |
| Starting Vehs | 118 |
| Ending Vehs | 126 |
| Travel Distance (mi) | 830 |
| Travel Time (hr) | 21.8 |
| Total Delay (hr) | 2.8 |
| Total Stops | 190 |
| Fuel Used (gal) | 26.4 |

## Intersection: 1: 13th Street SW & US 321 On/Off Ramp

| Movement | WB | SB |
|---|---|---|
| Directions Served | LR | L |
| Maximum Queue (ft) | 49 | 31 |
| Average Queue (ft) | 33 | 18 |
| 95th Queue (ft) | 46 | 43 |
| Link Distance (ft) | 545 | |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | 100 |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 2: 13th Street SW & US 321 SB Off Ramp

| Movement | EB |
|---|---|
| Directions Served | LR |
| Maximum Queue (ft) | 51 |
| Average Queue (ft) | 32 |
| 95th Queue (ft) | 63 |
| Link Distance (ft) | 523 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 3: NB US 321 & US 321 NB Off Ramp

| Movement | SB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 207 |
| Average Queue (ft) | 121 |
| 95th Queue (ft) | 236 |
| Link Distance (ft) | 545 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 4: NB US 321 & US 321 SB Off Ramp

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 13: 1st street SW Connector & 1st Avenue SW

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 15: NB US 321 & 13th Street U-turn

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 18: 1st Avenue SW

| Movement | |
|---|---|
| Directions Served | |
| Maximum Queue (ft) | |
| Average Queue (ft) | |
| 95th Queue (ft) | |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 32: 15 St SW & 1st Street SW Connector/2nd Avenue SW

| Movement | WB | NB | SB |
|---|---|---|---|
| Directions Served | L | TR | LT |
| Maximum Queue (ft) | 27 | 31 | 50 |
| Average Queue (ft) | 5 | 12 | 15 |
| 95th Queue (ft) | 23 | 37 | 48 |
| Link Distance (ft) | 244 | 304 | 256 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | 0 | | |
| Queuing Penalty (veh) | 0 | | |

## Intersection: 34: 2nd Ave SW/2nd Avenue SW

| Movement | NB | SB |
|---|---|---|
| Directions Served | R | LT |
| Maximum Queue (ft) | 100 | 30 |
| Average Queue (ft) | 37 | 17 |
| 95th Queue (ft) | 98 | 41 |
| Link Distance (ft) | 171 | 368 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 35: 12th Street SW & 2nd Avenue SW/2nd Avenue

| Movement | NB | SB |
|---|---|---|
| Directions Served | TR | LT |
| Maximum Queue (ft) | 23 | 27 |
| Average Queue (ft) | 14 | 11 |
| 95th Queue (ft) | 32 | 32 |
| Link Distance (ft) | 140 | 272 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 36: 15 St SW & 1st Avenue SW

| Movement | NB |
|---|---|
| Directions Served | LR |
| Maximum Queue (ft) | 51 |
| Average Queue (ft) | 21 |
| 95th Queue (ft) | 53 |
| Link Distance (ft) | 256 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 37: 1st Avenue SW & 14th Street SW

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 38: 1st Avenue SW & Driveway

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 39: 12th Street SW & 1st Avenue SW/1st Avenue

| Movement | NB | SB |
|---|---|---|
| Directions Served | LT | TR |
| Maximum Queue (ft) | 47 | 22 |
| Average Queue (ft) | 38 | 4 |
| 95th Queue (ft) | 56 | 19 |
| Link Distance (ft) | 272 | 266 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Network Summary

Network wide Queuing Penalty: 0

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.4 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 43 | 94 | 48 | 156 | 38 | 140 |
| Future Vol, veh/h | 43 | 94 | 48 | 156 | 38 | 140 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 100 | - |
| Veh in Median Storage, # | 0 | - | 0 | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 5 | 5 | 5 | 5 | 5 | 5 |
| Mvmt Flow | 48 | 104 | 53 | 173 | 42 | 156 |

| Major/Minor | Minor1 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 380 | 140 | 0 | 0 | 227 | 0 |
| Stage 1 | 140 | - | - | - | - | - |
| Stage 2 | 240 | - | - | - | - | - |
| Critical Hdwy | 6.45 | 6.25 | - | - | 4.15 | - |
| Critical Hdwy Stg 1 | 5.45 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.45 | - | - | - | - | - |
| Follow-up Hdwy | 3.545 | 3.345 | - | - | 2.245 | - |
| Pot Cap-1 Maneuver | 616 | 900 | - | - | 1324 | - |
| Stage 1 | 879 | - | - | - | - | - |
| Stage 2 | 793 | - | - | - | - | - |
| Platoon blocked, % | | | - | - | | - |
| Mov Cap-1 Maneuver | 596 | 900 | - | - | 1324 | - |
| Mov Cap-2 Maneuver | 596 | - | - | - | - | - |
| Stage 1 | 879 | - | - | - | - | - |
| Stage 2 | 768 | - | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 10.8 | 0 | 1.7 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBT | NBR | WBLn1 | SBL | SBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | - | - | 776 | 1324 | - |
| HCM Lane V/C Ratio | - | - | 0.196 | 0.032 | - |
| HCM Control Delay (s) | - | - | 10.8 | 7.8 | - |
| HCM Lane LOS | - | - | B | A | - |
| HCM 95th %tile Q(veh) | - | - | 0.7 | 0.1 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 4.7 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 28 | 215 | 25 | 176 | 81 | 102 |
| Future Vol, veh/h | 28 | 215 | 25 | 176 | 81 | 102 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | 0 | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 5 | 5 | 5 | 5 | 5 | 5 |
| Mvmt Flow | 31 | 239 | 28 | 196 | 90 | 113 |

| Major/Minor | Minor2 | | Major1 | | Major2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 398 | 147 | 203 | 0 | - | 0 |
| Stage 1 | 147 | - | - | - | - | - |
| Stage 2 | 251 | - | - | - | - | - |
| Critical Hdwy | 6.45 | 6.25 | 4.15 | - | - | - |
| Critical Hdwy Stg 1 | 5.45 | - | - | - | - | - |
| Critical Hdwy Stg 2 | 5.45 | - | - | - | - | - |
| Follow-up Hdwy | 3.545 | 3.345 | 2.245 | - | - | - |
| Pot Cap-1 Maneuver | 602 | 892 | 1351 | - | - | - |
| Stage 1 | 873 | - | - | - | - | - |
| Stage 2 | 784 | - | - | - | - | - |
| Platoon blocked, % | | | | - | - | - |
| Mov Cap-1 Maneuver | 590 | 892 | 1351 | - | - | - |
| Mov Cap-2 Maneuver | 590 | - | - | - | - | - |
| Stage 1 | 873 | - | - | - | - | - |
| Stage 2 | 768 | - | - | - | - | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 11.3 | 1 | 0 |
| HCM LOS | B | | |

| Minor Lane/Major Mvmt | NBL | NBT | EBLn1 | SBT | SBR |
|---|---|---|---|---|---|
| Capacity (veh/h) | 1351 | - | 842 | - | - |
| HCM Lane V/C Ratio | 0.021 | - | 0.321 | - | - |
| HCM Control Delay (s) | 7.7 | - | 11.3 | - | - |
| HCM Lane LOS | A | - | B | - | - |
| HCM 95th %tile Q(veh) | 0.1 | - | 1.4 | - | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.7 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 4 | 4 | 4 | 4 | 0 | 4 | 0 | 4 | 4 | 4 | 13 | 0 |
| Future Vol, veh/h | 4 | 4 | 4 | 4 | 0 | 4 | 0 | 4 | 4 | 4 | 13 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | 0 | - | 1 | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 3 | 3 | 3 | 8 | 8 | 8 | 8 | 8 | 8 | 6 | 6 | 6 |
| Mvmt Flow | 4 | 4 | 4 | 4 | 0 | 4 | 0 | 4 | 4 | 4 | 14 | 0 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 0 | 9 | 0 | - | - | 25 | 7 | 20 | 27 | - |
| Stage 1 | - | - | - | - | - | - | - | 16 | - | 0 | 9 | - |
| Stage 2 | - | - | - | - | - | - | - | 9 | - | 20 | 18 | - |
| Critical Hdwy | 4.13 | - | - | 4.18 | - | - | - | 6.58 | 6.28 | 7.16 | 6.56 | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | 5.58 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | 6.16 | 5.56 | - |
| Follow-up Hdwy | 2.227 | - | - | 2.272 | - | - | - | 4.072 | 3.372 | 3.554 | 4.054 | - |
| Pot Cap-1 Maneuver | - | - | - | 1572 | 0 | - | 0 | 857 | 1058 | 983 | 858 | 0 |
| Stage 1 | - | - | - | - | 0 | - | 0 | 870 | - | - | - | 0 |
| Stage 2 | - | - | - | - | 0 | - | 0 | - | - | 989 | 872 | 0 |
| Platoon blocked, % | | - | - | | | - | | | | | | |
| Mov Cap-1 Maneuver | - | - | - | 1572 | - | - | - | 855 | 1058 | 973 | 856 | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | 855 | - | 973 | 856 | - |
| Stage 1 | - | - | - | - | - | - | - | 870 | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | 980 | 872 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | | 3.6 | 8.8 | 9.2 |
| HCM LOS | | | A | A |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 946 | - | - | - | 1572 | - | 881 |
| HCM Lane V/C Ratio | 0.009 | - | - | - | 0.003 | - | 0.021 |
| HCM Control Delay (s) | 8.8 | - | - | - | 7.3 | - | 9.2 |
| HCM Lane LOS | A | - | - | - | A | - | A |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0 | - | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.4 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 278 | 73 | 0 | 0 | 0 | 0 | 0 | 156 | 13 | 90 | 0 |
| Future Vol, veh/h | 0 | 278 | 73 | 0 | 0 | 0 | 0 | 0 | 156 | 13 | 90 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | Stop | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | 0 | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | - | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 3 | 3 | 3 | 2 | 2 | 2 | 7 | 7 | 7 | 7 | 7 | 7 |
| Mvmt Flow | 0 | 309 | 81 | 0 | 0 | 0 | 0 | 0 | 173 | 14 | 100 | 0 |

| Major/Minor | Major1 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 0 | 0 | - | - | 349 | 349 | 390 | - |
| Stage 1 | - | - | - | - | - | - | 0 | 0 | - |
| Stage 2 | - | - | - | - | - | - | 349 | 390 | - |
| Critical Hdwy | - | - | - | - | - | 6.27 | 7.17 | 6.57 | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.17 | 5.57 | - |
| Follow-up Hdwy | - | - | - | - | - | 3.363 | 3.563 | 4.063 | - |
| Pot Cap-1 Maneuver | 0 | - | - | 0 | 0 | 683 | 596 | 538 | 0 |
| Stage 1 | 0 | - | - | 0 | 0 | - | - | - | 0 |
| Stage 2 | 0 | - | - | 0 | 0 | - | 657 | 599 | 0 |
| Platoon blocked, % | | - | - | | | | | | |
| Mov Cap-1 Maneuver | - | - | - | - | - | 683 | 445 | 538 | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 445 | 538 | - |
| Stage 1 | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | 490 | 599 | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 12.1 | 13.8 |
| HCM LOS | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | 683 | - | - | 524 |
| HCM Lane V/C Ratio | 0.254 | - | - | 0.218 |
| HCM Control Delay (s) | 12.1 | - | - | 13.8 |
| HCM Lane LOS | B | - | - | B |
| HCM 95th %tile Q(veh) | 1 | - | - | 0.8 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.5 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 38 | 400 | 8 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 8 | 0 |
| Future Vol, veh/h | 38 | 400 | 8 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 8 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | - | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 4 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 42 | 444 | 9 | 0 | 0 | 0 | 0 | 4 | 4 | 4 | 9 | 0 |

| Major/Minor | Major1 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 0 | - | 533 | 227 | 309 | 538 | - |
| Stage 1 | - | - | - | - | 533 | - | 0 | 0 | - |
| Stage 2 | - | - | - | - | 0 | - | 309 | 538 | - |
| Critical Hdwy | 4.18 | - | - | - | 6.54 | 6.94 | 7.54 | 6.54 | - |
| Critical Hdwy Stg 1 | - | - | - | - | 5.54 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.54 | 5.54 | - |
| Follow-up Hdwy | 2.24 | - | - | - | 4.02 | 3.32 | 3.52 | 4.02 | - |
| Pot Cap-1 Maneuver | - | - | - | 0 | 451 | 776 | 620 | 448 | 0 |
| Stage 1 | - | - | - | 0 | 523 | - | - | - | 0 |
| Stage 2 | - | - | - | 0 | - | - | 676 | 521 | 0 |
| Platoon blocked, % | | - | - | | | | | | |
| Mov Cap-1 Maneuver | - | - | - | - | 451 | 776 | 612 | 448 | - |
| Mov Cap-2 Maneuver | - | - | - | - | 451 | - | 612 | 448 | - |
| Stage 1 | - | - | - | - | 523 | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | 666 | 521 | - |

| Approach | EB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | | 11.4 | 12.5 |
| HCM LOS | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 570 | - | - | - | 492 |
| HCM Lane V/C Ratio | 0.016 | - | - | - | 0.027 |
| HCM Control Delay (s) | 11.4 | - | - | - | 12.5 |
| HCM Lane LOS | B | - | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | - | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 304 | 13 | 4 | 423 | 5 | 18 |
| Future Vol, veh/h | 304 | 13 | 4 | 423 | 5 | 18 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 18 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 3 | 3 | 4 | 4 | 6 | 6 |
| Mvmt Flow | 338 | 14 | 4 | 470 | 6 | 20 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 352 | 0 | 842 | 345 |
| Stage 1 | - | - | - | - | 345 | - |
| Stage 2 | - | - | - | - | 497 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.46 | 6.26 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.46 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.46 | - |
| Follow-up Hdwy | - | - | 2.236 | - | 3.554 | 3.354 |
| Pot Cap-1 Maneuver | - | - | 1196 | - | 329 | 689 |
| Stage 1 | - | - | - | - | 708 | - |
| Stage 2 | - | - | - | - | 603 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1196 | - | 322 | 689 |
| Mov Cap-2 Maneuver | - | - | - | - | 322 | - |
| Stage 1 | - | - | - | - | 708 | - |
| Stage 2 | - | - | - | - | 591 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.1 | 11.8 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 552 | - | - | 1196 | - |
| HCM Lane V/C Ratio | 0.046 | - | - | 0.004 | - |
| HCM Control Delay (s) | 11.8 | - | - | 8 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 4 | 0 | 478 | 26 | 0 | 4 |
| Future Vol, veh/h | 4 | 0 | 478 | 26 | 0 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | 0 |
| Veh in Median Storage, # | - | 0 | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 3 | 3 |
| Mvmt Flow | 4 | 0 | 531 | 29 | 0 | 4 |

| Major/Minor | Major1 | | Major2 | | Minor2 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 560 | - | - | 0 | - | 546 |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |
| Critical Hdwy | 4.12 | - | - | - | - | 6.23 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - |
| Follow-up Hdwy | 2.218 | - | - | - | - | 3.327 |
| Pot Cap-1 Maneuver | 1011 | 0 | - | - | 0 | 536 |
| Stage 1 | - | 0 | - | - | 0 | - |
| Stage 2 | - | 0 | - | - | 0 | - |
| Platoon blocked, % | | | - | - | | |
| Mov Cap-1 Maneuver | 1011 | - | - | - | - | 536 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - |

| Approach | EB | WB | SB |
|---|---|---|---|
| HCM Control Delay, s | 8.6 | 0 | 11.8 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | EBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|
| Capacity (veh/h) | 1011 | - | - | 536 |
| HCM Lane V/C Ratio | 0.004 | - | - | 0.008 |
| HCM Control Delay (s) | 8.6 | - | - | 11.8 |
| HCM Lane LOS | A | - | - | B |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 |

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

| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 527 | 9 | 0 | 4 |
| Future Vol, veh/h | 0 | 0 | 527 | 9 | 0 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | - | 0 |
| Veh in Median Storage, # | - | - | 0 | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 6 | 6 |
| Mvmt Flow | 0 | 0 | 586 | 10 | 0 | 4 |

| Major/Minor | Major2 | | Minor2 | |
|---|---|---|---|---|
| Conflicting Flow All | - | 0 | - | 591 |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |
| Critical Hdwy | - | - | - | 6.26 |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - |
| Follow-up Hdwy | - | - | - | 3.354 |
| Pot Cap-1 Maneuver | - | - | 0 | 499 |
| Stage 1 | - | - | 0 | - |
| Stage 2 | - | - | 0 | - |
| Platoon blocked, % | - | - | | |
| Mov Cap-1 Maneuver | - | - | - | 499 |
| Mov Cap-2 Maneuver | - | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |

| Approach | WB | SB |
|---|---|---|
| HCM Control Delay, s | 0 | 12.3 |
| HCM LOS | | B |

| Minor Lane/Major Mvmt | WBT | WBR | SBLn1 |
|---|---|---|---|
| Capacity (veh/h) | - | - | 499 |
| HCM Lane V/C Ratio | - | - | 0.009 |
| HCM Control Delay (s) | - | - | 12.3 |
| HCM Lane LOS | - | - | B |
| HCM 95th %tile Q(veh) | - | - | 0 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 8 | 610 | 4 | 38 | 4 | 0 | 0 | 4 | 4 |
| Future Vol, veh/h | 0 | 0 | 0 | 8 | 610 | 4 | 38 | 4 | 0 | 0 | 4 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | - | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 4 | 4 | 4 | 2 | 2 | 2 | 2 | 2 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 9 | 678 | 4 | 42 | 4 | 0 | 0 | 4 | 4 |

| Major/Minor | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 0 | 359 | 700 | - | - | 698 | 341 |
| Stage 1 | - | - | - | 0 | 0 | - | - | 698 | - |
| Stage 2 | - | - | - | 359 | 700 | - | - | 0 | - |
| Critical Hdwy | 4.18 | - | - | 7.54 | 6.54 | - | - | 6.54 | 6.94 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | 5.54 | - |
| Critical Hdwy Stg 2 | - | - | - | 6.54 | 5.54 | - | - | - | - |
| Follow-up Hdwy | 2.24 | - | - | 3.52 | 4.02 | - | - | 4.02 | 3.32 |
| Pot Cap-1 Maneuver | - | - | - | 572 | 362 | 0 | 0 | 363 | 655 |
| Stage 1 | - | - | - | - | - | 0 | 0 | 440 | - |
| Stage 2 | - | - | - | 632 | 440 | 0 | 0 | - | - |
| Platoon blocked, % | | - | - | | | | | | |
| Mov Cap-1 Maneuver | - | - | - | 563 | 362 | - | - | 363 | 655 |
| Mov Cap-2 Maneuver | - | - | - | 563 | 362 | - | - | 363 | - |
| Stage 1 | - | - | - | - | - | - | - | 440 | - |
| Stage 2 | - | - | - | 621 | 440 | - | - | - | - |

| Approach | WB | NB | SB |
|---|---|---|---|
| HCM Control Delay, s | | 12.4 | 12.9 |
| HCM LOS | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|
| Capacity (veh/h) | 535 | - | - | - | 467 |
| HCM Lane V/C Ratio | 0.087 | - | - | - | 0.019 |
| HCM Control Delay (s) | 12.4 | - | - | - | 12.9 |
| HCM Lane LOS | B | - | - | - | B |
| HCM 95th %tile Q(veh) | 0.3 | - | - | - | 0.1 |

## Summary of All Intervals

| Start Time | 6:57 |
|---|---|
| End Time | 7:10 |
| Total Time (min) | 13 |
| Time Recorded (min) | 10 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 859 |
| Vehs Exited | 826 |
| Starting Vehs | 109 |
| Ending Vehs | 142 |
| Travel Distance (mi) | 788 |
| Travel Time (hr) | 20.3 |
| Total Delay (hr) | 2.2 |
| Total Stops | 184 |
| Fuel Used (gal) | 24.6 |

## Interval #0 Information Seeding

| Start Time | 6:57 |
|---|---|
| End Time | 7:00 |
| Total Time (min) | 3 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 7:00 |
|---|---|
| End Time | 7:10 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 859 |
|---|---|
| Vehs Exited | 826 |
| Starting Vehs | 109 |
| Ending Vehs | 142 |
| Travel Distance (mi) | 788 |
| Travel Time (hr) | 20.3 |
| Total Delay (hr) | 2.2 |
| Total Stops | 184 |
| Fuel Used (gal) | 24.6 |

## Intersection: 1: 13th Street SW & US 321 On/Off Ramp

| Movement | WB | SB |
|---|---|---|
| Directions Served | LR | L |
| Maximum Queue (ft) | 53 | 31 |
| Average Queue (ft) | 34 | 6 |
| 95th Queue (ft) | 50 | 27 |
| Link Distance (ft) | 545 | |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | 100 |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 2: 13th Street SW & US 321 SB Off Ramp

| Movement | EB |
|---|---|
| Directions Served | LR |
| Maximum Queue (ft) | 76 |
| Average Queue (ft) | 52 |
| 95th Queue (ft) | 84 |
| Link Distance (ft) | 523 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 3: NB US 321 & US 321 NB Off Ramp

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 4: NB US 321 & US 321 SB Off Ramp

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 13: 1st street SW Connector & 1st Avenue SW

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 15: NB US 321 & 13th Street U-turn

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 18: 1st Avenue SW

| Movement | |
|---|---|
| Directions Served | |
| Maximum Queue (ft) | |
| Average Queue (ft) | |
| 95th Queue (ft) | |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 32: 15 St SW & 1st Street SW Connector/2nd Avenue SW

| Movement | NB | SB |
|---|---|---|
| Directions Served | TR | LT |
| Maximum Queue (ft) | 53 | 74 |
| Average Queue (ft) | 17 | 31 |
| 95th Queue (ft) | 53 | 70 |
| Link Distance (ft) | 304 | 256 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 34: 2nd Ave SW/2nd Avenue SW

| Movement | NB | SB |
|---|---|---|
| Directions Served | R | LT |
| Maximum Queue (ft) | 63 | 73 |
| Average Queue (ft) | 20 | 50 |
| 95th Queue (ft) | 62 | 73 |
| Link Distance (ft) | 171 | 368 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 35: 12th Street SW & 2nd Avenue SW/2nd Avenue

| Movement | NB | SB |
|---|---|---|
| Directions Served | TR | LT |
| Maximum Queue (ft) | 23 | 27 |
| Average Queue (ft) | 13 | 11 |
| 95th Queue (ft) | 32 | 32 |
| Link Distance (ft) | 140 | 272 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 36: 15 St SW & 1st Avenue SW

| Movement | NB |
|---|---|
| Directions Served | LR |
| Maximum Queue (ft) | 28 |
| Average Queue (ft) | 21 |
| 95th Queue (ft) | 38 |
| Link Distance (ft) | 256 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 37: 1st Avenue SW & 14th Street SW

| Movement | SB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 15 |
| Average Queue (ft) | 3 |
| 95th Queue (ft) | 13 |
| Link Distance (ft) | 453 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 38: 1st Avenue SW & Driveway

| Movement | SB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 28 |
| Average Queue (ft) | 6 |
| 95th Queue (ft) | 24 |
| Link Distance (ft) | 190 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 39: 12th Street SW & 1st Avenue SW/1st Avenue

| Movement | NB | SB |
|---|---|---|
| Directions Served | LT | TR |
| Maximum Queue (ft) | 24 | 22 |
| Average Queue (ft) | 19 | 4 |
| 95th Queue (ft) | 35 | 19 |
| Link Distance (ft) | 272 | 266 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Network Summary

Network wide Queuing Penalty: 0

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 201 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Freeway Number of Lanes, N | 2 | Downstream Adj Ramp | |
|---|---|---|---|---|---|
| ☐ Yes | ☐ On | Ramp Number of Lanes, N | 1 | ☑ Yes | ☑ On |
| ☑ No | ☐ Off | Acceleration Lane Length, $L_A$ | | ☐ No | ☐ Off |
| $L_{up}$ = | ft | Deceleration Lane Length $L_D$ | 100 | $L_{down}$ = | 200 ft |
| $V_u$ = | veh/h | Freeway Volume, $V_F$ | 1647 | $V_D$ = | 243 veh/h |
| | | Ramp Volume, $V_R$ | 126 | | |
| | | Freeway Free-Flow Speed, $S_{FF}$ | 55.0 | | |
| | | Ramp Free-Flow Speed, $S_{FR}$ | 35.0 | | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1647 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 1967 |
| Ramp | 126 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 150 |
| UpStream | | | | | | | | |
| DownStream | 243 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 290 |

### Merge Areas

#### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = using Equation (Exhibit 13-6)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

#### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

#### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

#### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

#### Speed Determination

$M_S$ = (Exibit 13-11)

$S_R$= mph (Exhibit 13-11)

$S_0$= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

### Diverge Areas

#### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)

$V_{12}$ = 1967 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

#### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 1967 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 1817 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 150 | Exhibit 13-10 | 2000 | No |

#### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 1967 | Exhibit 13-8 | 4400:All | No |

#### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = 20.3 (pc/mi/ln)

LOS = C (Exhibit 13-2)

#### Speed Determination

$D_s$ = 0.442 (Exhibit 13-12)

$S_R$= 49.3 mph (Exhibit 13-12)

$S_0$= N/A mph (Exhibit 13-12)

S = 49.3 mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 201 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Freeway Number of Lanes, N | 2 | Downstream Adj Ramp | |
|---|---|---|---|---|---|
| ☐ Yes | ☐ On | Ramp Number of Lanes, N | 1 | ☑ Yes | ☑ On |
| ☑ No | ☐ Off | Acceleration Lane Length, $L_A$ | | ☐ No | ☐ Off |
| $L_{up}$ = | ft | Deceleration Lane Length $L_D$ | 100 | $L_{down}$ = | 200 ft |
| $V_u$ = | veh/h | Freeway Volume, $V_F$ | 2055 | $V_D$ = | 194 veh/h |
| | | Ramp Volume, $V_R$ | 137 | | |
| | | Freeway Free-Flow Speed, $S_{FF}$ | 55.0 | | |
| | | Ramp Free-Flow Speed, $S_{FR}$ | 35.0 | | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 2055 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2455 |
| Ramp | 137 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 164 |
| UpStream | | | | | | | | |
| DownStream | 194 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 232 |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = using Equation (Exhibit 13-6)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$M_S$ = (Exibit 13-11)

$S_R$= mph (Exhibit 13-11)

$S_0$= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)

$V_{12}$ = 2455 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 2455 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 2291 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 164 | Exhibit 13-10 | 2000 | No |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 2455 | Exhibit 13-8 | 4400:All | No |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = 24.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

### Speed Determination

$D_s$ = 0.443 (Exhibit 13-12)

$S_R$= 49.2 mph (Exhibit 13-12)

$S_0$= N/A mph (Exhibit 13-12)

S = 49.2 mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 202 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Downstream Adj Ramp |
|---|---|---|
| ☑ Yes ☐ On | Freeway Number of Lanes, N: 2 | ☐ Yes ☐ On |
| ☐ No ☑ Off | Ramp Number of Lanes, N: 1 | ☑ No ☐ Off |
| $L_{up}$ = 700 ft | Acceleration Lane Length, $L_A$: 500 | $L_{down}$ = ft |
| $V_u$ = 136 veh/h | Deceleration Lane Length $L_D$: | $V_D$ = veh/h |
| | Freeway Volume, $V_F$: 1917 | |
| | Ramp Volume, $V_R$: 194 | |
| | Freeway Free-Flow Speed, $S_{FF}$: 55.0 | |
| | Ramp Free-Flow Speed, $S_{FR}$: 35.0 | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1917 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2290 |
| Ramp | 194 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 232 |
| UpStream | 136 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 162 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = 1.000 using Equation (Exhibit 13-6)

$V_{12}$ = 2290 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 2522 | Exhibit 13-8 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 2522 | Exhibit 13-8 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$

$D_R$ = 21.9 (pc/mi/ln)

LOS = C (Exhibit 13-2)

### Speed Determination

$M_S$ = 0.335 (Exibit 13-11)

$S_R$ = 50.7 mph (Exhibit 13-11)

$S_0$ = N/A mph (Exhibit 13-11)

S = 50.7 mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = using Equation (Exhibit 13-7)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 13-8 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 13-8 | | |
| $V_R$ | | Exhibit 13-10 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$D_s$ = (Exhibit 13-12)

$S_R$ = mph (Exhibit 13-12)

$S_0$ = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 202 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Freeway Number of Lanes, N | 2 | Downstream Adj Ramp | |
|---|---|---|---|---|---|
| ☑ Yes | ☐ On | Ramp Number of Lanes, N | 1 | ☐ Yes | ☐ On |
| ☐ No | ☑ Off | Acceleration Lane Length, $L_A$ | 500 | ☑ No | ☐ Off |
| $L_{up}$ = | 700 ft | Deceleration Lane Length $L_D$ | | $L_{down}$ = | ft |
| $V_u$ = | 243 veh/h | Freeway Volume, $V_F$ | 1520 | $V_D$ = | veh/h |
| | | Ramp Volume, $V_R$ | 127 | | |
| | | Freeway Free-Flow Speed, $S_{FF}$ | 55.0 | | |
| | | Ramp Free-Flow Speed, $S_{FR}$ | 35.0 | | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1520 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 1816 |
| Ramp | 127 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 152 |
| UpStream | 243 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 290 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = 1.000 using Equation (Exhibit 13-6)

$V_{12}$ = 1816 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 1968 | Exhibit 13-8 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 1968 | Exhibit 13-8 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$

$D_R$ = 17.6 (pc/mi/ln)

LOS = B (Exhibit 13-2)

### Speed Determination

$M_S$ = 0.314 (Exibit 13-11)

$S_R$ = 50.9 mph (Exhibit 13-11)

$S_0$ = N/A mph (Exhibit 13-11)

S = 50.9 mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = using Equation (Exhibit 13-7)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 13-8 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 13-8 | | |
| $V_R$ | | Exhibit 13-10 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$D_s$ = (Exhibit 13-12)

$S_R$ = mph (Exhibit 13-12)

$S_0$ = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 203 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Downstream Adj Ramp |
|---|---|---|
| ☑ Yes ☐ On | Freeway Number of Lanes, N: 2 | ☐ Yes ☐ On |
| ☐ No ☑ Off | Ramp Number of Lanes, N: 1 | ☑ No ☐ Off |
| $L_{up}$ = 200 ft | Acceleration Lane Length, $L_A$: 500 | $L_{down}$ = ft |
| $V_u$ = 116 veh/h | Deceleration Lane Length $L_D$: | $V_D$ = veh/h |
| | Freeway Volume, $V_F$: 1534 | |
| | Ramp Volume, $V_R$: 59 | |
| | Freeway Free-Flow Speed, $S_{FF}$: 55.0 | |
| | Ramp Free-Flow Speed, $S_{FR}$: 35.0 | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1534 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 1832 |
| Ramp | 59 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 70 |
| UpStream | 116 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 139 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = 1.000 using Equation (Exhibit 13-6)

$V_{12}$ = 1832 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 1902 | Exhibit 13-8 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 1902 | Exhibit 13-8 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$

$D_R$ = 17.1 (pc/mi/ln)

LOS = B (Exhibit 13-2)

### Speed Determination

$M_S$ = 0.312 (Exibit 13-11)

$S_R$ = 50.9 mph (Exhibit 13-11)

$S_0$ = N/A mph (Exhibit 13-11)

S = 50.9 mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = using Equation (Exhibit 13-7)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 13-8 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 13-8 | | |
| $V_R$ | | Exhibit 13-10 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$D_s$ = (Exhibit 13-12)

$S_R$ = mph (Exhibit 13-12)

$S_0$ = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 203 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Downstream Adj Ramp |
|---|---|---|
| ☑ Yes ☐ On | Freeway Number of Lanes, N: 2 | ☐ Yes ☐ On |
| ☐ No ☑ Off | Ramp Number of Lanes, N: 1 | ☑ No ☐ Off |
| $L_{up}$ = 200 ft | Acceleration Lane Length, $L_A$: 500 | $L_{down}$ = ft |
| $V_u$ = 102 veh/h | Deceleration Lane Length $L_D$: | $V_D$ = veh/h |
| | Freeway Volume, $V_F$: 1850 | |
| | Ramp Volume, $V_R$: 86 | |
| | Freeway Free-Flow Speed, $S_{FF}$: 55.0 | |
| | Ramp Free-Flow Speed, $S_{FR}$: 35.0 | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1850 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2210 |
| Ramp | 86 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 103 |
| UpStream | 102 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 122 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = 1.000 using Equation (Exhibit 13-6)

$V_{12}$ = 2210 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 2313 | Exhibit 13-8 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 2313 | Exhibit 13-8 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$

$D_R$ = 20.3 (pc/mi/ln)

LOS = C (Exhibit 13-2)

### Speed Determination

$M_S$ = 0.325 (Exibit 13-11)

$S_R$ = 50.8 mph (Exhibit 13-11)

$S_0$ = N/A mph (Exhibit 13-11)

S = 50.8 mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = using Equation (Exhibit 13-7)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 13-8 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 13-8 | | |
| $V_R$ | | Exhibit 13-10 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$D_s$ = (Exhibit 13-12)

$S_R$ = mph (Exhibit 13-12)

$S_0$ = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 204 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Freeway Number of Lanes, N | 2 | Downstream Adj Ramp | |
|---|---|---|---|---|---|
| ☐ Yes | ☐ On | Ramp Number of Lanes, N | 1 | ☑ Yes | ☑ On |
| ☑ No | ☐ Off | Acceleration Lane Length, $L_A$ | | ☐ No | ☐ Off |
| $L_{up}$ = | ft | Deceleration Lane Length $L_D$ | 100 | $L_{down}$ = | 700 ft |
| $V_u$ = | veh/h | Freeway Volume, $V_F$ | 2111 | $V_D$ = | 136 veh/h |
| | | Ramp Volume, $V_R$ | 194 | | |
| | | Freeway Free-Flow Speed, $S_{FF}$ | 55.0 | | |
| | | Ramp Free-Flow Speed, $S_{FR}$ | 35.0 | | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 2111 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2521 |
| Ramp | 194 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 232 |
| UpStream | | | | | | | | |
| DownStream | 136 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 162 |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = using Equation (Exhibit 13-6)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$M_S$ = (Exibit 13-11)

$S_R$= mph (Exhibit 13-11)

$S_0$= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)

$V_{12}$ = 2521 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 2521 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 2289 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 232 | Exhibit 13-10 | 2000 | No |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 2521 | Exhibit 13-8 | 4400:All | No |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = 25.0 (pc/mi/ln)

LOS = C (Exhibit 13-2)

### Speed Determination

$D_s$ = 0.449 (Exhibit 13-12)

$S_R$= 49.2 mph (Exhibit 13-12)

$S_0$= N/A mph (Exhibit 13-12)

S = 49.2 mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 204 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Freeway Number of Lanes, N | 2 | Downstream Adj Ramp | |
|---|---|---|---|---|---|
| ☐ Yes | ☐ On | Ramp Number of Lanes, N | 1 | ☑ Yes | ☑ On |
| ☑ No | ☐ Off | Acceleration Lane Length, $L_A$ | | ☐ No | ☐ Off |
| $L_{up}$ = | ft | Deceleration Lane Length $L_D$ | 100 | $L_{down}$ = | 700 ft |
| $V_u$ = | veh/h | Freeway Volume, $V_F$ | 1763 | $V_D$ = | 127 veh/h |
| | | Ramp Volume, $V_R$ | 243 | | |
| | | Freeway Free-Flow Speed, $S_{FF}$ | 55.0 | | |
| | | Ramp Free-Flow Speed, $S_{FR}$ | 35.0 | | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1763 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2106 |
| Ramp | 243 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 290 |
| UpStream | | | | | | | | |
| DownStream | 127 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 152 |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = using Equation (Exhibit 13-6)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$M_S$ = (Exibit 13-11)

$S_R$= mph (Exhibit 13-11)

$S_0$= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)

$V_{12}$ = 2106 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 2106 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 1816 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 290 | Exhibit 13-10 | 2000 | No |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 2106 | Exhibit 13-8 | 4400:All | No |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = 21.5 (pc/mi/ln)

LOS = C (Exhibit 13-2)

### Speed Determination

$D_s$ = 0.454 (Exhibit 13-12)

$S_R$= 49.1 mph (Exhibit 13-12)

$S_0$= N/A mph (Exhibit 13-12)

S = 49.1 mph (Exhibit 13-13)



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# APPENDIX G

## 2040 Build Alternative 13th Street – Two-Way Split Partial Cloverleaf Interchange Synchro, SimTraffic & HCS Reports

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 4 | 152 | 5 | 92 | 270 | 8 | 12 | 4 | 130 | 5 | 4 | 4 |
| Future Vol, veh/h | 4 | 152 | 5 | 92 | 270 | 8 | 12 | 4 | 130 | 5 | 4 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 3 | 3 | 3 | 8 | 8 | 8 | 8 | 8 | 8 | 6 | 6 | 6 |
| Mvmt Flow | 4 | 169 | 6 | 102 | 300 | 9 | 13 | 4 | 144 | 6 | 4 | 4 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 309 | 0 | 0 | 174 | 0 | 0 | 694 | 694 | 172 | 764 | 692 | 304 |
| Stage 1 | - | - | - | - | - | - | 181 | 181 | - | 509 | 509 | - |
| Stage 2 | - | - | - | - | - | - | 513 | 513 | - | 255 | 183 | - |
| Critical Hdwy | 4.13 | - | - | 4.18 | - | - | 7.18 | 6.58 | 6.28 | 7.16 | 6.56 | 6.26 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.18 | 5.58 | - | 6.16 | 5.56 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.18 | 5.58 | - | 6.16 | 5.56 | - |
| Follow-up Hdwy | 2.227 | - | - | 2.272 | - | - | 3.572 | 4.072 | 3.372 | 3.554 | 4.054 | 3.354 |
| Pot Cap-1 Maneuver | 1246 | - | - | 1367 | - | - | 349 | 359 | 856 | 316 | 362 | 726 |
| Stage 1 | - | - | - | - | - | - | 807 | 739 | - | 539 | 532 | - |
| Stage 2 | - | - | - | - | - | - | 533 | 526 | - | 741 | 741 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1246 | - | - | 1367 | - | - | 319 | 325 | 856 | 241 | 328 | 726 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 319 | 325 | - | 241 | 328 | - |
| Stage 1 | - | - | - | - | - | - | 804 | 736 | - | 537 | 484 | - |
| Stage 2 | - | - | - | - | - | - | 478 | 479 | - | 610 | 738 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.2 | 2 | 11.4 | 16.1 |
| HCM LOS | | | B | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 724 | 1246 | - | - | 1367 | - | - | 338 |
| HCM Lane V/C Ratio | 0.224 | 0.004 | - | - | 0.075 | - | - | 0.043 |
| HCM Control Delay (s) | 11.4 | 7.9 | 0 | - | 7.8 | 0 | - | 16.1 |
| HCM Lane LOS | B | A | A | - | A | A | - | C |
| HCM 95th %tile Q(veh) | 0.9 | 0 | - | - | 0.2 | - | - | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 5.1 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 186 | 103 | 95 | 287 | 78 | 125 |
| Future Vol, veh/h | 186 | 103 | 95 | 287 | 78 | 125 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 5 | 5 |
| Mvmt Flow | 207 | 114 | 106 | 319 | 87 | 139 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 321 | 0 | 794 | 264 |
| Stage 1 | - | - | - | - | 264 | - |
| Stage 2 | - | - | - | - | 530 | - |
| Critical Hdwy | - | - | 4.13 | - | 6.45 | 6.25 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.45 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.45 | - |
| Follow-up Hdwy | - | - | 2.227 | - | 3.545 | 3.345 |
| Pot Cap-1 Maneuver | - | - | 1233 | - | 353 | 767 |
| Stage 1 | - | - | - | - | 773 | - |
| Stage 2 | - | - | - | - | 584 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1233 | - | 316 | 767 |
| Mov Cap-2 Maneuver | - | - | - | - | 316 | - |
| Stage 1 | - | - | - | - | 773 | - |
| Stage 2 | - | - | - | - | 523 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 2 | 18.2 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 495 | - | - | 1233 | - |
| HCM Lane V/C Ratio | 0.456 | - | - | 0.086 | - |
| HCM Control Delay (s) | 18.2 | - | - | 8.2 | 0 |
| HCM Lane LOS | C | - | - | A | A |
| HCM 95th %tile Q(veh) | 2.3 | - | - | 0.3 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 14.2 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 9 | 251 | 98 | 152 | 234 | 4 | 125 | 4 | 62 | 4 | 4 | 4 |
| Future Vol, veh/h | 9 | 251 | 98 | 152 | 234 | 4 | 125 | 4 | 62 | 4 | 4 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | Stop | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 5 | 7 | 7 | 7 |
| Mvmt Flow | 10 | 279 | 109 | 169 | 260 | 4 | 139 | 4 | 69 | 4 | 4 | 4 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 264 | 0 | 0 | 388 | 0 | 0 | 957 | 955 | 333 | 956 | 1008 | 262 |
| Stage 1 | - | - | - | - | - | - | 353 | 353 | - | 600 | 600 | - |
| Stage 2 | - | - | - | - | - | - | 604 | 602 | - | 356 | 408 | - |
| Critical Hdwy | 4.13 | - | - | 4.14 | - | - | 7.15 | 6.55 | 6.25 | 7.17 | 6.57 | 6.27 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.15 | 5.55 | - | 6.17 | 5.57 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.15 | 5.55 | - | 6.17 | 5.57 | - |
| Follow-up Hdwy | 2.227 | - | - | 2.236 | - | - | 3.545 | 4.045 | 3.345 | 3.563 | 4.063 | 3.363 |
| Pot Cap-1 Maneuver | 1294 | - | - | 1160 | - | - | 234 | 255 | 702 | 233 | 236 | 765 |
| Stage 1 | - | - | - | - | - | - | 658 | 626 | - | 479 | 482 | - |
| Stage 2 | - | - | - | - | - | - | 480 | 484 | - | 651 | 588 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1294 | - | - | 1160 | - | - | 197 | 209 | 702 | 178 | 194 | 765 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 197 | 209 | - | 178 | 194 | - |
| Stage 1 | - | - | - | - | - | - | 651 | 620 | - | 474 | 400 | - |
| Stage 2 | - | - | - | - | - | - | 391 | 401 | - | 577 | 582 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.2 | 3.4 | 61.9 | 20.3 |
| HCM LOS | | | F | C |

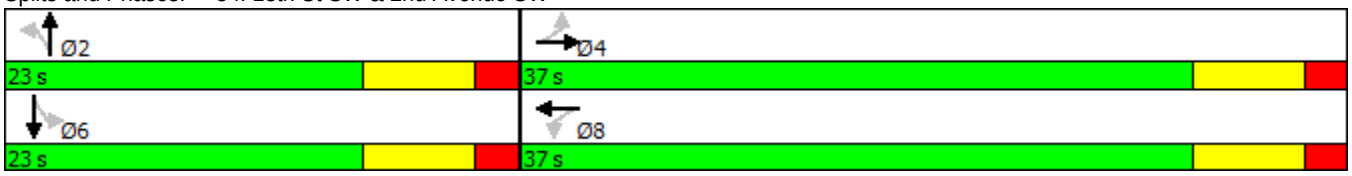
| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 257 | 1294 | - | - | 1160 | - | - | 248 |
| HCM Lane V/C Ratio | 0.826 | 0.008 | - | - | 0.146 | - | - | 0.054 |
| HCM Control Delay (s) | 61.9 | 7.8 | 0 | - | 8.6 | 0 | - | 20.3 |
| HCM Lane LOS | F | A | A | - | A | A | - | C |
| HCM 95th %tile Q(veh) | 6.6 | 0 | - | - | 0.5 | - | - | 0.2 |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 9 | 251 | 98 | 152 | 234 | 4 | 125 | 4 | 62 | 4 | 4 | 4 |
| Future Volume (vph) | 9 | 251 | 98 | 152 | 234 | 4 | 125 | 4 | 62 | 4 | 4 | 4 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. 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 |
| Frt | | 0.963 | | | 0.999 | | | 0.956 | | | 0.955 | |
| Flt Protected | | 0.999 | | | 0.981 | | | 0.968 | | | 0.984 | |
| Satd. Flow (prot) | 0 | 1775 | 0 | 0 | 1790 | 0 | 0 | 1675 | 0 | 0 | 1669 | 0 |
| Flt Permitted | | 0.987 | | | 0.725 | | | 0.795 | | | 0.883 | |
| Satd. Flow (perm) | 0 | 1753 | 0 | 0 | 1323 | 0 | 0 | 1375 | 0 | 0 | 1497 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 25 | |
| Link Distance (ft) | | 984 | | | 317 | | | 579 | | | 323 | |
| Travel Time (s) | | 19.2 | | | 6.2 | | | 11.3 | | | 8.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 4% | 4% | 4% | 5% | 5% | 5% | 7% | 7% | 7% |
| Adj. Flow (vph) | 10 | 279 | 109 | 169 | 260 | 4 | 139 | 4 | 69 | 4 | 4 | 4 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 398 | 0 | 0 | 433 | 0 | 0 | 212 | 0 | 0 | 12 | 0 |
| Turn Type | Perm | NA | | Perm | NA | | Perm | NA | | Perm | NA | |
| Protected Phases | | 4 | | | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | 8 | | | 2 | | | 6 | | |
| Detector Phase | 4 | 4 | | 8 | 8 | | 2 | 2 | | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | | 10.0 | 10.0 | | 7.0 | 7.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | 17.0 | 17.0 | | 17.0 | 17.0 | | 14.0 | 14.0 | | 14.0 | 14.0 | |
| Total Split (s) | 37.0 | 37.0 | | 37.0 | 37.0 | | 23.0 | 23.0 | | 23.0 | 23.0 | |
| Total Split (%) | 61.7% | 61.7% | | 61.7% | 61.7% | | 38.3% | 38.3% | | 38.3% | 38.3% | |
| Maximum Green (s) | 30.0 | 30.0 | | 30.0 | 30.0 | | 16.0 | 16.0 | | 16.0 | 16.0 | |
| Yellow Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | -2.0 | | | -2.0 | | | -2.0 | | | -2.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | Min | Min | | Min | Min | | None | None | | None | None | |
| Act Effct Green (s) | | 25.7 | | | 25.7 | | | 14.3 | | | 14.3 | |
| Actuated g/C Ratio | | 0.51 | | | 0.51 | | | 0.28 | | | 0.28 | |
| v/c Ratio | | 0.44 | | | 0.64 | | | 0.54 | | | 0.03 | |
| Control Delay | | 10.1 | | | 14.8 | | | 21.6 | | | 14.4 | |
| Queue Delay | | 0.0 | | | 0.0 | | | 0.0 | | | 0.0 | |
| Total Delay | | 10.1 | | | 14.8 | | | 21.6 | | | 14.4 | |
| LOS | | B | | | B | | | C | | | B | |
| Approach Delay | | 10.1 | | | 14.8 | | | 21.6 | | | 14.4 | |
| Approach LOS | | B | | | B | | | C | | | B | |
| Queue Length 50th (ft) | | 66 | | | 82 | | | 46 | | | 2 | |
| Queue Length 95th (ft) | | 135 | | | 183 | | | 121 | | | 13 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | | 904 | | | 237 | | | 499 | | | 243 | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | | 1145 | | | 864 | | | 505 | | | 550 | |
| Starvation Cap Reductn | | 0 | | | 0 | | | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | | | 0 | | | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | | | 0 | | | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.35 | | | 0.50 | | | 0.42 | | | 0.02 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 60 | | | |
| Actuated Cycle Length: 50.2 | | | |
| Natural Cycle: 45 | | | |
| Control Type: Actuated-Uncoordinated | | | |
| Maximum v/c Ratio: 0.64 | | | |
| Intersection Signal Delay: 14.4 | | Intersection LOS: B | |
| Intersection Capacity Utilization 70.7% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 34: 13th St SW & 2nd Avenue SW



| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 200 | 4 | 4 | 191 | 8 | 4 |
| Future Vol, veh/h | 200 | 4 | 4 | 191 | 8 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 3 | 100 | 4 | 4 | 6 | 6 |
| Mvmt Flow | 222 | 4 | 4 | 212 | 9 | 4 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 227 | 0 | 445 | 224 |
| Stage 1 | - | - | - | - | 224 | - |
| Stage 2 | - | - | - | - | 221 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.46 | 6.26 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.46 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.46 | - |
| Follow-up Hdwy | - | - | 2.236 | - | 3.554 | 3.354 |
| Pot Cap-1 Maneuver | - | - | 1330 | - | 563 | 806 |
| Stage 1 | - | - | - | - | 804 | - |
| Stage 2 | - | - | - | - | 806 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1330 | - | 561 | 806 |
| Mov Cap-2 Maneuver | - | - | - | - | 561 | - |
| Stage 1 | - | - | - | - | 804 | - |
| Stage 2 | - | - | - | - | 804 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.2 | 10.9 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 624 | - | - | 1330 | - |
| HCM Lane V/C Ratio | 0.021 | - | - | 0.003 | - |
| HCM Control Delay (s) | 10.9 | - | - | 7.7 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0.1 | - | - | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 4 | 200 | 4 | 12 | 203 | 15 | 6 | 4 | 4 | 4 | 4 | 4 |
| Future Vol, veh/h | 4 | 200 | 4 | 12 | 203 | 15 | 6 | 4 | 4 | 4 | 4 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 3 |
| Mvmt Flow | 4 | 222 | 4 | 13 | 226 | 17 | 7 | 4 | 4 | 4 | 4 | 4 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 242 | 0 | 0 | 227 | 0 | 0 | 498 | 502 | 224 | 499 | 497 | 234 |
| Stage 1 | - | - | - | - | - | - | 233 | 233 | - | 261 | 261 | - |
| Stage 2 | - | - | - | - | - | - | 265 | 269 | - | 238 | 236 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.13 | 6.52 | 6.23 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.13 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.13 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.527 | 4.018 | 3.327 |
| Pot Cap-1 Maneuver | 1324 | - | - | 1341 | - | - | 483 | 471 | 815 | 480 | 475 | 803 |
| Stage 1 | - | - | - | - | - | - | 770 | 712 | - | 742 | 692 | - |
| Stage 2 | - | - | - | - | - | - | 740 | 687 | - | 763 | 710 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1324 | - | - | 1341 | - | - | 472 | 464 | 815 | 469 | 468 | 803 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 472 | 464 | - | 469 | 468 | - |
| Stage 1 | - | - | - | - | - | - | 768 | 710 | - | 740 | 684 | - |
| Stage 2 | - | - | - | - | - | - | 723 | 679 | - | 752 | 708 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 0.4 | 11.9 | 11.8 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 534 | 1324 | - | - | 1341 | - | - | 544 |
| HCM Lane V/C Ratio | 0.029 | 0.003 | - | - | 0.01 | - | - | 0.025 |
| HCM Control Delay (s) | 11.9 | 7.7 | 0 | - | 7.7 | 0 | - | 11.8 |
| HCM Lane LOS | B | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0 | - | - | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 4 | 200 | 4 | 4 | 218 | 4 | 10 | 4 | 4 | 4 | 4 | 4 |
| Future Vol, veh/h | 4 | 200 | 4 | 4 | 218 | 4 | 10 | 4 | 4 | 4 | 4 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 4 | 4 | 4 | 4 | 4 | 4 | 7 | 7 | 7 | 6 | 6 | 6 |
| Mvmt Flow | 4 | 222 | 4 | 4 | 242 | 4 | 11 | 4 | 4 | 4 | 4 | 4 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 247 | 0 | 0 | 227 | 0 | 0 | 491 | 489 | 224 | 491 | 489 | 244 |
| Stage 1 | - | - | - | - | - | - | 233 | 233 | - | 253 | 253 | - |
| Stage 2 | - | - | - | - | - | - | 258 | 256 | - | 238 | 236 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.17 | 6.57 | 6.27 | 7.16 | 6.56 | 6.26 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.17 | 5.57 | - | 6.16 | 5.56 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.17 | 5.57 | - | 6.16 | 5.56 | - |
| Follow-up Hdwy | 2.236 | - | - | 2.236 | - | - | 3.563 | 4.063 | 3.363 | 3.554 | 4.054 | 3.354 |
| Pot Cap-1 Maneuver | 1307 | - | - | 1330 | - | - | 480 | 472 | 803 | 481 | 474 | 785 |
| Stage 1 | - | - | - | - | - | - | 759 | 703 | - | 742 | 690 | - |
| Stage 2 | - | - | - | - | - | - | 736 | 687 | - | 756 | 702 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1307 | - | - | 1330 | - | - | 471 | 469 | 803 | 472 | 471 | 785 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 471 | 469 | - | 472 | 471 | - |
| Stage 1 | - | - | - | - | - | - | 756 | 700 | - | 739 | 688 | - |
| Stage 2 | - | - | - | - | - | - | 725 | 685 | - | 744 | 699 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 0.1 | 12.2 | 11.8 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 518 | 1307 | - | - | 1330 | - | - | 544 |
| HCM Lane V/C Ratio | 0.039 | 0.003 | - | - | 0.003 | - | - | 0.025 |
| HCM Control Delay (s) | 12.2 | 7.8 | 0 | - | 7.7 | 0 | - | 11.8 |
| HCM Lane LOS | B | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0 | - | - | 0.1 |

## Summary of All Intervals

| Start Time | 6:50 |
|---|---|
| End Time | 8:00 |
| Total Time (min) | 70 |
| Time Recorded (min) | 60 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 5297 |
| Vehs Exited | 5295 |
| Starting Vehs | 130 |
| Ending Vehs | 132 |
| Travel Distance (mi) | 4900 |
| Travel Time (hr) | 128.1 |
| Total Delay (hr) | 15.2 |
| Total Stops | 792 |
| Fuel Used (gal) | 156.6 |

## Interval #0 Information Seeding

| Start Time | 6:50 |
|---|---|
| End Time | 7:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 7:00 |
|---|---|
| End Time | 8:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 5297 |
|---|---|
| Vehs Exited | 5295 |
| Starting Vehs | 130 |
| Ending Vehs | 132 |
| Travel Distance (mi) | 4900 |
| Travel Time (hr) | 128.1 |
| Total Delay (hr) | 15.2 |
| Total Stops | 792 |
| Fuel Used (gal) | 156.6 |

## Intersection: 3: NB US 321 & 13th St SW

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 4: NB US 321 & US 321 SB Off Ramp

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 15: NB US 321 & 13th Street U-turn

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 32: 15 St SW & 1st Street SW Connector/2nd Avenue SW

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | LTR | LTR | LTR | LTR |
| Maximum Queue (ft) | 56 | 117 | 124 | 28 |
| Average Queue (ft) | 2 | 19 | 52 | 11 |
| 95th Queue (ft) | 20 | 67 | 92 | 33 |
| Link Distance (ft) | 376 | 239 | 310 | 248 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 33: US 321 SB Off Ramp & 2nd Avenue SW

| Movement | EB | WB | NB |
|---|---|---|---|
| Directions Served | TR | LT | LR |
| Maximum Queue (ft) | 30 | 90 | 111 |
| Average Queue (ft) | 1 | 25 | 52 |
| 95th Queue (ft) | 10 | 71 | 87 |
| Link Distance (ft) | 239 | 926 | 688 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 34: 13th St SW & 2nd Avenue SW

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | LTR | LTR | LTR | LTR |
| Maximum Queue (ft) | 74 | 90 | 111 | 24 |
| Average Queue (ft) | 6 | 42 | 52 | 8 |
| 95th Queue (ft) | 34 | 74 | 93 | 26 |
| Link Distance (ft) | 926 | 281 | 518 | 252 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 36: 15 St SW & 1st Avenue SW

| Movement | NB |
|---|---|
| Directions Served | LR |
| Maximum Queue (ft) | 28 |
| Average Queue (ft) | 11 |
| 95th Queue (ft) | 32 |
| Link Distance (ft) | 248 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 37: 14th Street SW & 1st Avenue SW

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | LTR | LTR | LTR | LTR |
| Maximum Queue (ft) | 28 | 50 | 22 | 16 |
| Average Queue (ft) | 1 | 3 | 9 | 4 |
| 95th Queue (ft) | 9 | 21 | 26 | 15 |
| Link Distance (ft) | 687 | 485 | 106 | 460 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 38: 13th ST SW/Driveway & 1st Avenue SW

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | LTR | LTR | LTR | LTR |
| Maximum Queue (ft) | 29 | 30 | 46 | 29 |
| Average Queue (ft) | 1 | 1 | 10 | 6 |
| 95th Queue (ft) | 9 | 10 | 33 | 26 |
| Link Distance (ft) | 485 | 310 | 252 | 191 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Network Summary

Network wide Queuing Penalty: 0

| Intersection | |
|---|---|
| Int Delay, s/veh | 3.8 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 4 | 270 | 12 | 129 | 152 | 5 | 5 | 4 | 91 | 8 | 4 | 4 |
| Future Vol, veh/h | 4 | 270 | 12 | 129 | 152 | 5 | 5 | 4 | 91 | 8 | 4 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 3 | 3 | 3 | 8 | 8 | 8 | 8 | 8 | 8 | 6 | 6 | 6 |
| Mvmt Flow | 4 | 300 | 13 | 143 | 169 | 6 | 6 | 4 | 101 | 9 | 4 | 4 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 174 | 0 | 0 | 313 | 0 | 0 | 779 | 777 | 307 | 826 | 780 | 172 |
| Stage 1 | - | - | - | - | - | - | 316 | 316 | - | 458 | 458 | - |
| Stage 2 | - | - | - | - | - | - | 463 | 461 | - | 368 | 322 | - |
| Critical Hdwy | 4.13 | - | - | 4.18 | - | - | 7.18 | 6.58 | 6.28 | 7.16 | 6.56 | 6.26 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.18 | 5.58 | - | 6.16 | 5.56 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.18 | 5.58 | - | 6.16 | 5.56 | - |
| Follow-up Hdwy | 2.227 | - | - | 2.272 | - | - | 3.572 | 4.072 | 3.372 | 3.554 | 4.054 | 3.354 |
| Pot Cap-1 Maneuver | 1397 | - | - | 1214 | - | - | 306 | 321 | 719 | 287 | 322 | 861 |
| Stage 1 | - | - | - | - | - | - | 683 | 644 | - | 575 | 560 | - |
| Stage 2 | - | - | - | - | - | - | 568 | 555 | - | 644 | 644 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1397 | - | - | 1214 | - | - | 270 | 278 | 719 | 219 | 279 | 861 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 270 | 278 | - | 219 | 279 | - |
| Stage 1 | - | - | - | - | - | - | 681 | 642 | - | 573 | 487 | - |
| Stage 2 | - | - | - | - | - | - | 487 | 482 | - | 548 | 642 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 3.8 | 12 | 18.3 |
| HCM LOS | | | B | C |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 627 | 1397 | - | - | 1214 | - | - | 288 |
| HCM Lane V/C Ratio | 0.177 | 0.003 | - | - | 0.118 | - | - | 0.062 |
| HCM Control Delay (s) | 12 | 7.6 | 0 | - | 8.4 | 0 | - | 18.3 |
| HCM Lane LOS | B | A | A | - | A | A | - | C |
| HCM 95th %tile Q(veh) | 0.6 | 0 | - | - | 0.4 | - | - | 0.2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 6.1 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 239 | 125 | 62 | 191 | 97 | 152 |
| Future Vol, veh/h | 239 | 125 | 62 | 191 | 97 | 152 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 3 | 3 | 3 | 3 | 5 | 5 |
| Mvmt Flow | 266 | 139 | 69 | 212 | 108 | 169 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 404 | 0 | 685 | 335 |
| Stage 1 | - | - | - | - | 335 | - |
| Stage 2 | - | - | - | - | 350 | - |
| Critical Hdwy | - | - | 4.13 | - | 6.45 | 6.25 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.45 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.45 | - |
| Follow-up Hdwy | - | - | 2.227 | - | 3.545 | 3.345 |
| Pot Cap-1 Maneuver | - | - | 1149 | - | 409 | 700 |
| Stage 1 | - | - | - | - | 718 | - |
| Stage 2 | - | - | - | - | 707 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1149 | - | 381 | 700 |
| Mov Cap-2 Maneuver | - | - | - | - | 381 | - |
| Stage 1 | - | - | - | - | 718 | - |
| Stage 2 | - | - | - | - | 659 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 2 | 19.1 |
| HCM LOS | | | C |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 528 | - | - | 1149 | - |
| HCM Lane V/C Ratio | 0.524 | - | - | 0.06 | - |
| HCM Control Delay (s) | 19.1 | - | - | 8.3 | 0 |
| HCM Lane LOS | C | - | - | A | A |
| HCM 95th %tile Q(veh) | 3 | - | - | 0.2 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 8.6 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 4 | 287 | 77 | 125 | 130 | 4 | 103 | 4 | 95 | 4 | 4 | 9 |
| Future Vol, veh/h | 4 | 287 | 77 | 125 | 130 | 4 | 103 | 4 | 95 | 4 | 4 | 9 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | Stop | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 3 | 3 | 3 | 4 | 4 | 4 | 5 | 5 | 5 | 7 | 7 | 7 |
| Mvmt Flow | 4 | 319 | 86 | 139 | 144 | 4 | 114 | 4 | 106 | 4 | 4 | 10 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 149 | 0 | 0 | 404 | 0 | 0 | 803 | 798 | 362 | 797 | 837 | 147 |
| Stage 1 | - | - | - | - | - | - | 371 | 371 | - | 424 | 424 | - |
| Stage 2 | - | - | - | - | - | - | 432 | 427 | - | 373 | 413 | - |
| Critical Hdwy | 4.13 | - | - | 4.14 | - | - | 7.15 | 6.55 | 6.25 | 7.17 | 6.57 | 6.27 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.15 | 5.55 | - | 6.17 | 5.57 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.15 | 5.55 | - | 6.17 | 5.57 | - |
| Follow-up Hdwy | 2.227 | - | - | 2.236 | - | - | 3.545 | 4.045 | 3.345 | 3.563 | 4.063 | 3.363 |
| Pot Cap-1 Maneuver | 1426 | - | - | 1144 | - | - | 298 | 316 | 676 | 299 | 297 | 887 |
| Stage 1 | - | - | - | - | - | - | 643 | 614 | - | 598 | 579 | - |
| Stage 2 | - | - | - | - | - | - | 596 | 580 | - | 638 | 585 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1426 | - | - | 1144 | - | - | 260 | 273 | 676 | 223 | 256 | 887 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 260 | 273 | - | 223 | 256 | - |
| Stage 1 | - | - | - | - | - | - | 640 | 612 | - | 596 | 502 | - |
| Stage 2 | - | - | - | - | - | - | 506 | 503 | - | 532 | 583 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 4.1 | 29.2 | 14.7 |
| HCM LOS | | | D | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 366 | 1426 | - | - | 1144 | - | - | 389 |
| HCM Lane V/C Ratio | 0.613 | 0.003 | - | - | 0.121 | - | - | 0.049 |
| HCM Control Delay (s) | 29.2 | 7.5 | 0 | - | 8.6 | 0 | - | 14.7 |
| HCM Lane LOS | D | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 3.9 | 0 | - | - | 0.4 | - | - | 0.2 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 200 | 4 | 4 | 193 | 5 | 4 |
| Future Vol, veh/h | 200 | 4 | 4 | 193 | 5 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 3 | 100 | 4 | 4 | 6 | 6 |
| Mvmt Flow | 222 | 4 | 4 | 214 | 6 | 4 |

| Major/Minor | Major1 | | Major2 | | Minor1 | |
|---|---|---|---|---|---|---|
| Conflicting Flow All | 0 | 0 | 227 | 0 | 447 | 224 |
| Stage 1 | - | - | - | - | 224 | - |
| Stage 2 | - | - | - | - | 223 | - |
| Critical Hdwy | - | - | 4.14 | - | 6.46 | 6.26 |
| Critical Hdwy Stg 1 | - | - | - | - | 5.46 | - |
| Critical Hdwy Stg 2 | - | - | - | - | 5.46 | - |
| Follow-up Hdwy | - | - | 2.236 | - | 3.554 | 3.354 |
| Pot Cap-1 Maneuver | - | - | 1330 | - | 562 | 806 |
| Stage 1 | - | - | - | - | 804 | - |
| Stage 2 | - | - | - | - | 805 | - |
| Platoon blocked, % | - | - | | - | | |
| Mov Cap-1 Maneuver | - | - | 1330 | - | 560 | 806 |
| Mov Cap-2 Maneuver | - | - | - | - | 560 | - |
| Stage 1 | - | - | - | - | 804 | - |
| Stage 2 | - | - | - | - | 803 | - |

| Approach | EB | WB | NB |
|---|---|---|---|
| HCM Control Delay, s | 0 | 0.2 | 10.6 |
| HCM LOS | | | B |

| Minor Lane/Major Mvmt | NBLn1 | EBT | EBR | WBL | WBT |
|---|---|---|---|---|---|
| Capacity (veh/h) | 648 | - | - | 1330 | - |
| HCM Lane V/C Ratio | 0.015 | - | - | 0.003 | - |
| HCM Control Delay (s) | 10.6 | - | - | 7.7 | 0 |
| HCM Lane LOS | B | - | - | A | A |
| HCM 95th %tile Q(veh) | 0 | - | - | 0 | - |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 4 | 200 | 4 | 7 | 197 | 27 | 11 | 4 | 4 | 4 | 4 | 4 |
| Future Vol, veh/h | 4 | 200 | 4 | 7 | 197 | 27 | 11 | 4 | 4 | 4 | 4 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 3 |
| Mvmt Flow | 4 | 222 | 4 | 8 | 219 | 30 | 12 | 4 | 4 | 4 | 4 | 4 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 249 | 0 | 0 | 227 | 0 | 0 | 487 | 497 | 224 | 487 | 485 | 234 |
| Stage 1 | - | - | - | - | - | - | 233 | 233 | - | 249 | 249 | - |
| Stage 2 | - | - | - | - | - | - | 254 | 264 | - | 238 | 236 | - |
| Critical Hdwy | 4.12 | - | - | 4.12 | - | - | 7.12 | 6.52 | 6.22 | 7.13 | 6.52 | 6.23 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.13 | 5.52 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.12 | 5.52 | - | 6.13 | 5.52 | - |
| Follow-up Hdwy | 2.218 | - | - | 2.218 | - | - | 3.518 | 4.018 | 3.318 | 3.527 | 4.018 | 3.327 |
| Pot Cap-1 Maneuver | 1317 | - | - | 1341 | - | - | 491 | 475 | 815 | 489 | 482 | 803 |
| Stage 1 | - | - | - | - | - | - | 770 | 712 | - | 753 | 701 | - |
| Stage 2 | - | - | - | - | - | - | 750 | 690 | - | 763 | 710 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1317 | - | - | 1341 | - | - | 481 | 470 | 815 | 479 | 477 | 803 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 481 | 470 | - | 479 | 477 | - |
| Stage 1 | - | - | - | - | - | - | 768 | 710 | - | 751 | 696 | - |
| Stage 2 | - | - | - | - | - | - | 736 | 685 | - | 752 | 708 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 0.2 | 12.2 | 11.7 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 524 | 1317 | - | - | 1341 | - | - | 553 |
| HCM Lane V/C Ratio | 0.04 | 0.003 | - | - | 0.006 | - | - | 0.024 |
| HCM Control Delay (s) | 12.2 | 7.7 | 0 | - | 7.7 | 0 | - | 11.7 |
| HCM Lane LOS | B | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0 | - | - | 0.1 |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.9 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Vol, veh/h | 4 | 200 | 4 | 12 | 213 | 8 | 5 | 4 | 4 | 4 | 4 | 4 |
| Future Vol, veh/h | 4 | 200 | 4 | 12 | 213 | 8 | 5 | 4 | 4 | 4 | 4 | 4 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized | - | - | None | - | - | None | - | - | None | - | - | None |
| Storage Length | - | - | - | - | - | - | - | - | - | - | - | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 4 | 4 | 4 | 4 | 4 | 4 | 7 | 7 | 7 | 6 | 6 | 6 |
| Mvmt Flow | 4 | 222 | 4 | 13 | 237 | 9 | 6 | 4 | 4 | 4 | 4 | 4 |

| Major/Minor | Major1 | | | Major2 | | | Minor1 | | | Minor2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | 246 | 0 | 0 | 227 | 0 | 0 | 505 | 505 | 224 | 506 | 504 | 241 |
| Stage 1 | - | - | - | - | - | - | 233 | 233 | - | 268 | 268 | - |
| Stage 2 | - | - | - | - | - | - | 272 | 272 | - | 238 | 236 | - |
| Critical Hdwy | 4.14 | - | - | 4.14 | - | - | 7.17 | 6.57 | 6.27 | 7.16 | 6.56 | 6.26 |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | 6.17 | 5.57 | - | 6.16 | 5.56 | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | 6.17 | 5.57 | - | 6.16 | 5.56 | - |
| Follow-up Hdwy | 2.236 | - | - | 2.236 | - | - | 3.563 | 4.063 | 3.363 | 3.554 | 4.054 | 3.354 |
| Pot Cap-1 Maneuver | 1308 | - | - | 1330 | - | - | 470 | 462 | 803 | 470 | 465 | 788 |
| Stage 1 | - | - | - | - | - | - | 759 | 703 | - | 729 | 680 | - |
| Stage 2 | - | - | - | - | - | - | 723 | 676 | - | 756 | 702 | - |
| Platoon blocked, % | | - | - | | - | - | | | | | | |
| Mov Cap-1 Maneuver | 1308 | - | - | 1330 | - | - | 459 | 455 | 803 | 459 | 458 | 788 |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | 459 | 455 | - | 459 | 458 | - |
| Stage 1 | - | - | - | - | - | - | 756 | 700 | - | 726 | 673 | - |
| Stage 2 | - | - | - | - | - | - | 706 | 669 | - | 744 | 699 | - |

| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0.1 | 0.4 | 12 | 11.9 |
| HCM LOS | | | B | B |

| Minor Lane/Major Mvmt | NBLn1 | EBL | EBT | EBR | WBL | WBT | WBR | SBLn1 |
|---|---|---|---|---|---|---|---|---|
| Capacity (veh/h) | 527 | 1308 | - | - | 1330 | - | - | 533 |
| HCM Lane V/C Ratio | 0.027 | 0.003 | - | - | 0.01 | - | - | 0.025 |
| HCM Control Delay (s) | 12 | 7.8 | 0 | - | 7.7 | 0 | - | 11.9 |
| HCM Lane LOS | B | A | A | - | A | A | - | B |
| HCM 95th %tile Q(veh) | 0.1 | 0 | - | - | 0 | - | - | 0.1 |

## Summary of All Intervals

| Start Time | 4:50 |
|---|---|
| End Time | 6:00 |
| Total Time (min) | 70 |
| Time Recorded (min) | 60 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 5286 |
| Vehs Exited | 5314 |
| Starting Vehs | 143 |
| Ending Vehs | 115 |
| Travel Distance (mi) | 4921 |
| Travel Time (hr) | 129.0 |
| Total Delay (hr) | 15.1 |
| Total Stops | 835 |
| Fuel Used (gal) | 158.0 |

## Interval #0 Information Seeding

| Start Time | 4:50 |
|---|---|
| End Time | 5:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 5:00 |
|---|---|
| End Time | 6:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 5286 |
|---|---|
| Vehs Exited | 5314 |
| Starting Vehs | 143 |
| Ending Vehs | 115 |
| Travel Distance (mi) | 4921 |
| Travel Time (hr) | 129.0 |
| Total Delay (hr) | 15.1 |
| Total Stops | 835 |
| Fuel Used (gal) | 158.0 |

## Intersection: 3: NB US 321 & 13th St SW

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 4: NB US 321 & US 321 SB Off Ramp

| Movement | NB |
|---|---|
| Directions Served | T |
| Maximum Queue (ft) | 52 |
| Average Queue (ft) | 2 |
| 95th Queue (ft) | 19 |
| Link Distance (ft) | 647 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 15: NB US 321 & 13th Street U-turn

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 32: 15 St SW & 1st Street SW Connector/2nd Avenue SW

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | LTR | LTR | LTR | LTR |
| Maximum Queue (ft) | 13 | 75 | 77 | 49 |
| Average Queue (ft) | 0 | 25 | 39 | 14 |
| 95th Queue (ft) | 4 | 65 | 66 | 38 |
| Link Distance (ft) | 376 | 239 | 310 | 248 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 33: US 321 SB Off Ramp & 2nd Avenue SW

| Movement | WB | NB |
|---|---|---|
| Directions Served | LT | LR |
| Maximum Queue (ft) | 71 | 134 |
| Average Queue (ft) | 19 | 61 |
| 95th Queue (ft) | 49 | 105 |
| Link Distance (ft) | 926 | 688 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 34: 13th St SW & 2nd Avenue SW

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | LTR | LTR | LTR | LTR |
| Maximum Queue (ft) | 52 | 55 | 130 | 43 |
| Average Queue (ft) | 4 | 29 | 50 | 11 |
| 95th Queue (ft) | 23 | 64 | 91 | 33 |
| Link Distance (ft) | 926 | 281 | 518 | 252 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 36: 15 St SW & 1st Avenue SW

| Movement | NB |
|---|---|
| Directions Served | LR |
| Maximum Queue (ft) | 28 |
| Average Queue (ft) | 7 |
| 95th Queue (ft) | 25 |
| Link Distance (ft) | 248 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 37: 14th Street SW & 1st Avenue SW

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | LTR | LTR | LTR | LTR |
| Maximum Queue (ft) | 28 | 26 | 46 | 18 |
| Average Queue (ft) | 2 | 1 | 14 | 6 |
| 95th Queue (ft) | 13 | 9 | 34 | 19 |
| Link Distance (ft) | 687 | 485 | 106 | 460 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 38: 13th ST SW/Driveway & 1st Avenue SW

| Movement | EB | WB | NB | SB |
|---|---|---|---|---|
| Directions Served | LTR | LTR | LTR | LTR |
| Maximum Queue (ft) | 48 | 30 | 46 | 29 |
| Average Queue (ft) | 2 | 2 | 9 | 7 |
| 95th Queue (ft) | 16 | 14 | 31 | 26 |
| Link Distance (ft) | 485 | 310 | 252 | 191 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Network Summary

Network wide Queuing Penalty: 0

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 201 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

Upstream Adj Ramp
☐ Yes ☐ On
☑ No ☐ Off
$L_{up}$ = ft
$V_u$ = veh/h

| | |
|---|---|
| Freeway Number of Lanes, N | 2 |
| Ramp Number of Lanes, N | 1 |
| Acceleration Lane Length, $L_A$ | |
| Deceleration Lane Length $L_D$ | 100 |
| Freeway Volume, $V_F$ | 1780 |
| Ramp Volume, $V_R$ | 191 |
| Freeway Free-Flow Speed, $S_{FF}$ | 55.0 |
| Ramp Free-Flow Speed, $S_{FR}$ | 35.0 |

Downstream Adj Ramp
☑ Yes ☑ On
☐ No ☐ Off
$L_{down}$ = 200 ft
$V_D$ = 254 veh/h

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1780 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2126 |
| Ramp | 191 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 228 |
| UpStream | | | | | | | | |
| DownStream | 254 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 303 |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$
$L_{EQ}$ = (Equation 13-6 or 13-7)
$P_{FM}$ = using Equation (Exhibit 13-6)
$V_{12}$ = pc/h
$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)
Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No
Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No
If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$
$D_R$ = (pc/mi/ln)
LOS = (Exhibit 13-2)

### Speed Determination

$M_S$ = (Exibit 13-11)
$S_R$= mph (Exhibit 13-11)
$S_0$= mph (Exhibit 13-11)
S = mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$
$L_{EQ}$ = (Equation 13-12 or 13-13)
$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)
$V_{12}$ = 2126 pc/h
$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)
Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No
Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No
If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 2126 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 1898 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 228 | Exhibit 13-10 | 2000 | No |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 2126 | Exhibit 13-8 | 4400:All | No |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$
$D_R$ = 21.6 (pc/mi/ln)
LOS = C (Exhibit 13-2)

### Speed Determination

$D_s$ = 0.449 (Exhibit 13-12)
$S_R$= 49.2 mph (Exhibit 13-12)
$S_0$= N/A mph (Exhibit 13-12)
S = 49.2 mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 201 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Freeway Number of Lanes, N | 2 | Downstream Adj Ramp | |
|---|---|---|---|---|---|
| ☐ Yes | ☐ On | Ramp Number of Lanes, N | 1 | ☑ Yes | ☑ On |
| ☑ No | ☐ Off | Acceleration Lane Length, $L_A$ | | ☐ No | ☐ Off |
| $L_{up}$ = | ft | Deceleration Lane Length $L_D$ | 100 | $L_{down}$ = | 200 ft |
| $V_u$ = | veh/h | Freeway Volume, $V_F$ | 2189 | $V_D$ = | 206 veh/h |
| | | Ramp Volume, $V_R$ | 202 | | |
| | | Freeway Free-Flow Speed, $S_{FF}$ | 55.0 | | |
| | | Ramp Free-Flow Speed, $S_{FR}$ | 35.0 | | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 2189 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2615 |
| Ramp | 202 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 241 |
| UpStream | | | | | | | | |
| DownStream | 206 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 246 |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = using Equation (Exhibit 13-6)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$M_S$ = (Exibit 13-11)

$S_R$= mph (Exhibit 13-11)

$S_0$= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)

$V_{12}$ = 2615 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 2615 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 2374 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 241 | Exhibit 13-10 | 2000 | No |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 2615 | Exhibit 13-8 | 4400:All | No |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = 25.8 (pc/mi/ln)

LOS = C (Exhibit 13-2)

### Speed Determination

$D_s$ = 0.450 (Exhibit 13-12)

$S_R$= 49.2 mph (Exhibit 13-12)

$S_0$= N/A mph (Exhibit 13-12)

S = 49.2 mph (Exhibit 13-13)



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# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 202 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Freeway Number of Lanes, N | 2 | Downstream Adj Ramp | |
|---|---|---|---|---|---|
| ☑ Yes | ☐ On | Ramp Number of Lanes, N | 1 | ☐ Yes | ☐ On |
| ☐ No | ☑ Off | Acceleration Lane Length, $L_A$ | 500 | ☑ No | ☐ Off |
| $L_{up}$ = | 700 ft | Deceleration Lane Length $L_D$ | | $L_{down}$ = | ft |
| $V_u$ = | 203 veh/h | Freeway Volume, $V_F$ | 1987 | $V_D$ = | veh/h |
| | | Ramp Volume, $V_R$ | 198 | | |
| | | Freeway Free-Flow Speed, $S_{FF}$ | 55.0 | | |
| | | Ramp Free-Flow Speed, $S_{FR}$ | 35.0 | | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1987 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2373 |
| Ramp | 198 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 236 |
| UpStream | 203 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 242 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = 1.000 using Equation (Exhibit 13-6)

$V_{12}$ = 2373 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 2609 | Exhibit 13-8 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 2609 | Exhibit 13-8 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$

$D_R$ = 22.6 (pc/mi/ln)

LOS = C (Exhibit 13-2)

### Speed Determination

$M_S$ = 0.339 (Exibit 13-11)

$S_R$ = 50.6 mph (Exhibit 13-11)

$S_0$ = N/A mph (Exhibit 13-11)

S = 50.6 mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = using Equation (Exhibit 13-7)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 13-8 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 13-8 | | |
| $V_R$ | | Exhibit 13-10 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$D_s$ = (Exhibit 13-12)

$S_R$ = mph (Exhibit 13-12)

$S_0$ = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 202 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Freeway Number of Lanes, N | 2 | Downstream Adj Ramp | |
|---|---|---|---|---|---|
| ☑ Yes | ☐ On | Ramp Number of Lanes, N | 1 | ☐ Yes | ☐ On |
| ☐ No | ☑ Off | Acceleration Lane Length, $L_A$ | 500 | ☑ No | ☐ Off |
| $L_{up}$ = | 200 ft | Deceleration Lane Length $L_D$ | | $L_{down}$ = | ft |
| $V_u$ = | 249 veh/h | Freeway Volume, $V_F$ | 1589 | $V_D$ = | veh/h |
| | | Ramp Volume, $V_R$ | 187 | | |
| | | Freeway Free-Flow Speed, $S_{FF}$ | 55.0 | | |
| | | Ramp Free-Flow Speed, $S_{FR}$ | 35.0 | | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1589 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 1898 |
| Ramp | 187 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 223 |
| UpStream | 249 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 297 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = 1.000 using Equation (Exhibit 13-6)

$V_{12}$ = 1898 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 2121 | Exhibit 13-8 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 2121 | Exhibit 13-8 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$

$D_R$ = 18.8 (pc/mi/ln)

LOS = B (Exhibit 13-2)

### Speed Determination

$M_S$ = 0.319 (Exibit 13-11)

$S_R$ = 50.9 mph (Exhibit 13-11)

$S_0$ = N/A mph (Exhibit 13-11)

S = 50.9 mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = using Equation (Exhibit 13-7)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 13-8 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 13-8 | | |
| $V_R$ | | Exhibit 13-10 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$D_s$ = (Exhibit 13-12)

$S_R$ = mph (Exhibit 13-12)

$S_0$ = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 203 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Freeway Number of Lanes, N | 2 | Downstream Adj Ramp | |
|---|---|---|---|---|---|
| ☑ Yes | ☐ On | Ramp Number of Lanes, N | 1 | ☐ Yes | ☐ On |
| ☐ No | ☑ Off | Acceleration Lane Length, $L_A$ | 500 | ☑ No | ☐ Off |
| $L_{up}$ = | 200 ft | Deceleration Lane Length $L_D$ | | $L_{down}$ = | ft |
| $V_u$ = | 191 veh/h | Freeway Volume, $V_F$ | 1589 | $V_D$ = | veh/h |
| | | Ramp Volume, $V_R$ | 254 | | |
| | | Freeway Free-Flow Speed, $S_{FF}$ | 55.0 | | |
| | | Ramp Free-Flow Speed, $S_{FR}$ | 35.0 | | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1589 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 1898 |
| Ramp | 254 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 303 |
| UpStream | 191 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 228 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = 1.000 using Equation (Exhibit 13-6)

$V_{12}$ = 1898 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 2201 | Exhibit 13-8 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 2201 | Exhibit 13-8 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$

$D_R$ = 19.4 (pc/mi/ln)

LOS = B (Exhibit 13-2)

### Speed Determination

$M_S$ = 0.321 (Exibit 13-11)

$S_R$ = 50.8 mph (Exhibit 13-11)

$S_0$ = N/A mph (Exhibit 13-11)

S = 50.8 mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = using Equation (Exhibit 13-7)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 13-8 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 13-8 | | |
| $V_R$ | | Exhibit 13-10 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$D_s$ = (Exhibit 13-12)

$S_R$ = mph (Exhibit 13-12)

$S_0$ = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 203 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Downstream Adj Ramp |
|---|---|---|
| ☑ Yes ☐ On | Freeway Number of Lanes, N: 2 | ☐ Yes ☐ On |
| ☐ No ☑ Off | Ramp Number of Lanes, N: 1 | ☑ No ☐ Off |
| $L_{up}$ = 200 ft | Acceleration Lane Length, $L_A$: 500 | $L_{down}$ = ft |
| $V_u$ = 202 veh/h | Deceleration Lane Length $L_D$: | $V_D$ = veh/h |
| | Freeway Volume, $V_F$: 1987 | |
| | Ramp Volume, $V_R$: 206 | |
| | Freeway Free-Flow Speed, $S_{FF}$: 55.0 | |
| | Ramp Free-Flow Speed, $S_{FR}$: 35.0 | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1987 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2373 |
| Ramp | 206 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 246 |
| UpStream | 202 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 241 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = 1.000 using Equation (Exhibit 13-6)

$V_{12}$ = 2373 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 2619 | Exhibit 13-8 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 2619 | Exhibit 13-8 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$

$D_R$ = 22.7 (pc/mi/ln)

LOS = C (Exhibit 13-2)

### Speed Determination

$M_S$ = 0.340 (Exibit 13-11)

$S_R$ = 50.6 mph (Exhibit 13-11)

$S_0$ = N/A mph (Exhibit 13-11)

S = 50.6 mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = using Equation (Exhibit 13-7)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 13-8 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 13-8 | | |
| $V_R$ | | Exhibit 13-10 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$D_s$ = (Exhibit 13-12)

$S_R$ = mph (Exhibit 13-12)

$S_0$ = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 204 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Downstream Adj Ramp |
|---|---|---|
| ☐ Yes ☐ On | Freeway Number of Lanes, N: 2 | ☑ Yes ☑ On |
| ☑ No ☐ Off | Ramp Number of Lanes, N: 1 | ☐ No ☐ Off |
| $L_{up}$ = ft | Acceleration Lane Length, $L_A$: | $L_{down}$ = 500 ft |
| $V_u$ = veh/h | Deceleration Lane Length $L_D$: 100 | $V_D$ = 198 veh/h |
| | Freeway Volume, $V_F$: 2190 | |
| | Ramp Volume, $V_R$: 203 | |
| | Freeway Free-Flow Speed, $S_{FF}$: 55.0 | |
| | Ramp Free-Flow Speed, $S_{FR}$: 35.0 | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 2190 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2616 |
| Ramp | 203 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 242 |
| UpStream | | | | | | | | |
| DownStream | 198 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 236 |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = using Equation (Exhibit 13-6)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$M_S$ = (Exibit 13-11)

$S_R$= mph (Exhibit 13-11)

$S_0$= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)

$V_{12}$ = 2616 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 2616 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 2374 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 242 | Exhibit 13-10 | 2000 | No |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 2616 | Exhibit 13-8 | 4400:All | No |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = 25.8 (pc/mi/ln)

LOS = C (Exhibit 13-2)

### Speed Determination

$D_s$ = 0.450 (Exhibit 13-12)

$S_R$= 49.2 mph (Exhibit 13-12)

$S_0$= N/A mph (Exhibit 13-12)

S = 49.2 mph (Exhibit 13-13)



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# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 204 - US 321 at 13th Street |
| Date Performed | 2/10/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description US 321 at 13th Street

## Inputs

| Upstream Adj Ramp | | Freeway Number of Lanes, N | 2 | Downstream Adj Ramp | |
|---|---|---|---|---|---|
| ☐ Yes | ☐ On | Ramp Number of Lanes, N | 1 | ☑ Yes | ☑ On |
| ☑ No | ☐ Off | Acceleration Lane Length, $L_A$ | | ☐ No | ☐ Off |
| $L_{up}$ = | ft | Deceleration Lane Length $L_D$ | 100 | $L_{down}$ = | 200 ft |
| $V_u$ = | veh/h | Freeway Volume, $V_F$ | 1838 | $V_D$ = | 187 veh/h |
| | | Ramp Volume, $V_R$ | 249 | | |
| | | Freeway Free-Flow Speed, $S_{FF}$ | 55.0 | | |
| | | Ramp Free-Flow Speed, $S_{FR}$ | 35.0 | | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1838 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2195 |
| Ramp | 249 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 297 |
| UpStream | | | | | | | | |
| DownStream | 187 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 223 |

### Merge Areas

#### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = using Equation (Exhibit 13-6)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

#### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

#### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

#### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

#### Speed Determination

$M_S$ = (Exibit 13-11)

$S_R$= mph (Exhibit 13-11)

$S_0$= mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

### Diverge Areas

#### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)

$V_{12}$ = 2195 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

#### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 2195 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 1898 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 297 | Exhibit 13-10 | 2000 | No |

#### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 2195 | Exhibit 13-8 | 4400:All | No |

#### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = 22.2 (pc/mi/ln)

LOS = C (Exhibit 13-2)

#### Speed Determination

$D_s$ = 0.455 (Exhibit 13-12)

$S_R$= 49.1 mph (Exhibit 13-12)

$S_0$= N/A mph (Exhibit 13-12)

S = 49.1 mph (Exhibit 13-13)

# APPENDIX H

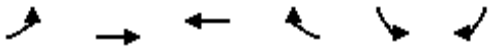
## 2040 Build Alternative Clement Boulevard – Partial Cloverleaf Interchange Synchro, SimTraffic & HCS Reports

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 142 | 47 | 230 | 183 | 96 | 978 |
| Future Volume (vph) | 142 | 47 | 230 | 183 | 96 | 978 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 250 | 400 | | 0 | 250 |
| Storage Lanes | | 1 | 1 | | 1 | 1 |
| Taper Length (ft) | | | 100 | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.850 | | | | 0.850 |
| Flt Protected | | | 0.950 | | 0.950 | |
| Satd. Flow (prot) | 1863 | 1583 | 1770 | 1863 | 1719 | 1538 |
| Flt Permitted | | | 0.950 | | 0.950 | |
| Satd. Flow (perm) | 1863 | 1583 | 1770 | 1863 | 1719 | 1538 |
| Right Turn on Red | | No | | | | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 35 | | | 35 | 35 | |
| Link Distance (ft) | 912 | | | 836 | 1022 | |
| Travel Time (s) | 17.8 | | | 16.3 | 19.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 5% | 5% |
| Adj. Flow (vph) | 158 | 52 | 256 | 203 | 107 | 1087 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 158 | 52 | 256 | 203 | 107 | 1087 |
| Turn Type | NA | pm+ov | Prot | NA | Prot | Free |
| Protected Phases | 4 | 2 | 3 | 8 | 2 | |
| Permitted Phases | | 4 | | | | Free |
| Detector Phase | 4 | 2 | 3 | 8 | 2 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | 7.0 | 7.0 | 10.0 | 7.0 | |
| Minimum Split (s) | 17.0 | 14.0 | 14.0 | 17.0 | 14.0 | |
| Total Split (s) | 29.0 | 24.0 | 37.0 | 66.0 | 24.0 | |
| Total Split (%) | 32.2% | 26.7% | 41.1% | 73.3% | 26.7% | |
| Maximum Green (s) | 22.0 | 17.0 | 30.0 | 59.0 | 17.0 | |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -2.0 | -2.0 | -2.0 | -2.0 | -2.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | Lead | | Lag | | | |
| Lead-Lag Optimize? | Yes | | Yes | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | C-Min | None | None | C-Min | None | |
| Act Effct Green (s) | 44.4 | 59.6 | 20.4 | 70.8 | 13.0 | 90.0 |
| Actuated g/C Ratio | 0.49 | 0.66 | 0.23 | 0.79 | 0.14 | 1.00 |
| v/c Ratio | 0.17 | 0.05 | 0.64 | 0.14 | 0.43 | 0.71 |
| Control Delay | 16.9 | 6.8 | 17.7 | 1.5 | 39.9 | 2.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 16.9 | 6.8 | 17.7 | 1.5 | 39.9 | 2.8 |
| LOS | B | A | B | A | D | A |
| Approach Delay | 14.4 | | | 10.5 | 6.1 | |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Approach LOS | B | | | B | A | |
| Queue Length 50th (ft) | 51 | 9 | 22 | 9 | 56 | 0 |
| Queue Length 95th (ft) | 111 | 26 | 76 | 20 | 101 | 0 |
| Internal Link Dist (ft) | 832 | | | 756 | 942 | |
| Turn Bay Length (ft) | | 250 | 400 | | | 250 |
| Base Capacity (vph) | 920 | 1035 | 629 | 1465 | 362 | 1538 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.17 | 0.05 | 0.41 | 0.14 | 0.30 | 0.71 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 68 (76%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow | | | |
| Natural Cycle: 45 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.71 | | | |
| Intersection Signal Delay: 8.1 | | Intersection LOS: A | |
| Intersection Capacity Utilization 39.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 1: US 321 SB Ramps & Clement Blvd



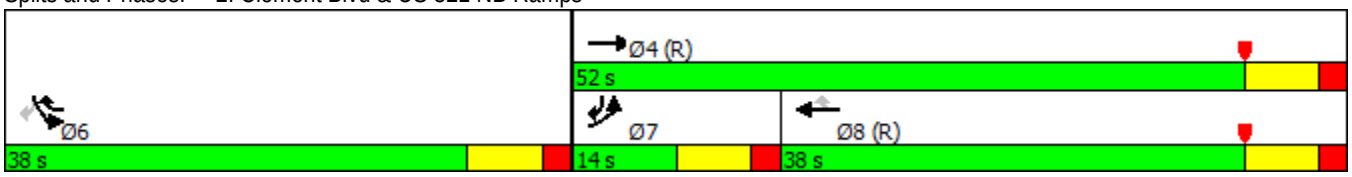
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 50 | 1070 | 356 | 700 | 204 | 57 |
| Future Volume (vph) | 50 | 1070 | 356 | 700 | 204 | 57 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 250 | | | 0 | 250 | 0 |
| Storage Lanes | 1 | | | 1 | 1 | 1 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | 0.850 | | 0.850 |
| Flt Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1770 | 3539 | 1863 | 1583 | 1719 | 1538 |
| Flt Permitted | 0.950 | | | | 0.950 | |
| Satd. Flow (perm) | 1770 | 3539 | 1863 | 1583 | 1719 | 1538 |
| Right Turn on Red | | | | No | | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | 35 | 35 | | 35 | |
| Link Distance (ft) | | 836 | 935 | | 1109 | |
| Travel Time (s) | | 16.3 | 18.2 | | 21.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 5% | 5% |
| Adj. Flow (vph) | 56 | 1189 | 396 | 778 | 227 | 63 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 56 | 1189 | 396 | 778 | 227 | 63 |
| Turn Type | Prot | NA | NA | pm+ov | Prot | pm+ov |
| Protected Phases | 7 | 4 | 8 | 6 | 6 | 7 |
| Permitted Phases | | | | 8 | | 6 |
| Detector Phase | 7 | 4 | 8 | 6 | 6 | 7 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 10.0 | 10.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 14.0 | 17.0 | 17.0 | 14.0 | 14.0 | 14.0 |
| Total Split (s) | 14.0 | 52.0 | 38.0 | 38.0 | 38.0 | 14.0 |
| Total Split (%) | 15.6% | 57.8% | 42.2% | 42.2% | 42.2% | 15.6% |
| Maximum Green (s) | 7.0 | 45.0 | 31.0 | 31.0 | 31.0 | 7.0 |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -2.0 | -2.0 | -2.0 | -2.0 | -2.0 | -2.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lead | | Lag | | | Lead |
| Lead-Lag Optimize? | Yes | | Yes | | | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | C-Min | C-Min | None | None | None |
| Act Effct Green (s) | 9.2 | 42.1 | 30.7 | 74.6 | 37.9 | 52.1 |
| Actuated g/C Ratio | 0.10 | 0.47 | 0.34 | 0.83 | 0.42 | 0.58 |
| v/c Ratio | 0.31 | 0.72 | 0.62 | 0.59 | 0.31 | 0.07 |
| Control Delay | 43.2 | 19.9 | 30.1 | 5.2 | 19.0 | 8.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 43.2 | 19.9 | 30.1 | 5.2 | 19.0 | 8.8 |
| LOS | D | B | C | A | B | A |
| Approach Delay | | 20.9 | 13.6 | | 16.8 | |

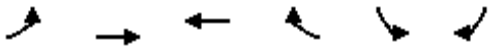
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Approach LOS | | C | B | | B | |
| Queue Length 50th (ft) | 28 | 305 | 215 | 87 | 75 | 12 |
| Queue Length 95th (ft) | m47 | 251 | m273 | 296 | 153 | 37 |
| Internal Link Dist (ft) | | 756 | 855 | | 1029 | |
| Turn Bay Length (ft) | 250 | | | | 250 | |
| Base Capacity (vph) | 182 | 1848 | 739 | 1311 | 723 | 890 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.31 | 0.64 | 0.54 | 0.59 | 0.31 | 0.07 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 78 (87%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.72 | | | |
| Intersection Signal Delay: 17.3 | | Intersection LOS: B | |
| Intersection Capacity Utilization 57.5% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

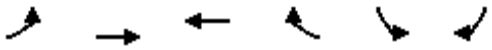
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Clement Blvd & US 321 NB Ramps





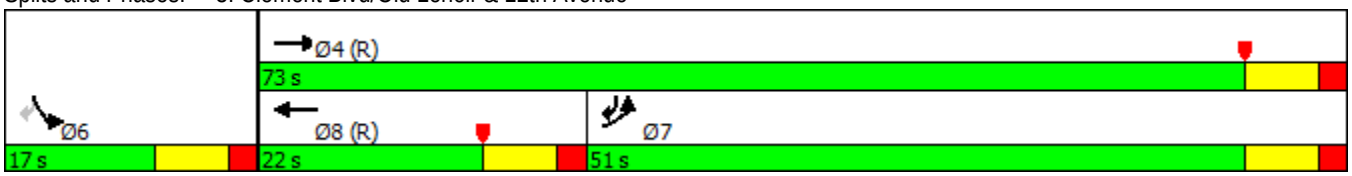
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 572 | 691 | 300 | 42 | 129 | 765 |
| Future Volume (vph) | 572 | 691 | 300 | 42 | 129 | 765 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 250 | | | 250 | 175 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 1 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 0.97 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 |
| Frt | | | 0.981 | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 3433 | 1863 | 3472 | 0 | 1770 | 1583 |
| Flt Permitted | 0.950 | | | | 0.950 | |
| Satd. Flow (perm) | 3433 | 1863 | 3472 | 0 | 1770 | 1583 |
| Right Turn on Red | | | | No | | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | 35 | 35 | | 35 | |
| Link Distance (ft) | | 935 | 1298 | | 476 | |
| Travel Time (s) | | 18.2 | 25.3 | | 9.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 636 | 768 | 333 | 47 | 143 | 850 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 636 | 768 | 380 | 0 | 143 | 850 |
| Turn Type | Prot | NA | NA | | Prot | pm+ov |
| Protected Phases | 7 | 4 | 8 | | 6 | 7 |
| Permitted Phases | | | | | | 6 |
| Detector Phase | 7 | 4 | 8 | | 6 | 7 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 10.0 | 10.0 | | 7.0 | 7.0 |
| Minimum Split (s) | 14.0 | 17.0 | 17.0 | | 14.0 | 14.0 |
| Total Split (s) | 51.0 | 73.0 | 22.0 | | 17.0 | 51.0 |
| Total Split (%) | 56.7% | 81.1% | 24.4% | | 18.9% | 56.7% |
| Maximum Green (s) | 44.0 | 66.0 | 15.0 | | 10.0 | 44.0 |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -2.0 | -2.0 | -2.0 | | -2.0 | -2.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | Lag | | Lead | | | Lag |
| Lead-Lag Optimize? | Yes | | Yes | | | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Recall Mode | None | C-Min | C-Min | | None | None |
| Act Effct Green (s) | 44.3 | 67.8 | 18.5 | | 12.2 | 61.5 |
| Actuated g/C Ratio | 0.49 | 0.75 | 0.21 | | 0.14 | 0.68 |
| v/c Ratio | 0.38 | 0.55 | 0.53 | | 0.60 | 0.79 |
| Control Delay | 6.2 | 2.7 | 35.6 | | 33.5 | 6.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.4 |
| Total Delay | 6.2 | 2.7 | 35.6 | | 33.5 | 6.8 |
| LOS | A | A | D | | C | A |
| Approach Delay | | 4.3 | 35.6 | | 10.7 | |
| Approach LOS | | A | D | | B | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Queue Length 50th (ft) | 31 | 17 | 104 | | 78 | 62 |
| Queue Length 95th (ft) | 55 | 82 | 151 | | m96 | 58 |
| Internal Link Dist (ft) | | 855 | 1218 | | 396 | |
| Turn Bay Length (ft) | 250 | | | | 175 | |
| Base Capacity (vph) | 1754 | 1416 | 714 | | 248 | 1058 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 0 | 30 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.36 | 0.54 | 0.53 | | 0.58 | 0.83 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 48 (53%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.79 | | | |
| Intersection Signal Delay: 10.9 | | Intersection LOS: B | |
| Intersection Capacity Utilization 65.3% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 3: Clement Blvd/Old Lenoir & 12th Avenue

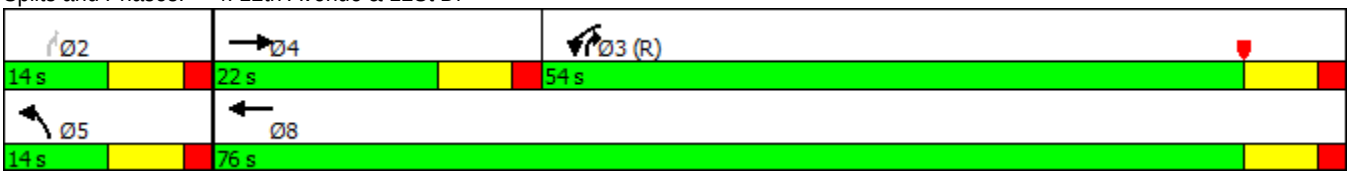


| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 57 | 169 | 727 | 29 | 65 | 547 | |
| Future Volume (vph) | 57 | 169 | 727 | 29 | 65 | 547 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Storage Length (ft) | | 0 | 600 | | 100 | 0 | |
| Storage Lanes | | 0 | 1 | | 1 | 2 | |
| Taper Length (ft) | | | 100 | | 100 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.88 | |
| Frt | 0.899 | | | | | 0.850 | |
| Flt Protected | | | 0.950 | | 0.950 | | |
| Satd. Flow (prot) | 1675 | 0 | 1770 | 1863 | 1770 | 2787 | |
| Flt Permitted | | | 0.950 | | 0.950 | | |
| Satd. Flow (perm) | 1675 | 0 | 1770 | 1863 | 1770 | 2787 | |
| Right Turn on Red | | No | | | | No | |
| Satd. Flow (RTOR) | | | | | | | |
| Link Speed (mph) | 35 | | | 35 | 35 | | |
| Link Distance (ft) | 1434 | | | 992 | 476 | | |
| Travel Time (s) | 27.9 | | | 19.3 | 9.3 | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | |
| Adj. Flow (vph) | 63 | 188 | 808 | 32 | 72 | 608 | |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 251 | 0 | 808 | 32 | 72 | 608 | |
| Turn Type | NA | | Prot | NA | Prot | pm+ov | |
| Protected Phases | 4 | | 3 | 8 | 5 | 3 | 2 |
| Permitted Phases | | | | | | 2 | |
| Detector Phase | 4 | | 3 | 8 | 5 | 3 | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 10.0 | | 7.0 | 10.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 17.0 | | 14.0 | 17.0 | 14.0 | 14.0 | 14.0 |
| Total Split (s) | 22.0 | | 54.0 | 76.0 | 14.0 | 54.0 | 14.0 |
| Total Split (%) | 24.4% | | 60.0% | 84.4% | 15.6% | 60.0% | 16% |
| Maximum Green (s) | 15.0 | | 47.0 | 69.0 | 7.0 | 47.0 | 7.0 |
| Yellow Time (s) | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -2.0 | | -2.0 | -2.0 | -2.0 | -2.0 | |
| Total Lost Time (s) | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | Lead | | Lag | | | Lag | |
| Lead-Lag Optimize? | Yes | | Yes | | | Yes | |
| Vehicle Extension (s) | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | | C-Min | None | None | C-Min | None |
| Act Effct Green (s) | 16.9 | | 51.8 | 74.7 | 9.1 | 63.1 | |
| Actuated g/C Ratio | 0.19 | | 0.58 | 0.83 | 0.10 | 0.70 | |
| v/c Ratio | 0.80 | | 0.79 | 0.02 | 0.40 | 0.31 | |
| Control Delay | 55.2 | | 23.8 | 2.1 | 45.5 | 1.6 | |
| Queue Delay | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 55.2 | | 23.8 | 2.1 | 45.5 | 1.6 | |
| LOS | E | | C | A | D | A | |
| Approach Delay | 55.2 | | | 23.0 | 6.3 | | |
| Approach LOS | E | | | C | A | | |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Queue Length 50th (ft) | 137 | | 362 | 3 | 45 | 14 | |
| Queue Length 95th (ft) | #258 | | #612 | 8 | m89 | 17 | |
| Internal Link Dist (ft) | 1354 | | | 912 | 396 | | |
| Turn Bay Length (ft) | | | 600 | | 100 | | |
| Base Capacity (vph) | 322 | | 1027 | 1548 | 179 | 1937 | |
| Starvation Cap Reductn | 0 | | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | 0 | | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | 0 | | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | 0.78 | | 0.79 | 0.02 | 0.40 | 0.31 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 16 (18%), Referenced to phase 3:WBL, Start of Yellow | | | |
| Natural Cycle: 75 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.80 | | | |
| Intersection Signal Delay: 21.2 | | Intersection LOS: C | |
| Intersection Capacity Utilization 72.0% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 4: 12th Avenue & 12St Dr



## Summary of All Intervals

| Start Time | 6:50 |
|---|---|
| End Time | 8:00 |
| Total Time (min) | 70 |
| Time Recorded (min) | 60 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 2869 |
| Vehs Exited | 2851 |
| Starting Vehs | 95 |
| Ending Vehs | 113 |
| Travel Distance (mi) | 1967 |
| Travel Time (hr) | 116.8 |
| Total Delay (hr) | 52.2 |
| Total Stops | 3640 |
| Fuel Used (gal) | 90.0 |

## Interval #0 Information Seeding

| Start Time | 6:50 |
|---|---|
| End Time | 7:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 7:00 |
|---|---|
| End Time | 8:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 2869 |
|---|---|
| Vehs Exited | 2851 |
| Starting Vehs | 95 |
| Ending Vehs | 113 |
| Travel Distance (mi) | 1967 |
| Travel Time (hr) | 116.8 |
| Total Delay (hr) | 52.2 |
| Total Stops | 3640 |
| Fuel Used (gal) | 90.0 |

## Intersection: 1: US 321 SB Ramps & Clement Blvd

| Movement | EB | EB | WB | WB | NB |
|---|---|---|---|---|---|
| Directions Served | T | R | L | T | L |
| Maximum Queue (ft) | 97 | 53 | 246 | 116 | 150 |
| Average Queue (ft) | 43 | 18 | 125 | 28 | 50 |
| 95th Queue (ft) | 81 | 48 | 223 | 87 | 107 |
| Link Distance (ft) | 876 | | | 781 | 972 |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (ft) | | 250 | 400 | | |
| Storage Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |

## Intersection: 2: Clement Blvd & US 321 NB Ramps

| Movement | EB | EB | EB | WB | WB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | L | T | T | T | R | L | R |
| Maximum Queue (ft) | 93 | 238 | 311 | 248 | 221 | 197 | 133 |
| Average Queue (ft) | 41 | 139 | 160 | 138 | 109 | 96 | 28 |
| 95th Queue (ft) | 78 | 209 | 251 | 233 | 183 | 180 | 78 |
| Link Distance (ft) | | 781 | 781 | 874 | 874 | | 1066 |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | | | 250 | |
| Storage Blk Time (%) | | 0 | | | | | |
| Queuing Penalty (veh) | | 0 | | | | | |

## Intersection: 3: Clement Blvd/Old Lenoir & 12th Avenue

| Movement | EB | EB | EB | WB | WB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | L | L | T | T | TR | L | R |
| Maximum Queue (ft) | 349 | 371 | 182 | 187 | 204 | 274 | 400 |
| Average Queue (ft) | 74 | 94 | 57 | 80 | 123 | 113 | 235 |
| 95th Queue (ft) | 188 | 199 | 131 | 157 | 192 | 230 | 392 |
| Link Distance (ft) | | 874 | 874 | 1253 | 1253 | | 377 |
| Upstream Blk Time (%) | | | | | | | 7 |
| Queuing Penalty (veh) | | | | | | | 60 |
| Storage Bay Dist (ft) | 250 | | | | | 175 | |
| Storage Blk Time (%) | 1 | 1 | | | | 1 | 17 |
| Queuing Penalty (veh) | 3 | 4 | | | | 6 | 22 |

## Intersection: 4: 12th Avenue & 12St Dr

| Movement | EB | WB | WB | B6 | NB | NB | NB |
|---|---|---|---|---|---|---|---|
| Directions Served | TR | L | T | T | L | R | R |
| Maximum Queue (ft) | 421 | 700 | 994 | 136 | 112 | 95 | 155 |
| Average Queue (ft) | 223 | 362 | 182 | 12 | 49 | 20 | 38 |
| 95th Queue (ft) | 409 | 676 | 789 | 70 | 96 | 65 | 86 |
| Link Distance (ft) | 1396 | | 922 | 121 | | 377 | 377 |
| Upstream Blk Time (%) | | | 6 | 2 | | | |
| Queuing Penalty (veh) | | | 0 | 0 | | | |
| Storage Bay Dist (ft) | | 600 | | | 100 | | |
| Storage Blk Time (%) | | 12 | 1 | | 1 | 0 | |
| Queuing Penalty (veh) | | 4 | 5 | | 3 | 0 | |

## Network Summary

Network wide Queuing Penalty: 107

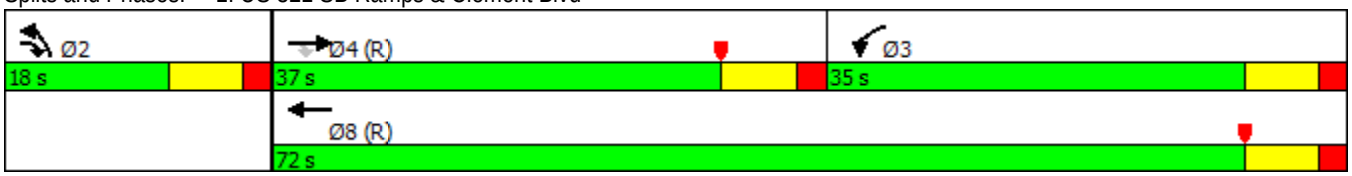
| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 222 | 57 | 204 | 139 | 50 | 700 |
| Future Volume (vph) | 222 | 57 | 204 | 139 | 50 | 700 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 250 | 400 | | 0 | 250 |
| Storage Lanes | | 1 | 1 | | 1 | 1 |
| Taper Length (ft) | | | 50 | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.850 | | | | 0.850 |
| Flt Protected | | | 0.950 | | 0.950 | |
| Satd. Flow (prot) | 1863 | 1583 | 1770 | 1863 | 1719 | 1538 |
| Flt Permitted | | | 0.950 | | 0.950 | |
| Satd. Flow (perm) | 1863 | 1583 | 1770 | 1863 | 1719 | 1538 |
| Right Turn on Red | | No | | | | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 35 | | | 35 | 35 | |
| Link Distance (ft) | 912 | | | 836 | 1022 | |
| Travel Time (s) | 17.8 | | | 16.3 | 19.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 5% | 5% |
| Adj. Flow (vph) | 247 | 63 | 227 | 154 | 56 | 778 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 247 | 63 | 227 | 154 | 56 | 778 |
| Turn Type | NA | pm+ov | Prot | NA | Prot | Free |
| Protected Phases | 4 | 2 | 3 | 8 | 2 | |
| Permitted Phases | | 4 | | | | Free |
| Detector Phase | 4 | 2 | 3 | 8 | 2 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 10.0 | 7.0 | 7.0 | 10.0 | 7.0 | |
| Minimum Split (s) | 17.0 | 14.0 | 14.0 | 17.0 | 14.0 | |
| Total Split (s) | 37.0 | 18.0 | 35.0 | 72.0 | 18.0 | |
| Total Split (%) | 41.1% | 20.0% | 38.9% | 80.0% | 20.0% | |
| Maximum Green (s) | 30.0 | 11.0 | 28.0 | 65.0 | 11.0 | |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -2.0 | -2.0 | -2.0 | -2.0 | -2.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | Lead | | Lag | | | |
| Lead-Lag Optimize? | Yes | | Yes | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | C-Min | None | None | C-Min | None | |
| Act Effct Green (s) | 48.3 | 61.2 | 18.8 | 73.1 | 10.7 | 90.0 |
| Actuated g/C Ratio | 0.54 | 0.68 | 0.21 | 0.81 | 0.12 | 1.00 |
| v/c Ratio | 0.25 | 0.06 | 0.61 | 0.10 | 0.28 | 0.51 |
| Control Delay | 14.6 | 6.1 | 15.4 | 0.9 | 39.1 | 1.2 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 14.6 | 6.1 | 15.4 | 0.9 | 39.1 | 1.2 |
| LOS | B | A | B | A | D | A |
| Approach Delay | 12.9 | | | 9.5 | 3.7 | |

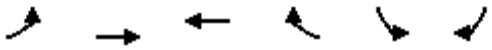
| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR |
|---|---|---|---|---|---|---|
| Approach LOS | B | | | A | A | |
| Queue Length 50th (ft) | 76 | 10 | 20 | 6 | 30 | 0 |
| Queue Length 95th (ft) | 152 | 29 | m126 | m4 | 64 | 0 |
| Internal Link Dist (ft) | 832 | | | 756 | 942 | |
| Turn Bay Length (ft) | | 250 | 400 | | | 250 |
| Base Capacity (vph) | 999 | 1051 | 590 | 1515 | 249 | 1538 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.25 | 0.06 | 0.38 | 0.10 | 0.22 | 0.51 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 77 (86%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow | | | |
| Natural Cycle: 45 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.61 | | | |
| Intersection Signal Delay: 7.0 | | Intersection LOS: A | |
| Intersection Capacity Utilization 41.3% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 1: US 321 SB Ramps & Clement Blvd





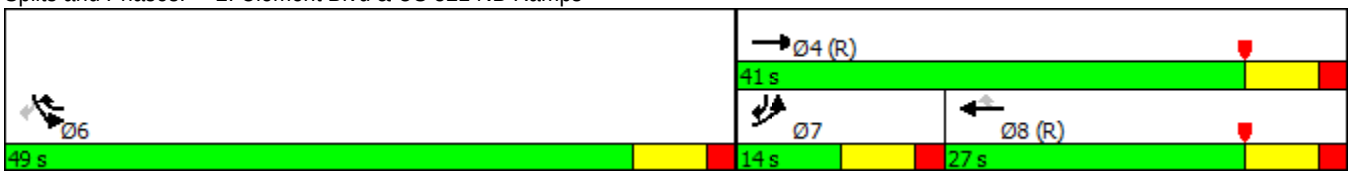
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 96 | 826 | 296 | 978 | 230 | 47 |
| Future Volume (vph) | 96 | 826 | 296 | 978 | 230 | 47 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 250 | | | 0 | 250 | 0 |
| Storage Lanes | 1 | | | 1 | 1 | 1 |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | 0.850 | | 0.850 |
| Flt Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 1770 | 3539 | 1863 | 1583 | 1719 | 1538 |
| Flt Permitted | 0.950 | | | | 0.950 | |
| Satd. Flow (perm) | 1770 | 3539 | 1863 | 1583 | 1719 | 1538 |
| Right Turn on Red | | | | No | | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | 35 | 35 | | 35 | |
| Link Distance (ft) | | 836 | 935 | | 1109 | |
| Travel Time (s) | | 16.3 | 18.2 | | 21.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 5% | 5% |
| Adj. Flow (vph) | 107 | 918 | 329 | 1087 | 256 | 52 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 107 | 918 | 329 | 1087 | 256 | 52 |
| Turn Type | Prot | NA | NA | pm+ov | Prot | pm+ov |
| Protected Phases | 7 | 4 | 8 | 6 | 6 | 7 |
| Permitted Phases | | | | 8 | | 6 |
| Detector Phase | 7 | 4 | 8 | 6 | 6 | 7 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 10.0 | 10.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 14.0 | 17.0 | 17.0 | 14.0 | 14.0 | 14.0 |
| Total Split (s) | 14.0 | 41.0 | 27.0 | 49.0 | 49.0 | 14.0 |
| Total Split (%) | 15.6% | 45.6% | 30.0% | 54.4% | 54.4% | 15.6% |
| Maximum Green (s) | 7.0 | 34.0 | 20.0 | 42.0 | 42.0 | 7.0 |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -2.0 | -2.0 | -2.0 | -2.0 | -2.0 | -2.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Lead/Lag | Lead | | Lag | | | Lead |
| Lead-Lag Optimize? | Yes | | Yes | | | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | C-Min | C-Min | None | None | None |
| Act Effct Green (s) | 9.0 | 33.5 | 22.3 | 74.8 | 46.5 | 60.5 |
| Actuated g/C Ratio | 0.10 | 0.37 | 0.25 | 0.83 | 0.52 | 0.67 |
| v/c Ratio | 0.60 | 0.70 | 0.72 | 0.83 | 0.29 | 0.05 |
| Control Delay | 55.2 | 23.5 | 33.2 | 12.6 | 14.2 | 6.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 55.2 | 23.5 | 33.2 | 12.6 | 14.2 | 6.0 |
| LOS | E | C | C | B | B | A |
| Approach Delay | | 26.8 | 17.4 | | 12.8 | |

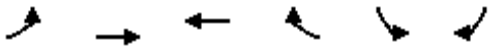
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Approach LOS | | C | B | | B | |
| Queue Length 50th (ft) | 51 | 217 | 122 | 395 | 84 | 10 |
| Queue Length 95th (ft) | #128 | 213 | m220 | #799 | 136 | 22 |
| Internal Link Dist (ft) | | 756 | 855 | | 1029 | |
| Turn Bay Length (ft) | 250 | | | | 250 | |
| Base Capacity (vph) | 177 | 1415 | 472 | 1315 | 888 | 1034 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | 0 | 0 |
| Reduced v/c Ratio | 0.60 | 0.65 | 0.70 | 0.83 | 0.29 | 0.05 |

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 68 (76%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 20.4 Intersection LOS: C
Intersection Capacity Utilization 74.7% ICU Level of Service D
Analysis Period (min) 15
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Clement Blvd & US 321 NB Ramps



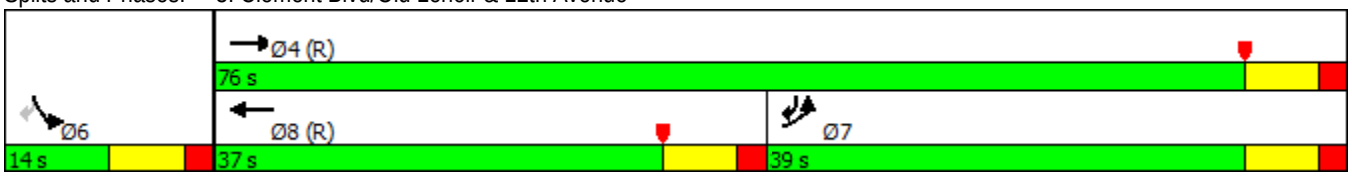


| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 765 | 300 | 691 | 129 | 42 | 572 |
| Future Volume (vph) | 765 | 300 | 691 | 129 | 42 | 572 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 250 | | | 250 | 175 | 0 |
| Storage Lanes | 1 | | | 0 | 1 | 1 |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 0.97 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 |
| Frt | | | 0.976 | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 3433 | 1863 | 3454 | 0 | 1770 | 1583 |
| Flt Permitted | 0.950 | | | | 0.950 | |
| Satd. Flow (perm) | 3433 | 1863 | 3454 | 0 | 1770 | 1583 |
| Right Turn on Red | | | | No | | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | 35 | 35 | | 35 | |
| Link Distance (ft) | | 935 | 1298 | | 476 | |
| Travel Time (s) | | 18.2 | 25.3 | | 9.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 850 | 333 | 768 | 143 | 47 | 636 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 850 | 333 | 911 | 0 | 47 | 636 |
| Turn Type | Prot | NA | NA | | Prot | pm+ov |
| Protected Phases | 7 | 4 | 8 | | 6 | 7 |
| Permitted Phases | | | | | | 6 |
| Detector Phase | 7 | 4 | 8 | | 6 | 7 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 10.0 | 10.0 | | 7.0 | 7.0 |
| Minimum Split (s) | 14.0 | 17.0 | 17.0 | | 14.0 | 14.0 |
| Total Split (s) | 39.0 | 76.0 | 37.0 | | 14.0 | 39.0 |
| Total Split (%) | 43.3% | 84.4% | 41.1% | | 15.6% | 43.3% |
| Maximum Green (s) | 32.0 | 69.0 | 30.0 | | 7.0 | 32.0 |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | 2.0 |
| Lost Time Adjust (s) | -2.0 | -2.0 | -2.0 | | -2.0 | -2.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | 5.0 |
| Lead/Lag | Lag | | Lead | | | Lag |
| Lead-Lag Optimize? | Yes | | Yes | | | Yes |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | 3.0 | 3.0 |
| Recall Mode | None | C-Min | C-Min | | None | None |
| Act Effct Green (s) | 36.2 | 78.6 | 35.4 | | 9.0 | 44.6 |
| Actuated g/C Ratio | 0.40 | 0.87 | 0.39 | | 0.10 | 0.50 |
| v/c Ratio | 0.62 | 0.20 | 0.67 | | 0.27 | 0.81 |
| Control Delay | 14.1 | 0.9 | 26.4 | | 27.7 | 14.8 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 1.2 |
| Total Delay | 14.1 | 0.9 | 26.4 | | 27.7 | 16.0 |
| LOS | B | A | C | | C | B |
| Approach Delay | | 10.4 | 26.4 | | 16.8 | |
| Approach LOS | | B | C | | B | |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Queue Length 50th (ft) | 216 | 8 | 235 | | 27 | 311 |
| Queue Length 95th (ft) | 297 | 24 | 308 | | m39 | 85 |
| Internal Link Dist (ft) | | 855 | 1218 | | 396 | |
| Turn Bay Length (ft) | 250 | | | | 175 | |
| Base Capacity (vph) | 1380 | 1627 | 1358 | | 177 | 784 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 0 | 42 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.62 | 0.20 | 0.67 | | 0.27 | 0.86 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 60 (67%), Referenced to phase 4:EBT and 8:WBT, Start of Yellow | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.81 | | | |
| Intersection Signal Delay: 17.2 | | Intersection LOS: B | |
| Intersection Capacity Utilization 67.0% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 3: Clement Blvd/Old Lenoir & 12th Avenue

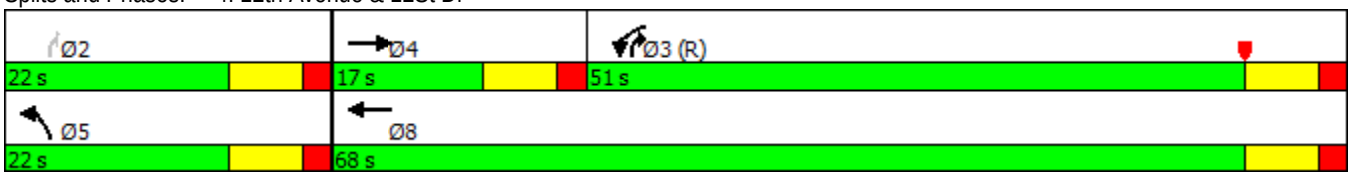


| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | |
| Traffic Volume (vph) | 29 | 65 | 547 | 57 | 169 | 727 | |
| Future Volume (vph) | 29 | 65 | 547 | 57 | 169 | 727 | |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | |
| Storage Length (ft) | | 0 | 600 | | 100 | 0 | |
| Storage Lanes | | 0 | 1 | | 1 | 2 | |
| Taper Length (ft) | | | 50 | | 50 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.88 | |
| Frt | 0.907 | | | | | 0.850 | |
| Flt Protected | | | 0.950 | | 0.950 | | |
| Satd. Flow (prot) | 1690 | 0 | 1770 | 1863 | 1770 | 2787 | |
| Flt Permitted | | | 0.950 | | 0.950 | | |
| Satd. Flow (perm) | 1690 | 0 | 1770 | 1863 | 1770 | 2787 | |
| Right Turn on Red | | No | | | | No | |
| Satd. Flow (RTOR) | | | | | | | |
| Link Speed (mph) | 35 | | | 35 | 35 | | |
| Link Distance (ft) | 1434 | | | 992 | 476 | | |
| Travel Time (s) | 27.9 | | | 19.3 | 9.3 | | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | |
| Adj. Flow (vph) | 32 | 72 | 608 | 63 | 188 | 808 | |
| Shared Lane Traffic (%) | | | | | | | |
| Lane Group Flow (vph) | 104 | 0 | 608 | 63 | 188 | 808 | |
| Turn Type | NA | | Prot | NA | Prot | pm+ov | |
| Protected Phases | 4 | | 3 | 8 | 5 | 3 | 2 |
| Permitted Phases | | | | | | 2 | |
| Detector Phase | 4 | | 3 | 8 | 5 | 3 | |
| Switch Phase | | | | | | | |
| Minimum Initial (s) | 10.0 | | 7.0 | 10.0 | 7.0 | 7.0 | 7.0 |
| Minimum Split (s) | 17.0 | | 14.0 | 17.0 | 14.0 | 14.0 | 14.0 |
| Total Split (s) | 17.0 | | 51.0 | 68.0 | 22.0 | 51.0 | 22.0 |
| Total Split (%) | 18.9% | | 56.7% | 75.6% | 24.4% | 56.7% | 24% |
| Maximum Green (s) | 10.0 | | 44.0 | 61.0 | 15.0 | 44.0 | 15.0 |
| Yellow Time (s) | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| All-Red Time (s) | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| Lost Time Adjust (s) | -2.0 | | -2.0 | -2.0 | -2.0 | -2.0 | |
| Total Lost Time (s) | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | Lead | | Lag | | | Lag | |
| Lead-Lag Optimize? | Yes | | Yes | | | Yes | |
| Vehicle Extension (s) | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Recall Mode | None | | C-Min | None | None | C-Min | None |
| Act Effct Green (s) | 12.2 | | 50.7 | 64.5 | 15.5 | 72.2 | |
| Actuated g/C Ratio | 0.14 | | 0.56 | 0.72 | 0.17 | 0.80 | |
| v/c Ratio | 0.46 | | 0.61 | 0.05 | 0.62 | 0.36 | |
| Control Delay | 43.1 | | 18.4 | 4.3 | 39.9 | 1.6 | |
| Queue Delay | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 43.1 | | 18.4 | 4.3 | 39.9 | 1.6 | |
| LOS | D | | B | A | D | A | |
| Approach Delay | 43.1 | | | 17.1 | 8.8 | | |
| Approach LOS | D | | | B | A | | |

| Lane Group | EBT | EBR | WBL | WBT | NBL | NBR | Ø2 |
|---|---|---|---|---|---|---|---|
| Queue Length 50th (ft) | 55 | | 248 | 9 | 118 | 23 | |
| Queue Length 95th (ft) | 107 | | 367 | 21 | m180 | 32 | |
| Internal Link Dist (ft) | 1354 | | | 912 | 396 | | |
| Turn Bay Length (ft) | | | 600 | | 100 | | |
| Base Capacity (vph) | 228 | | 1004 | 1339 | 339 | 2186 | |
| Starvation Cap Reductn | 0 | | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | 0 | | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | 0 | | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | 0.46 | | 0.61 | 0.05 | 0.55 | 0.37 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 20 (22%), Referenced to phase 3:WBL, Start of Yellow | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.62 | | | |
| Intersection Signal Delay: 14.0 | | Intersection LOS: B | |
| Intersection Capacity Utilization 54.7% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 4: 12th Avenue & 12St Dr



## Summary of All Intervals

| Start Time | 4:50 |
|---|---|
| End Time | 6:00 |
| Total Time (min) | 70 |
| Time Recorded (min) | 60 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 2856 |
| Vehs Exited | 2829 |
| Starting Vehs | 93 |
| Ending Vehs | 120 |
| Travel Distance (mi) | 1921 |
| Travel Time (hr) | 108.7 |
| Total Delay (hr) | 45.6 |
| Total Stops | 3766 |
| Fuel Used (gal) | 89.4 |

## Interval #0 Information Seeding

| Start Time | 4:50 |
|---|---|
| End Time | 5:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 5:00 |
|---|---|
| End Time | 6:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 2856 |
|---|---|
| Vehs Exited | 2829 |
| Starting Vehs | 93 |
| Ending Vehs | 120 |
| Travel Distance (mi) | 1921 |
| Travel Time (hr) | 108.7 |
| Total Delay (hr) | 45.6 |
| Total Stops | 3766 |
| Fuel Used (gal) | 89.4 |

## Intersection: 1: US 321 SB Ramps & Clement Blvd

| Movement | EB | EB | WB | WB | NB |
|---|---|---|---|---|---|
| Directions Served | T | R | L | T | L |
| Maximum Queue (ft) | 177 | 52 | 232 | 74 | 129 |
| Average Queue (ft) | 60 | 14 | 107 | 15 | 37 |
| 95th Queue (ft) | 136 | 41 | 193 | 52 | 95 |
| Link Distance (ft) | 876 | | | 781 | 972 |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (ft) | | 250 | 400 | | |
| Storage Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |

## Intersection: 2: Clement Blvd & US 321 NB Ramps

| Movement | EB | EB | EB | WB | WB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | L | T | T | T | R | L | R |
| Maximum Queue (ft) | 119 | 309 | 249 | 243 | 333 | 244 | 48 |
| Average Queue (ft) | 71 | 181 | 122 | 118 | 170 | 97 | 14 |
| 95th Queue (ft) | 117 | 277 | 212 | 211 | 294 | 174 | 39 |
| Link Distance (ft) | | 781 | 781 | 874 | 874 | | 1066 |
| Upstream Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |
| Storage Bay Dist (ft) | 250 | | | | | 250 | |
| Storage Blk Time (%) | | 2 | | | | 0 | |
| Queuing Penalty (veh) | | 2 | | | | 0 | |

## Intersection: 3: Clement Blvd/Old Lenoir & 12th Avenue

| Movement | EB | EB | EB | WB | WB | SB | SB |
|---|---|---|---|---|---|---|---|
| Directions Served | L | L | T | T | TR | L | R |
| Maximum Queue (ft) | 247 | 256 | 139 | 308 | 342 | 225 | 397 |
| Average Queue (ft) | 116 | 133 | 17 | 165 | 214 | 48 | 229 |
| 95th Queue (ft) | 207 | 217 | 67 | 264 | 306 | 133 | 393 |
| Link Distance (ft) | | 874 | 874 | 1253 | 1253 | | 377 |
| Upstream Blk Time (%) | | | | | | | 2 |
| Queuing Penalty (veh) | | | | | | | 13 |
| Storage Bay Dist (ft) | 250 | | | | | 175 | |
| Storage Blk Time (%) | 0 | 0 | | | | | 21 |
| Queuing Penalty (veh) | 0 | 1 | | | | | 9 |

## Intersection: 4: 12th Avenue & 12St Dr

| Movement | EB | WB | WB | NB | NB | NB |
|---|---|---|---|---|---|---|
| Directions Served | TR | L | T | L | R | R |
| Maximum Queue (ft) | 111 | 354 | 53 | 149 | 284 | 290 |
| Average Queue (ft) | 54 | 184 | 15 | 101 | 79 | 78 |
| 95th Queue (ft) | 99 | 325 | 44 | 160 | 221 | 200 |
| Link Distance (ft) | 1396 | | 922 | | 377 | 377 |
| Upstream Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |
| Storage Bay Dist (ft) | | 600 | | 100 | | |
| Storage Blk Time (%) | | | | 13 | 3 | |
| Queuing Penalty (veh) | | | | 48 | 5 | |

## Network Summary

Network wide Queuing Penalty: 78

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 201 - US 321 at Clement Blvd |
| Date Performed | 2/9/17 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description: US 321 at Clement Boulevard (Partial Cloverleaf)

## Inputs

| Upstream Adj Ramp | | Downstream Adj Ramp |
|---|---|---|
| ☐ Yes ☐ On | Freeway Number of Lanes, N: 2 | ☑ Yes ☑ On |
| ☑ No ☐ Off | Ramp Number of Lanes, N: 1 | ☐ No ☐ Off |
| $L_{up}$ = ft | Acceleration Lane Length, $L_A$ | $L_{down}$ = 500 ft |
| $V_u$ = veh/h | Deceleration Lane Length $L_D$: 100 | $V_D$ = 750 veh/h |
| | Freeway Volume, $V_F$: 1522 | |
| | Ramp Volume, $V_R$: 261 | |
| | Freeway Free-Flow Speed, $S_{FF}$: 55.0 | |
| | Ramp Free-Flow Speed, $S_{FR}$: 25.0 | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | $v = V/PHF \times f_{HV} \times f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1522 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 1818 |
| Ramp | 261 | 0.90 | Rolling | 2 | 0 | 0.971 | 1.00 | 299 |
| UpStream | | | | | | | | |
| DownStream | 750 | 0.90 | Rolling | 2 | 0 | 0.971 | 1.00 | 858 |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = using Equation (Exhibit 13-6)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$M_S$ = (Exibit 13-11)

$S_R$ = mph (Exhibit 13-11)

$S_0$ = mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)

$V_{12}$ = 1818 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 1818 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 1519 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 299 | Exhibit 13-10 | 1900 | No |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 1818 | Exhibit 13-8 | 4400:All | No |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = 19.0 (pc/mi/ln)

LOS = B (Exhibit 13-2)

### Speed Determination

$D_s$ = 0.585 (Exhibit 13-12)

$S_R$ = 47.4 mph (Exhibit 13-12)

$S_0$ = N/A mph (Exhibit 13-12)

S = 47.4 mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 201 - US 321 at Clement Blvd |
| Date Performed | 2/7/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description: US 321 at Clement Boulevard (Partial Cloverleaf)

## Inputs

**Upstream Adj Ramp**
☐ Yes ☐ On
☑ No ☐ Off
$L_{up}$ = ft
$V_u$ = veh/h

| | |
|---|---|
| Freeway Number of Lanes, N | 2 |
| Ramp Number of Lanes, N | 1 |
| Acceleration Lane Length, $L_A$ | |
| Deceleration Lane Length $L_D$ | 100 |
| Freeway Volume, $V_F$ | 2257 |
| Ramp Volume, $V_R$ | 277 |
| Freeway Free-Flow Speed, $S_{FF}$ | 55.0 |
| Ramp Free-Flow Speed, $S_{FR}$ | 25.0 |

**Downstream Adj Ramp**
☑ Yes ☑ On
☐ No ☐ Off
$L_{down}$ = 500 ft
$V_D$ = 1074 veh/h

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 2257 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2696 |
| Ramp | 277 | 0.90 | Rolling | 2 | 0 | 0.971 | 1.00 | 317 |
| UpStream | | | | | | | | |
| DownStream | 1074 | 0.90 | Rolling | 2 | 0 | 0.971 | 1.00 | 1229 |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)
$P_{FM}$ = using Equation (Exhibit 13-6)
$V_{12}$ = pc/h
$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)
Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No
Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No
If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = (pc/mi/ln)
LOS = (Exhibit 13-2)

### Speed Determination

$M_S$ = (Exibit 13-11)
$S_R$ = mph (Exhibit 13-11)
$S_0$ = mph (Exhibit 13-11)
S = mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)
$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)
$V_{12}$ = 2696 pc/h
$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)
Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No
Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No
If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 2696 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 2379 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 317 | Exhibit 13-10 | 1900 | No |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 2696 | Exhibit 13-8 | 4400:All | No |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = 26.5 (pc/mi/ln)
LOS = C (Exhibit 13-2)

### Speed Determination

$D_s$ = 0.587 (Exhibit 13-12)
$S_R$ = 47.4 mph (Exhibit 13-12)
$S_0$ = N/A mph (Exhibit 13-12)
S = 47.4 mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 202 - US 321 at Clement Blvd |
| Date Performed | 10/14/11 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description US 321 at Clement Boulevard - (Partial Cloverleaf)

## Inputs

| Upstream Adj Ramp | | Downstream Adj Ramp |
|---|---|---|
| ☑ Yes ☐ On | Freeway Number of Lanes, N: 2 | ☐ Yes ☐ On |
| ☐ No ☑ Off | Ramp Number of Lanes, N: 1 | ☑ No ☐ Off |
| $L_{up}$ = 500 ft | Acceleration Lane Length, $L_A$: 500 | $L_{down}$ = ft |
| $V_u$ = 1074 veh/h | Deceleration Lane Length $L_D$: | $V_D$ = veh/h |
| | Freeway Volume, $V_F$: 1980 | |
| | Ramp Volume, $V_R$: 277 | |
| | Freeway Free-Flow Speed, $S_{FF}$: 55.0 | |
| | Ramp Free-Flow Speed, $S_{FR}$: 35.0 | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1980 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2365 |
| Ramp | 277 | 0.90 | Rolling | 2 | 0 | 0.971 | 1.00 | 317 |
| UpStream | 1074 | 0.90 | Rolling | 2 | 0 | 0.971 | 1.00 | 1229 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = 1.000 using Equation (Exhibit 13-6)

$V_{12}$ = 2365 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 2682 | Exhibit 13-8 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 2682 | Exhibit 13-8 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$

$D_R$ = 23.1 (pc/mi/ln)

LOS = C (Exhibit 13-2)

### Speed Determination

$M_S$ = 0.343 (Exibit 13-11)

$S_R$ = 50.5 mph (Exhibit 13-11)

$S_0$ = N/A mph (Exhibit 13-11)

S = 50.5 mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = using Equation (Exhibit 13-7)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 13-8 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 13-8 | | |
| $V_R$ | | Exhibit 13-10 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$D_s$ = (Exhibit 13-12)

$S_R$ = mph (Exhibit 13-12)

$S_0$ = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 202 - US 321 at Clement Blvd |
| Date Performed | 2/9/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description: US 321 at Clement Boulevard - (Partial Cloverleaf)

## Inputs

**Upstream Adj Ramp**

☑ Yes ☐ On

☐ No ☑ Off

$L_{up}$ = 500 ft

$V_u$ = 750 veh/h

| | |
|---|---|
| Freeway Number of Lanes, N | 2 |
| Ramp Number of Lanes, N | 1 |
| Acceleration Lane Length, $L_A$ | 500 |
| Deceleration Lane Length $L_D$ | |
| Freeway Volume, $V_F$ | 1261 |
| Ramp Volume, $V_R$ | 261 |
| Freeway Free-Flow Speed, $S_{FF}$ | 55.0 |
| Ramp Free-Flow Speed, $S_{FR}$ | 35.0 |

**Downstream Adj Ramp**

☐ Yes ☐ On

☑ No ☐ Off

$L_{down}$ = ft

$V_D$ = veh/h

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1261 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 1506 |
| Ramp | 261 | 0.90 | Rolling | 2 | 0 | 0.971 | 1.00 | 299 |
| UpStream | 750 | 0.90 | Rolling | 2 | 0 | 0.971 | 1.00 | 858 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = 1.000 using Equation (Exhibit 13-6)

$V_{12}$ = 1506 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 1805 | Exhibit 13-8 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 1805 | Exhibit 13-8 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = 16.3 (pc/mi/ln)

LOS = B (Exhibit 13-2)

### Speed Determination

$M_S$ = 0.310 (Exibit 13-11)

$S_R$ = 51.0 mph (Exhibit 13-11)

$S_0$ = N/A mph (Exhibit 13-11)

S = 51.0 mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = using Equation (Exhibit 13-7)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 13-8 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 13-8 | | |
| $V_R$ | | Exhibit 13-10 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$D_s$ = (Exhibit 13-12)

$S_R$ = mph (Exhibit 13-12)

$S_0$ = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 203 - US 321 at Clement Blvd |
| Date Performed | 2/9/17 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description: US 321 at Clement Boulevard - (Partial Cloverleaf)

## Inputs

**Upstream Adj Ramp**

☑ Yes ☐ On

☐ No ☑ Off

$L_{up}$ = 500 ft

$V_u$ = 261 veh/h

| | |
|---|---|
| Freeway Number of Lanes, N | 2 |
| Ramp Number of Lanes, N | 1 |
| Acceleration Lane Length, $L_A$ | 500 |
| Deceleration Lane Length $L_D$ | |
| Freeway Volume, $V_F$ | 1261 |
| Ramp Volume, $V_R$ | 750 |
| Freeway Free-Flow Speed, $S_{FF}$ | 55.0 |
| Ramp Free-Flow Speed, $S_{FR}$ | 35.0 |

**Downstream Adj Ramp**

☐ Yes ☐ On

☑ No ☐ Off

$L_{down}$ = ft

$V_D$ = veh/h

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1261 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 1506 |
| Ramp | 750 | 0.90 | Rolling | 2 | 0 | 0.971 | 1.00 | 858 |
| UpStream | 261 | 0.90 | Rolling | 2 | 0 | 0.971 | 1.00 | 299 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = 1.000 using Equation (Exhibit 13-6)

$V_{12}$ = 1506 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 2364 | Exhibit 13-8 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 2364 | Exhibit 13-8 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$

$D_R$ = 20.4 (pc/mi/ln)

LOS = C (Exhibit 13-2)

### Speed Determination

$M_S$ = 0.327 (Exibit 13-11)

$S_R$ = 50.7 mph (Exhibit 13-11)

$S_0$ = N/A mph (Exhibit 13-11)

S = 50.7 mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = using Equation (Exhibit 13-7)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 13-8 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 13-8 | | |
| $V_R$ | | Exhibit 13-10 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$D_s$ = (Exhibit 13-12)

$S_R$ = mph (Exhibit 13-12)

$S_0$ = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / NB |
| Agency or Company | AECOM | Junction | 203 - US 321 at Clement Blvd |
| Date Performed | 2/9/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description: US 321 at Clement Boulevard - (Partial Cloverleaf)

## Inputs

**Upstream Adj Ramp**

☑ Yes ☐ On

☐ No ☑ Off

$L_{up}$ = 500 ft

$V_u$ = 277 veh/h

| | |
|---|---|
| Freeway Number of Lanes, N | 2 |
| Ramp Number of Lanes, N | 1 |
| Acceleration Lane Length, $L_A$ | 500 |
| Deceleration Lane Length $L_D$ | |
| Freeway Volume, $V_F$ | 1980 |
| Ramp Volume, $V_R$ | 1074 |
| Freeway Free-Flow Speed, $S_{FF}$ | 55.0 |
| Ramp Free-Flow Speed, $S_{FR}$ | 35.0 |

**Downstream Adj Ramp**

☐ Yes ☐ On

☑ No ☐ Off

$L_{down}$ = ft

$V_D$ = veh/h

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1980 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2365 |
| Ramp | 1074 | 0.90 | Rolling | 2 | 0 | 0.971 | 1.00 | 1229 |
| UpStream | 277 | 0.90 | Rolling | 2 | 0 | 0.971 | 1.00 | 317 |
| DownStream | | | | | | | | |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = 1.000 using Equation (Exhibit 13-6)

$V_{12}$ = 2365 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 3594 | Exhibit 13-8 | | No |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 3594 | Exhibit 13-8 | 4600:All | No |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$

$D_R$ = 29.8 (pc/mi/ln)

LOS = D (Exhibit 13-2)

### Speed Determination

$M_S$ = 0.428 (Exibit 13-11)

$S_R$ = 49.4 mph (Exhibit 13-11)

$S_0$ = N/A mph (Exhibit 13-11)

S = 49.4 mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = using Equation (Exhibit 13-7)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 13-8 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 13-8 | | |
| $V_R$ | | Exhibit 13-10 | | |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$D_s$ = (Exhibit 13-12)

$S_R$ = mph (Exhibit 13-12)

$S_0$ = mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 204 - US 321 at Clement Blvd |
| Date Performed | 2/7/17 | Jurisdiction | |
| Analysis Time Period | AM Peak | Analysis Year | 2040 |

Project Description: US 321 at Clement Boulevard (Partial Cloverleaf)

## Inputs

| Upstream Adj Ramp | | Downstream Adj Ramp |
|---|---|---|
| ☐ Yes ☐ On | Freeway Number of Lanes, N: 2 | ☑ Yes ☑ On |
| ☑ No ☐ Off | Ramp Number of Lanes, N: 1 | ☐ No ☐ Off |
| $L_{up}$ = ft | Acceleration Lane Length, $L_A$ | $L_{down}$ = 500 ft |
| $V_u$ = veh/h | Deceleration Lane Length $L_D$: 100 | $V_D$ = 277 veh/h |
| | Freeway Volume, $V_F$: 3054 | |
| | Ramp Volume, $V_R$: 1074 | |
| | Freeway Free-Flow Speed, $S_{FF}$: 55.0 | |
| | Ramp Free-Flow Speed, $S_{FR}$: 35.0 | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | $v = V/PHF \times f_{HV} \times f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 3054 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 3648 |
| Ramp | 1074 | 0.90 | Rolling | 2 | 0 | 0.971 | 1.00 | 1229 |
| UpStream | | | | | | | | |
| DownStream | 277 | 0.90 | Rolling | 2 | 0 | 0.971 | 1.00 | 317 |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = using Equation (Exhibit 13-6)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734 v_R + 0.0078 V_{12} - 0.00627 L_A$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$M_S$ = (Exibit 13-11)

$S_R$ = mph (Exhibit 13-11)

$S_0$ = mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)

$V_{12}$ = 3648 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 3648 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 2419 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 1229 | Exhibit 13-10 | 2000 | No |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 3648 | Exhibit 13-8 | 4400:All | No |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086 V_{12} - 0.009 L_D$

$D_R$ = 34.7 (pc/mi/ln)

LOS = D (Exhibit 13-2)

### Speed Determination

$D_s$ = 0.539 (Exhibit 13-12)

$S_R$ = 48.0 mph (Exhibit 13-12)

$S_0$ = N/A mph (Exhibit 13-12)

S = 48.0 mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information / Site Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 / SB |
| Agency or Company | AECOM | Junction | 204 - US 321 at Clement Blvd |
| Date Performed | 2/9/17 | Jurisdiction | |
| Analysis Time Period | PM Peak | Analysis Year | 2040 |

Project Description: US 321 at Clement Boulevard (Partial Cloverleaf)

## Inputs

| Upstream Adj Ramp | | Downstream Adj Ramp |
|---|---|---|
| ☐ Yes ☐ On | Freeway Number of Lanes, N: 2 | ☑ Yes ☑ On |
| ☑ No ☐ Off | Ramp Number of Lanes, N: 1 | ☐ No ☐ Off |
| $L_{up}$ = ft | Acceleration Lane Length, $L_A$ | $L_{down}$ = 500 ft |
| $V_u$ = veh/h | Deceleration Lane Length $L_D$: 100 | $V_D$ = 261 veh/h |
| | Freeway Volume, $V_F$: 2011 | |
| | Ramp Volume, $V_R$: 750 | |
| | Freeway Free-Flow Speed, $S_{FF}$: 55.0 | |
| | Ramp Free-Flow Speed, $S_{FR}$: 35.0 | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | $v = V/PHF \times f_{HV} \times f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 2011 | 0.90 | Rolling | 5 | 0 | 0.930 | 1.00 | 2402 |
| Ramp | 750 | 0.90 | Rolling | 2 | 0 | 0.971 | 1.00 | 858 |
| UpStream | | | | | | | | |
| DownStream | 261 | 0.90 | Rolling | 2 | 0 | 0.971 | 1.00 | 299 |

## Merge Areas

### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = using Equation (Exhibit 13-6)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | | Exhibit 13-8 | | |

### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | | Exhibit 13-8 | | |

### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

### Speed Determination

$M_S$ = (Exibit 13-11)

$S_R$ = mph (Exhibit 13-11)

$S_0$ = mph (Exhibit 13-11)

S = mph (Exhibit 13-13)

## Diverge Areas

### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = 1.000 using Equation (Exhibit 13-7)

$V_{12}$ = 2402 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes, $V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | 2402 | Exhibit 13-8 | 4500 | No |
| $V_{FO} = V_F - V_R$ | 1544 | Exhibit 13-8 | 4500 | No |
| $V_R$ | 858 | Exhibit 13-10 | 2000 | No |

### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | 2402 | Exhibit 13-8 | 4400:All | No |

### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = 24.0 (pc/mi/ln)

LOS = C (Exhibit 13-2)

### Speed Determination

$D_s$ = 0.505 (Exhibit 13-12)

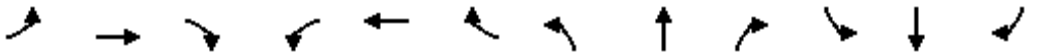
$S_R$ = 48.4 mph (Exhibit 13-12)

$S_0$ = N/A mph (Exhibit 13-12)

S = 48.4 mph (Exhibit 13-13)

APPENDIX I

# 2040 Build Alternative Clement Boulevard – Superstreet Synchro & SimTraffic Reports

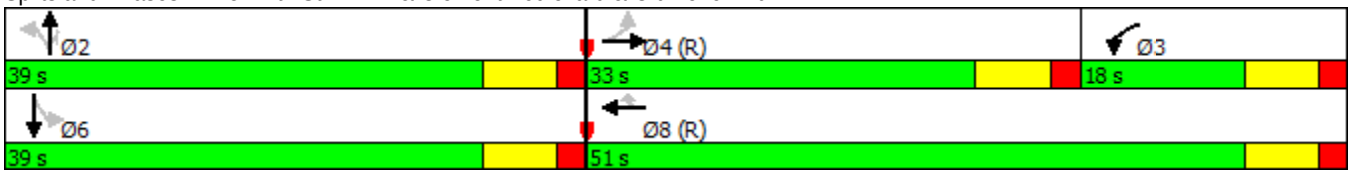


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 47 | 729 | 34 | 178 | 453 | 169 | 7 | 18 | 60 | 377 | 119 | 66 |
| Future Volume (vph) | 47 | 729 | 34 | 178 | 453 | 169 | 7 | 18 | 60 | 377 | 119 | 66 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 175 | | 0 | 150 | | 125 | 125 | | 125 | 0 | | 450 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.993 | | | | 0.850 | | | 0.850 | | 0.947 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 3514 | 0 | 1770 | 3539 | 1583 | 1770 | 1863 | 1583 | 1770 | 1764 | 0 |
| Flt Permitted | 0.434 | | | 0.950 | | | 0.579 | | | 0.744 | | |
| Satd. Flow (perm) | 808 | 3514 | 0 | 1770 | 3539 | 1583 | 1079 | 1863 | 1583 | 1386 | 1764 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 45 | |
| Link Distance (ft) | | 444 | | | 444 | | | 649 | | | 551 | |
| Travel Time (s) | | 8.6 | | | 8.6 | | | 12.6 | | | 8.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 52 | 810 | 38 | 198 | 503 | 188 | 8 | 20 | 67 | 419 | 132 | 73 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 52 | 848 | 0 | 198 | 503 | 188 | 8 | 20 | 67 | 419 | 205 | 0 |
| Turn Type | Perm | NA | | Prot | NA | Perm | Perm | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | | 3 | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | | 3 | 8 | 8 | 2 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | | 7.0 | 10.0 | 10.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | |
| Minimum Split (s) | 17.0 | 17.0 | | 14.0 | 17.0 | 17.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | |
| Total Split (s) | 33.0 | 33.0 | | 18.0 | 51.0 | 51.0 | 39.0 | 39.0 | 39.0 | 39.0 | 39.0 | |
| Total Split (%) | 36.7% | 36.7% | | 20.0% | 56.7% | 56.7% | 43.3% | 43.3% | 43.3% | 43.3% | 43.3% | |
| Maximum Green (s) | 26.0 | 26.0 | | 11.0 | 44.0 | 44.0 | 32.0 | 32.0 | 32.0 | 32.0 | 32.0 | |
| Yellow Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -2.0 | -2.0 | | -2.0 | -2.0 | -2.0 | -2.0 | -2.0 | -2.0 | -2.0 | -2.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | Lead | Lead | | Lag | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | C-Min | C-Min | | None | C-Min | C-Min | None | None | None | None | None | |
| Act Effct Green (s) | 30.3 | 30.3 | | 13.2 | 48.5 | 48.5 | 31.5 | 31.5 | 31.5 | 31.5 | 31.5 | |
| Actuated g/C Ratio | 0.34 | 0.34 | | 0.15 | 0.54 | 0.54 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | |
| v/c Ratio | 0.19 | 0.72 | | 0.76 | 0.26 | 0.22 | 0.02 | 0.03 | 0.12 | 0.86 | 0.33 | |
| Control Delay | 16.1 | 20.6 | | 61.4 | 14.2 | 14.3 | 17.9 | 18.0 | 19.3 | 46.0 | 22.5 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 16.1 | 20.6 | | 61.4 | 14.2 | 14.3 | 17.9 | 18.0 | 19.3 | 46.0 | 22.5 | |
| LOS | B | C | | E | B | B | B | B | B | D | C | |
| Approach Delay | | 20.4 | | | 24.8 | | | 18.9 | | | 38.3 | |
| Approach LOS | | C | | | C | | | B | | | D | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 50th (ft) | 15 | 137 | | 115 | 106 | 73 | 3 | 7 | 24 | 208 | 81 | |
| Queue Length 95th (ft) | 32 | 172 | | #222 | 143 | 123 | 12 | 22 | 52 | #367 | 135 | |
| Internal Link Dist (ft) | | 364 | | | 364 | | | 569 | | | 471 | |
| Turn Bay Length (ft) | 175 | | | 150 | | 125 | 125 | | 125 | | | |
| Base Capacity (vph) | 271 | 1181 | | 261 | 1905 | 852 | 407 | 703 | 598 | 523 | 666 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | 0.19 | 0.72 | | 0.76 | 0.26 | 0.22 | 0.02 | 0.03 | 0.11 | 0.80 | 0.31 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 55 (61%), Referenced to phase 4:EBTL and 8:WBT, Start of Green | | | |
| Natural Cycle: 65 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.86 | | | |
| Intersection Signal Delay: 26.3 | | Intersection LOS: C | |
| Intersection Capacity Utilization 71.1% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |

Splits and Phases: 25: 12th St Dr NW & Clement Boulevard & Old Lenoir Rd



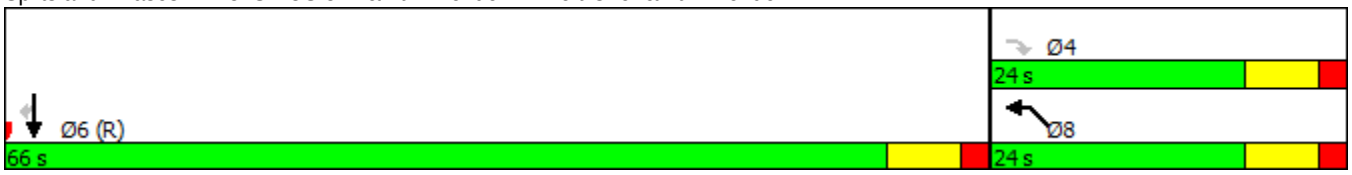
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 189 | 0 | 0 | 0 | 0 | 1742 | 368 | 201 | 0 |
| Future Volume (vph) | 0 | 0 | 189 | 0 | 0 | 0 | 0 | 1742 | 368 | 201 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 450 | | 0 | | 0 | 375 | | 250 | 0 | 0 |
| Storage Lanes | 0 | 0 | | 0 | | 0 | 0 | | 1 | 1 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.865 | | | | | | 0.850 | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 1596 | 0 | 0 | 0 | 0 | 3471 | 1583 | 1770 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 1596 | 0 | 0 | 0 | 0 | 3471 | 1583 | 1770 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 518 | | | | 815 | | | 1204 | | 221 | |
| Travel Time (s) | 10.1 | | | | 10.1 | | | 14.9 | | 6.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 2% | 2% | 2% | 2% | 4% | 2% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 210 | 0 | 0 | 0 | 0 | 1936 | 409 | 223 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 210 | 0 | 0 | 0 | 0 | 1936 | 409 | 223 | 0 |
| Turn Type | | | Perm | | | | | NA | Perm | Prot | |
| Protected Phases | | | | | | | | 6 | | 8 | |
| Permitted Phases | | | 4 | | | | | | 6 | | |
| Detector Phase | | | 4 | | | | | 6 | 6 | 8 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | | | | 14.0 | 14.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 21.0 | 21.0 | 14.0 | |
| Total Split (s) | | | 24.0 | | | | | 66.0 | 66.0 | 24.0 | |
| Total Split (%) | | | 26.7% | | | | | 73.3% | 73.3% | 26.7% | |
| Maximum Green (s) | | | 17.0 | | | | | 59.0 | 59.0 | 17.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | | | | -2.0 | -2.0 | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | |
| Recall Mode | | | None | | | | | C-Min | C-Min | None | |
| Act Effct Green (s) | | | 17.1 | | | | | 62.9 | 62.9 | 17.1 | |
| Actuated g/C Ratio | | | 0.19 | | | | | 0.70 | 0.70 | 0.19 | |
| v/c Ratio | | | 0.69 | | | | | 0.80 | 0.37 | 0.66 | |
| Control Delay | | | 46.2 | | | | | 6.3 | 3.8 | 38.4 | |
| Queue Delay | | | 0.0 | | | | | 0.0 | 0.0 | 0.0 | |
| Total Delay | | | 46.2 | | | | | 6.3 | 3.8 | 38.4 | |
| LOS | | | D | | | | | A | A | D | |
| Approach Delay | 46.2 | | | | | | | 5.9 | | 38.4 | |

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | D | | | | | | | A | | D | |
| Queue Length 50th (ft) | | | 109 | | | | | 151 | 50 | 117 | |
| Queue Length 95th (ft) | | | 184 | | | | | m168 | m58 | 171 | |
| Internal Link Dist (ft) | 438 | | | | 735 | | | 1124 | | 141 | |
| Turn Bay Length (ft) | | | 450 | | | | | | 250 | | |
| Base Capacity (vph) | | | 336 | | | | | 2424 | 1105 | 373 | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Reduced v/c Ratio | | | 0.63 | | | | | 0.80 | 0.37 | 0.60 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 20 (22%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.80 | | | |
| Intersection Signal Delay: 11.5 | | Intersection LOS: B | |
| Intersection Capacity Utilization 68.2% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 43: SB US 321 & 7th Avenue NW Left-Over & 7th Avenue NW



| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 1509 | 0 | 0 | 114 | 0 |
| Future Volume (vph) | 0 | 1509 | 0 | 0 | 114 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 3438 | 0 | 0 | 1719 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 3438 | 0 | 0 | 1719 | 0 |
| Right Turn on Red | | | | No | No | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | 55 | 55 | | 25 | |
| Link Distance (ft) | | 897 | 685 | | 100 | |
| Travel Time (s) | | 11.1 | 8.5 | | 2.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 5% | 2% | 2% | 5% | 2% |
| Adj. Flow (vph) | 0 | 1677 | 0 | 0 | 127 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 1677 | 0 | 0 | 127 | 0 |
| Turn Type | | NA | | | Prot | |
| Protected Phases | | 2 | | | 4 | |
| Permitted Phases | | | | | | |
| Detector Phase | | 2 | | | 4 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 14.0 | | | 7.0 | |
| Minimum Split (s) | | 21.0 | | | 14.0 | |
| Total Split (s) | | 70.0 | | | 20.0 | |
| Total Split (%) | | 77.8% | | | 22.2% | |
| Maximum Green (s) | | 63.0 | | | 13.0 | |
| Yellow Time (s) | | 5.0 | | | 5.0 | |
| All-Red Time (s) | | 2.0 | | | 2.0 | |
| Lost Time Adjust (s) | | -2.0 | | | -2.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | |
| Recall Mode | | C-Min | | | None | |
| Act Effct Green (s) | | 66.8 | | | 13.2 | |
| Actuated g/C Ratio | | 0.74 | | | 0.15 | |
| v/c Ratio | | 0.66 | | | 0.50 | |
| Control Delay | | 7.7 | | | 41.9 | |
| Queue Delay | | 0.0 | | | 0.0 | |
| Total Delay | | 7.7 | | | 41.9 | |
| LOS | | A | | | D | |
| Approach Delay | | 7.7 | | | 41.9 | |
| Approach LOS | | A | | | D | |
| Queue Length 50th (ft) | | 214 | | | 66 | |
| Queue Length 95th (ft) | | 293 | | | m80 | |

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | | 817 | 605 | | 20 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 2558 | | | 289 | |
| Starvation Cap Reductn | | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.66 | | | 0.44 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 71 (79%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 50 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.66 | | | |
| Intersection Signal Delay: 10.1 | | Intersection LOS: B | |
| Intersection Capacity Utilization 56.4% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 44: NB US 321 & 7th Avenue NW U-Turn

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 114 | 1817 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 114 | 1817 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 375 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 100 | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 771 | | | 815 | 100 | |
| Travel Time (s) | 9.6 | | | 10.1 | 1.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 5% | 5% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 127 | 2019 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 127 | 2019 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 56.4% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 201 | 1422 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 201 | 1422 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 100 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 0 | 0 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1770 | 3438 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1770 | 3438 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 685 | 1246 | | 221 | |
| Travel Time (s) | | 8.5 | 15.4 | | 2.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 5% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 223 | 1580 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 223 | 1580 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 99.0% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

## 61: NB US 321 & Clement Boulevard & Clement Boulevard Left-Over

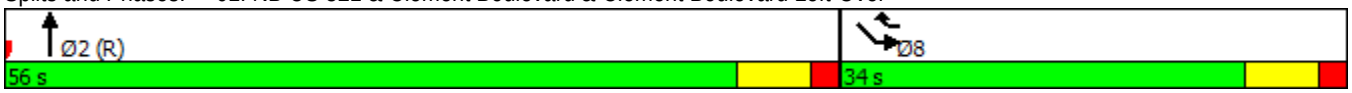
| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 932 | 0 | 1516 | 143 | 0 | 0 | 0 | 323 | 0 |
| Future Volume (vph) | 0 | 0 | 932 | 0 | 1516 | 143 | 0 | 0 | 0 | 323 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 250 | 0 | | 0 | | 0 | 0 | | 0 | 0 | 0 |
| Storage Lanes | 1 | 3 | | 0 | | 1 | 0 | | 0 | 2 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.76 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 3610 | 0 | 3438 | 1583 | 0 | 0 | 0 | 3433 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 3610 | 0 | 3438 | 1583 | 0 | 0 | 0 | 3433 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 444 | | | | 116 | | | 987 | | 235 | |
| Travel Time (s) | 8.6 | | | | 1.4 | | | 12.2 | | 6.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 5% | 2% | 4% | 4% | 2% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 1036 | 0 | 1684 | 159 | 0 | 0 | 0 | 359 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 1036 | 0 | 1684 | 159 | 0 | 0 | 0 | 359 | 0 |
| Turn Type | | | Prot | | NA | Free | | | | Prot | |
| Protected Phases | | | 8 | | 2 | | | | | 8 | |
| Permitted Phases | | | 8 | | | Free | | | | 8 | |
| Detector Phase | | | 8 | | 2 | | | | | 8 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 14.0 | | | | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 21.0 | | | | | 14.0 | |
| Total Split (s) | | | 34.0 | | 56.0 | | | | | 34.0 | |
| Total Split (%) | | | 37.8% | | 62.2% | | | | | 37.8% | |
| Maximum Green (s) | | | 27.0 | | 49.0 | | | | | 27.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | | | | | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | -2.0 | | | | | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | | | | | 3.0 | |
| Recall Mode | | | None | | C-Min | | | | | None | |
| Act Effct Green (s) | | | 28.8 | | 51.2 | 90.0 | | | | 28.8 | |
| Actuated g/C Ratio | | | 0.32 | | 0.57 | 1.00 | | | | 0.32 | |
| v/c Ratio | | | 0.90 | | 0.86 | 0.10 | | | | 0.33 | |
| Control Delay | | | 33.3 | | 10.3 | 0.1 | | | | 22.8 | |
| Queue Delay | | | 0.0 | | 0.0 | 0.0 | | | | 0.0 | |
| Total Delay | | | 33.3 | | 10.3 | 0.1 | | | | 22.8 | |
| LOS | | | C | | B | A | | | | C | |
| Approach Delay | 33.3 | | | | 9.4 | | | | | 22.8 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | C | | | | A | | | | | C | |
| Queue Length 50th (ft) | | | 254 | | 161 | 0 | | | | 93 | |
| Queue Length 95th (ft) | | | #346 | | 177 | m0 | | | | m106 | |
| Internal Link Dist (ft) | 364 | | | | 36 | | | 907 | | 155 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 1163 | | 1956 | 1583 | | | | 1106 | |
| Starvation Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Reduced v/c Ratio | | | 0.89 | | 0.86 | 0.10 | | | | 0.32 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 65 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.90 | | | |
| Intersection Signal Delay: 18.5 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 61: NB US 321 & Clement Boulevard & Clement Boulevard Left-Over



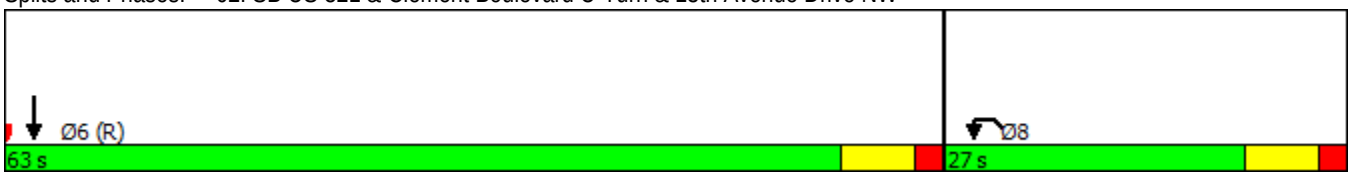
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 46 | 0 | 0 | 0 | 0 | 2486 | 31 | 272 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 46 | 0 | 0 | 0 | 0 | 2486 | 31 | 272 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.865 | | | | | 0.998 | | | | |
| Flt Protected | | | | | | | | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 0 | 1565 | 0 | 0 | 0 | 0 | 4930 | 0 | 1719 | 0 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 0 | 1565 | 0 | 0 | 0 | 0 | 4930 | 0 | 1719 | 0 | 0 |
| Right Turn on Red | | | No | | | No | | | No | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | | 25 | |
| Link Distance (ft) | 391 | | | | 835 | | | 456 | | | 104 | |
| Travel Time (s) | 7.6 | | | | 10.4 | | | 5.7 | | | 2.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 5% | 2% | 2% | 2% | 2% | 5% | 5% | 5% | 2% | 2% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 |
| Adj. Flow (vph) | 0 | 0 | 51 | 0 | 0 | 0 | 0 | 2762 | 34 | 302 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 51 | 0 | 0 | 0 | 0 | 2796 | 0 | 302 | 0 | 0 |
| Turn Type | | | Free | | | | | NA | | Prot | | |
| Protected Phases | | | | | | | | 6 | | 8 | | |
| Permitted Phases | | | Free | | | | | | | | | |
| Detector Phase | | | | | | | | 6 | | 8 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | | | | | | | 14.0 | | 7.0 | | |
| Minimum Split (s) | | | | | | | | 21.0 | | 14.0 | | |
| Total Split (s) | | | | | | | | 63.0 | | 27.0 | | |
| Total Split (%) | | | | | | | | 70.0% | | 30.0% | | |
| Maximum Green (s) | | | | | | | | 56.0 | | 20.0 | | |
| Yellow Time (s) | | | | | | | | 5.0 | | 5.0 | | |
| All-Red Time (s) | | | | | | | | 2.0 | | 2.0 | | |
| Lost Time Adjust (s) | | | | | | | | -2.0 | | -2.0 | | |
| Total Lost Time (s) | | | | | | | | 5.0 | | 5.0 | | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | | | | | | | 3.0 | | 3.0 | | |
| Recall Mode | | | | | | | | C-Min | | None | | |
| Act Effct Green (s) | | | 90.0 | | | | | 59.6 | | 20.4 | | |
| Actuated g/C Ratio | | | 1.00 | | | | | 0.66 | | 0.23 | | |
| v/c Ratio | | | 0.03 | | | | | 0.86 | | 0.77 | | |
| Control Delay | | | 0.0 | | | | | 15.9 | | 41.0 | | |
| Queue Delay | | | 0.0 | | | | | 0.0 | | 0.0 | | |
| Total Delay | | | 0.0 | | | | | 15.9 | | 41.0 | | |
| LOS | | | A | | | | | B | | D | | |
| Approach Delay | | | | | | | | 15.9 | | | 41.0 | |
| Approach LOS | | | | | | | | B | | | D | |
| Queue Length 50th (ft) | | | 0 | | | | | 428 | | 161 | | |

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 95th (ft) | | | 0 | | | | | 512 | | m188 | | |
| Internal Link Dist (ft) | 311 | | | | 755 | | | 376 | | | 24 | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | | | 1565 | | | | | 3262 | | 420 | | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | | 0 | | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | | 0 | | |
| Storage Cap Reductn | | | 0 | | | | | 0 | | 0 | | |
| Reduced v/c Ratio | | | 0.03 | | | | | 0.86 | | 0.72 | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 86 (96%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 55 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.86 | | | |
| Intersection Signal Delay: 18.1 | | Intersection LOS: B | |
| Intersection Capacity Utilization 71.3% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 62: SB US 321 & Clement Boulevard U-Turn & 13th Avenue Drive NW

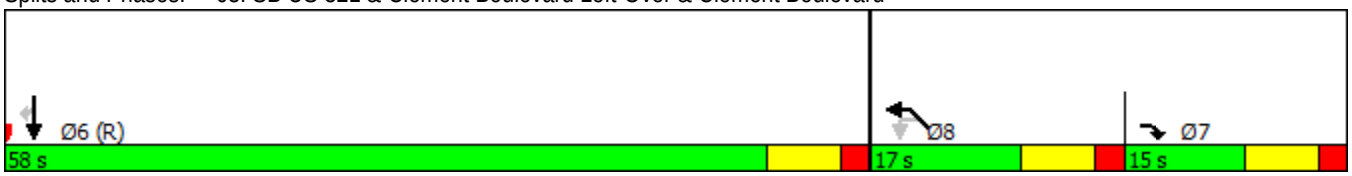


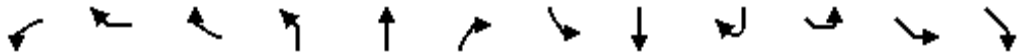
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 219 | 0 | 0 | 0 | 0 | 1672 | 207 | 248 | 39 | 0 |
| Future Volume (vph) | 0 | 0 | 219 | 0 | 0 | 0 | 0 | 1672 | 207 | 248 | 39 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | | | | 0.850 | | | |
| Flt Protected | | | | | | | | | | 0.950 | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2787 | 0 | 0 | 0 | 0 | 3438 | 1583 | 1681 | 1681 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2787 | 0 | 0 | 0 | 0 | 3438 | 1583 | 1681 | 1681 | 0 |
| Right Turn on Red | | | No | | | No | | | No | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | | 25 | |
| Link Distance (ft) | 749 | | | | 781 | | | 222 | | | 128 | |
| Travel Time (s) | 14.6 | | | | 9.7 | | | 2.8 | | | 3.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 5% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 243 | 0 | 0 | 0 | 0 | 1858 | 230 | 276 | 43 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | 42% | | |
| Lane Group Flow (vph) | 0 | 0 | 243 | 0 | 0 | 0 | 0 | 1858 | 230 | 160 | 159 | 0 |
| Turn Type | | | Prot | | | | | NA | Perm | Perm | Prot | |
| Protected Phases | | | 7 | | | | | 6 | | | 8 | |
| Permitted Phases | | | | | | | | | 6 | 8 | | |
| Detector Phase | | | 7 | | | | | 6 | 6 | 8 | 8 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | | | | 14.0 | 14.0 | 7.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 21.0 | 21.0 | 14.0 | 14.0 | |
| Total Split (s) | | | 15.0 | | | | | 58.0 | 58.0 | 17.0 | 17.0 | |
| Total Split (%) | | | 16.7% | | | | | 64.4% | 64.4% | 18.9% | 18.9% | |
| Maximum Green (s) | | | 8.0 | | | | | 51.0 | 51.0 | 10.0 | 10.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | | | | -2.0 | -2.0 | -2.0 | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | | | Lag | | | | | | | Lead | Lead | |
| Lead-Lag Optimize? | | | Yes | | | | | | | Yes | Yes | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | | | None | | | | | C-Min | C-Min | None | None | |
| Act Effct Green (s) | | | 10.3 | | | | | 52.9 | 52.9 | 11.8 | 11.8 | |
| Actuated g/C Ratio | | | 0.11 | | | | | 0.59 | 0.59 | 0.13 | 0.13 | |
| v/c Ratio | | | 0.76 | | | | | 0.92 | 0.25 | 0.73 | 0.72 | |
| Control Delay | | | 55.7 | | | | | 14.5 | 5.9 | 53.0 | 52.7 | |
| Queue Delay | | | 0.0 | | | | | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | | | 55.7 | | | | | 14.5 | 5.9 | 53.0 | 52.7 | |
| LOS | | | E | | | | | B | A | D | D | |
| Approach Delay | 55.7 | | | | | | | 13.5 | | | 52.8 | |
| Approach LOS | E | | | | | | | B | | | D | |
| Queue Length 50th (ft) | | | 77 | | | | | 125 | 29 | 97 | 97 | |
| Queue Length 95th (ft) | | | #142 | | | | | #481 | m43 | m#143 | m142 | |

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 669 | | | | 701 | | | 142 | | | 48 | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | | | 319 | | | | | 2024 | 932 | 224 | 224 | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | | | 0.76 | | | | | 0.92 | 0.25 | 0.71 | 0.71 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 4 (4%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 80 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.92 | | | |
| Intersection Signal Delay: 22.1 | | Intersection LOS: C | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 63: SB US 321 & Clement Boulevard Left-Over & Clement Boulevard





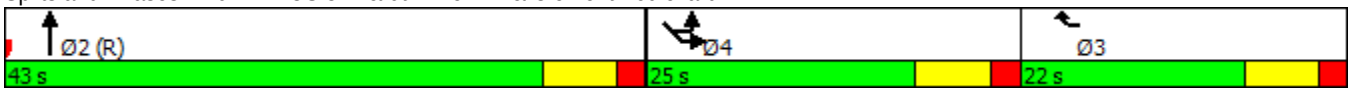
| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL2 | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 308 | 0 | 1345 | 138 | 0 | 0 | 0 | 168 | 52 | 0 |
| Future Volume (vph) | 0 | 0 | 308 | 0 | 1345 | 138 | 0 | 0 | 0 | 168 | 52 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 250 | | 0 | | 375 | 0 | | 0 | | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 1 | 0 | | 0 | | 1 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.986 | | | | | | | |
| Flt Protected | | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2733 | 0 | 4884 | 0 | 0 | 0 | 0 | 0 | 1731 | 0 |
| Flt Permitted | | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2733 | 0 | 4884 | 0 | 0 | 0 | 0 | 0 | 1731 | 0 |
| Right Turn on Red | | | No | | | No | | | No | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | 25 | | | | 55 | | | 55 | | | 25 | |
| Link Distance (ft) | 322 | | | | 1246 | | | 837 | | | 179 | |
| Travel Time (s) | 8.8 | | | | 15.4 | | | 10.4 | | | 4.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 2% | 5% | 2% | 2% | 2% | 2% | 5% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 342 | 0 | 1494 | 153 | 0 | 0 | 0 | 187 | 58 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 342 | 0 | 1647 | 0 | 0 | 0 | 0 | 0 | 245 | 0 |
| Turn Type | | | Prot | | NA | | | | | Prot | Prot | |
| Protected Phases | | | 3 | | 2 | | | | | 4 | 4 | |
| Permitted Phases | | | | | | | | | | | | |
| Detector Phase | | | 3 | | 2 | | | | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 14.0 | | | | | 7.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 21.0 | | | | | 14.0 | 14.0 | |
| Total Split (s) | | | 22.0 | | 43.0 | | | | | 25.0 | 25.0 | |
| Total Split (%) | | | 24.4% | | 47.8% | | | | | 27.8% | 27.8% | |
| Maximum Green (s) | | | 15.0 | | 36.0 | | | | | 18.0 | 18.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | | | | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | -2.0 | | | | | | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | | | | | | 5.0 | |
| Lead/Lag | | | Lag | | | | | | | Lead | Lead | |
| Lead-Lag Optimize? | | | Yes | | | | | | | Yes | Yes | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | |
| Recall Mode | | | None | | C-Min | | | | | None | None | |
| Act Effct Green (s) | | | 16.2 | | 40.7 | | | | | | 18.1 | |
| Actuated g/C Ratio | | | 0.18 | | 0.45 | | | | | | 0.20 | |
| v/c Ratio | | | 0.69 | | 0.75 | | | | | | 0.71 | |
| Control Delay | | | 42.6 | | 19.4 | | | | | | 32.6 | |
| Queue Delay | | | 0.0 | | 0.0 | | | | | | 0.0 | |
| Total Delay | | | 42.6 | | 19.4 | | | | | | 32.6 | |
| LOS | | | D | | B | | | | | | C | |
| Approach Delay | 42.6 | | | | 19.4 | | | | | | 32.6 | |

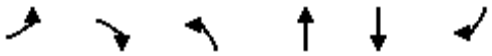
| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL2 | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | D | | | | B | | | | | | C | |
| Queue Length 50th (ft) | | | 103 | | 299 | | | | | | 120 | |
| Queue Length 95th (ft) | | | 153 | | 263 | | | | | | m142 | |
| Internal Link Dist (ft) | 242 | | | | 1166 | | | 757 | | | 99 | |
| Turn Bay Length (ft) | | | 250 | | | | | | | | | |
| Base Capacity (vph) | | | 517 | | 2207 | | | | | | 384 | |
| Starvation Cap Reductn | | | 0 | | 0 | | | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | | | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | | | | | | 0 | |
| Reduced v/c Ratio | | | 0.66 | | 0.75 | | | | | | 0.64 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 4 (4%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 55 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.75 | | | |
| Intersection Signal Delay: 24.4 | | Intersection LOS: C | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 64: NB US 321 & 9th Ave NW & Clement Boulevard





| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 272 | 2176 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 272 | 2176 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Link Speed (mph) | 25 | | | 55 | 55 | |
| Link Distance (ft) | 104 | | | 987 | 471 | |
| Travel Time (s) | 2.8 | | | 12.2 | 5.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 5% | 5% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 302 | 2418 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 302 | 2418 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 63.5% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 323 | 1879 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 323 | 1879 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 225 | | 0 | 0 |
| Storage Lanes | | 0 | 2 | | 0 | 0 |
| Taper Length (ft) | | | 100 | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 3433 | 4940 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 3433 | 4940 | 0 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 222 | | | 835 | 235 | |
| Travel Time (s) | 2.8 | | | 10.4 | 2.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 5% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 359 | 2088 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 359 | 2088 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

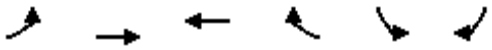
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 39.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 220 | 2037 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 220 | 2037 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 175 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 100 | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 1204 | | | 781 | 179 | |
| Travel Time (s) | 14.9 | | | 9.7 | 2.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 5% | 5% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 244 | 2263 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 244 | 2263 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 59.6% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 287 | 1659 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 287 | 1659 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 375 | | | 0 | 0 | 0 |
| Storage Lanes | 2 | | | 0 | 0 | 0 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 3433 | 4940 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 3433 | 4940 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 837 | 116 | | 128 | |
| Travel Time (s) | | 10.4 | 1.4 | | 1.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 5% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 319 | 1843 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 319 | 1843 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 35.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 509 | 650 | 269 | 45 | 115 | 535 |
| Future Volume (vph) | 509 | 650 | 269 | 45 | 115 | 535 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 200 | | | 0 | 0 | 300 |
| Storage Lanes | 2 | | | 0 | 1 | 1 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 0.97 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 |
| Frt | | | 0.979 | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 3433 | 3539 | 3465 | 0 | 1770 | 1583 |
| Flt Permitted | 0.950 | | | | 0.950 | |
| Satd. Flow (perm) | 3433 | 3539 | 3465 | 0 | 1770 | 1583 |
| Right Turn on Red | | | | No | | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | 45 | 45 | | 35 | |
| Link Distance (ft) | | 444 | 1015 | | 470 | |
| Travel Time (s) | | 6.7 | 15.4 | | 9.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 566 | 722 | 299 | 50 | 128 | 594 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 566 | 722 | 349 | 0 | 128 | 594 |
| Turn Type | Prot | NA | NA | | Prot | Free |
| Protected Phases | 7 | 4 | 8 | | 6 | |
| Permitted Phases | | | | | | Free |
| Detector Phase | 7 | 4 | 8 | | 6 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 12.0 | 12.0 | | 7.0 | |
| Minimum Split (s) | 14.0 | 19.0 | 19.0 | | 14.0 | |
| Total Split (s) | 37.0 | 66.0 | 29.0 | | 24.0 | |
| Total Split (%) | 41.1% | 73.3% | 32.2% | | 26.7% | |
| Maximum Green (s) | 30.0 | 59.0 | 22.0 | | 17.0 | |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | |
| Lost Time Adjust (s) | -2.0 | -2.0 | -2.0 | | -2.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | Lag | | Lead | | | |
| Lead-Lag Optimize? | Yes | | Yes | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | 3.0 | |
| Recall Mode | None | C-Min | C-Min | | None | |
| Act Effct Green (s) | 22.3 | 66.2 | 39.0 | | 13.8 | 90.0 |
| Actuated g/C Ratio | 0.25 | 0.74 | 0.43 | | 0.15 | 1.00 |
| v/c Ratio | 0.67 | 0.28 | 0.23 | | 0.47 | 0.38 |
| Control Delay | 18.8 | 0.7 | 18.3 | | 39.9 | 0.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 18.8 | 0.7 | 18.3 | | 39.9 | 0.7 |
| LOS | B | A | B | | D | A |
| Approach Delay | | 8.7 | 18.3 | | 7.6 | |
| Approach LOS | | A | B | | A | |

| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Queue Length 50th (ft) | 83 | 4 | 63 | | 67 | 0 |
| Queue Length 95th (ft) | m149 | 30 | 114 | | 115 | 0 |
| Internal Link Dist (ft) | | 364 | 935 | | 390 | |
| Turn Bay Length (ft) | 200 | | | | | 300 |
| Base Capacity (vph) | 1220 | 2604 | 1499 | | 373 | 1583 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.46 | 0.28 | 0.23 | | 0.34 | 0.38 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 44 (49%), Referenced to phase 4:EBT and 8:WBT, Start of Green | | | |
| Natural Cycle: 50 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.67 | | | |
| Intersection Signal Delay: 9.8 | | Intersection LOS: A | |
| Intersection Capacity Utilization 43.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 441: Old Lenoir Rd & 12 Ave NW

## Summary of All Intervals

| Start Time | 6:50 |
|---|---|
| End Time | 8:00 |
| Total Time (min) | 70 |
| Time Recorded (min) | 60 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 7590 |
| Vehs Exited | 7642 |
| Starting Vehs | 244 |
| Ending Vehs | 192 |
| Travel Distance (mi) | 4767 |
| Travel Time (hr) | 250.1 |
| Total Delay (hr) | 137.7 |
| Total Stops | 9376 |
| Fuel Used (gal) | 235.7 |

## Interval #0 Information Seeding

| Start Time | 6:50 |
|---|---|
| End Time | 7:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 7:00 |
|---|---|
| End Time | 8:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 7590 |
|---|---|
| Vehs Exited | 7642 |
| Starting Vehs | 244 |
| Ending Vehs | 192 |
| Travel Distance (mi) | 4767 |
| Travel Time (hr) | 250.1 |
| Total Delay (hr) | 137.7 |
| Total Stops | 9376 |
| Fuel Used (gal) | 235.7 |

## Intersection: 25: 12th St Dr NW & Clement Boulevard & Old Lenoir Rd

| Movement | EB | EB | EB | WB | WB | WB | WB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | TR | L | T | T | R | L | T | L | TR |
| Maximum Queue (ft) | 113 | 264 | 203 | 250 | 276 | 94 | 131 | 26 | 52 | 348 | 132 |
| Average Queue (ft) | 46 | 175 | 112 | 113 | 71 | 48 | 39 | 6 | 9 | 196 | 77 |
| 95th Queue (ft) | 84 | 242 | 184 | 208 | 192 | 89 | 91 | 23 | 35 | 299 | 131 |
| Link Distance (ft) | | 332 | 332 | | 379 | 379 | | | 586 | 490 | |
| Upstream Blk Time (%) | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | |
| Storage Bay Dist (ft) | 175 | | | 150 | | | 125 | 125 | | | 450 |
| Storage Blk Time (%) | | 13 | | 11 | 0 | | 0 | | | | |
| Queuing Penalty (veh) | | 6 | | 24 | 0 | | 0 | | | | |

## Intersection: 43: SB US 321 & 7th Avenue NW Left-Over & 7th Avenue NW

| Movement | EB | SB | SB | SB | NW |
|---|---|---|---|---|---|
| Directions Served | > | T | T | R | L |
| Maximum Queue (ft) | 252 | 271 | 257 | 157 | 234 |
| Average Queue (ft) | 116 | 145 | 136 | 83 | 125 |
| 95th Queue (ft) | 209 | 229 | 221 | 144 | 208 |
| Link Distance (ft) | 454 | 1132 | 1132 | | 164 |
| Upstream Blk Time (%) | | | | | 7 |
| Queuing Penalty (veh) | | | | | 14 |
| Storage Bay Dist (ft) | | | | 250 | |
| Storage Blk Time (%) | | | 0 | | |
| Queuing Penalty (veh) | | | 1 | | |

## Intersection: 44: NB US 321 & 7th Avenue NW U-Turn

| Movement | NB | NB | SE |
|---|---|---|---|
| Directions Served | T | T | L |
| Maximum Queue (ft) | 282 | 227 | 108 |
| Average Queue (ft) | 112 | 74 | 75 |
| 95th Queue (ft) | 206 | 162 | 115 |
| Link Distance (ft) | 864 | 864 | 48 |
| Upstream Blk Time (%) | | | 37 |
| Queuing Penalty (veh) | | | 42 |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 47: SB US 321 & 7th Avenue NW U-Turn

| Movement | SB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 89 |
| Average Queue (ft) | 11 |
| 95th Queue (ft) | 50 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 375 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 48: NB US 321 & 7th Avenue NW Left-Over

| Movement | NB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 69 |
| Average Queue (ft) | 6 |
| 95th Queue (ft) | 37 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 100 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 61: NB US 321 & Clement Boulevard & Clement Boulevard Left-Over

| Movement | WB | WB | WB | NB | NB | NB | SE | SE |
|---|---|---|---|---|---|---|---|---|
| Directions Served | > | > | > | T | T | R | L | L |
| Maximum Queue (ft) | 234 | 246 | 297 | 134 | 142 | 54 | 174 | 175 |
| Average Queue (ft) | 158 | 159 | 152 | 110 | 113 | 2 | 88 | 82 |
| 95th Queue (ft) | 228 | 234 | 247 | 123 | 131 | 18 | 153 | 149 |
| Link Distance (ft) | | 332 | 332 | 12 | 12 | 12 | 62 | 62 |
| Upstream Blk Time (%) | | | | 34 | 36 | | 16 | 15 |
| Queuing Penalty (veh) | | | | 191 | 199 | | 26 | 25 |
| Storage Bay Dist (ft) | 250 | | | | | | | |
| Storage Blk Time (%) | 0 | 0 | | | | | | |
| Queuing Penalty (veh) | 0 | 0 | | | | | | |

## Intersection: 62: SB US 321 & Clement Boulevard U-Turn & 13th Avenue Drive NW

| Movement | SB | SB | SB | NW |
|---|---|---|---|---|
| Directions Served | T | T | TR | < |
| Maximum Queue (ft) | 462 | 462 | 449 | 141 |
| Average Queue (ft) | 384 | 310 | 229 | 108 |
| 95th Queue (ft) | 495 | 484 | 449 | 122 |
| Link Distance (ft) | 410 | 410 | 410 | 45 |
| Upstream Blk Time (%) | 12 | 10 | 5 | 62 |
| Queuing Penalty (veh) | 0 | 0 | 0 | 167 |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 63: SB US 321 & Clement Boulevard Left-Over & Clement Boulevard

| Movement | EB | EB | SB | SB | SB | NW | NW |
|---|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | R | < | <L |
| Maximum Queue (ft) | 191 | 184 | 248 | 222 | 156 | 131 | 173 |
| Average Queue (ft) | 108 | 50 | 182 | 188 | 49 | 81 | 112 |
| 95th Queue (ft) | 178 | 137 | 240 | 231 | 108 | 117 | 151 |
| Link Distance (ft) | 671 | 671 | 86 | 86 | 86 | 43 | 43 |
| Upstream Blk Time (%) | | | 28 | 32 | 2 | 30 | 49 |
| Queuing Penalty (veh) | | | 177 | 199 | 15 | 43 | 71 |
| Storage Bay Dist (ft) | | | | | | | |
| Storage Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |

## Intersection: 64: NB US 321 & 9th Ave NW & Clement Boulevard

| Movement | WB | WB | NB | NB | NB | SE |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | TR | <L |
| Maximum Queue (ft) | 273 | 252 | 328 | 352 | 324 | 230 |
| Average Queue (ft) | 184 | 99 | 210 | 221 | 175 | 132 |
| 95th Queue (ft) | 274 | 234 | 309 | 314 | 280 | 203 |
| Link Distance (ft) | 258 | | 1191 | 1191 | | 110 |
| Upstream Blk Time (%) | 1 | 0 | | | | 16 |
| Queuing Penalty (veh) | 0 | 0 | | | | 35 |
| Storage Bay Dist (ft) | | 250 | | | 375 | |
| Storage Blk Time (%) | 1 | 0 | | | | |
| Queuing Penalty (veh) | 2 | 0 | | | | |

## Intersection: 65: NB US 321 & Clement Boulevard U-Turn

| Movement | NB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 320 |
| Average Queue (ft) | 113 |
| 95th Queue (ft) | 233 |
| Link Distance (ft) | 852 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 66: SB US 321 & Clement Boulevard Left-Over

| Movement | SB | SB | SB | SB |
|---|---|---|---|---|
| Directions Served | L | L | T | T |
| Maximum Queue (ft) | 23 | 19 | 201 | 179 |
| Average Queue (ft) | 1 | 1 | 46 | 60 |
| 95th Queue (ft) | 8 | 9 | 147 | 151 |
| Link Distance (ft) | | | 789 | 789 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | 225 | 225 | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 67: SB US 321 & Clement Boulevard

| Movement | SB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 132 |
| Average Queue (ft) | 13 |
| 95th Queue (ft) | 66 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 175 |
| Storage Blk Time (%) | 0 |
| Queuing Penalty (veh) | 0 |

## Intersection: 68: NB US 321 & Clement Boulevard Left-Over

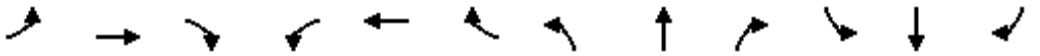
| Movement | NB | NB | NB | NB | NB |
|---|---|---|---|---|---|
| Directions Served | L | L | T | T | T |
| Maximum Queue (ft) | 24 | 98 | 262 | 275 | 74 |
| Average Queue (ft) | 1 | 8 | 96 | 100 | 7 |
| 95th Queue (ft) | 8 | 49 | 217 | 218 | 35 |
| Link Distance (ft) | | | 768 | 768 | 768 |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (ft) | 375 | 375 | | | |
| Storage Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |

## Intersection: 441: Old Lenoir Rd & 12 Ave NW

| Movement | EB | EB | EB | EB | WB | WB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | T | T | T | TR | L | R |
| Maximum Queue (ft) | 199 | 190 | 198 | 96 | 136 | 90 | 144 | 104 |
| Average Queue (ft) | 95 | 118 | 28 | 30 | 68 | 48 | 60 | 15 |
| 95th Queue (ft) | 166 | 178 | 96 | 75 | 125 | 81 | 109 | 67 |
| Link Distance (ft) | | | 379 | 379 | 948 | 948 | 396 | |
| Upstream Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |
| Storage Bay Dist (ft) | 200 | 200 | | | | | | 300 |
| Storage Blk Time (%) | 0 | 0 | 0 | | | | | |
| Queuing Penalty (veh) | 0 | 0 | 0 | | | | | |

## Network Summary

Network wide Queuing Penalty: 1237

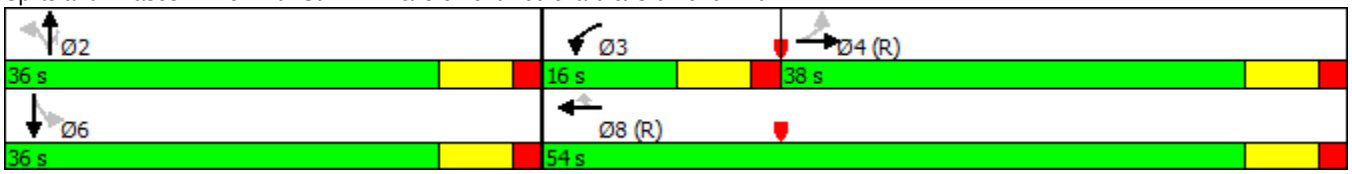


| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 66 | 453 | 7 | 60 | 729 | 377 | 34 | 119 | 178 | 169 | 18 | 47 |
| Future Volume (vph) | 66 | 453 | 7 | 60 | 729 | 377 | 34 | 119 | 178 | 169 | 18 | 47 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 175 | | 0 | 150 | | 125 | 125 | | 125 | 0 | | 450 |
| Storage Lanes | 1 | | 0 | 1 | | 1 | 1 | | 1 | 1 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | | |
| Lane Util. Factor | 1.00 | 0.95 | 0.95 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | 0.998 | | | | 0.850 | | | 0.850 | | 0.892 | |
| Flt Protected | 0.950 | | | 0.950 | | | 0.950 | | | 0.950 | | |
| Satd. Flow (prot) | 1770 | 3532 | 0 | 1770 | 3539 | 1583 | 1770 | 1863 | 1583 | 1770 | 1662 | 0 |
| Flt Permitted | 0.346 | | | 0.950 | | | 0.710 | | | 0.657 | | |
| Satd. Flow (perm) | 645 | 3532 | 0 | 1770 | 3539 | 1583 | 1323 | 1863 | 1583 | 1224 | 1662 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 35 | | | 35 | | | 45 | |
| Link Distance (ft) | | 444 | | | 444 | | | 649 | | | 551 | |
| Travel Time (s) | | 8.6 | | | 8.6 | | | 12.6 | | | 8.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 73 | 503 | 8 | 67 | 810 | 419 | 38 | 132 | 198 | 188 | 20 | 52 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 73 | 511 | 0 | 67 | 810 | 419 | 38 | 132 | 198 | 188 | 72 | 0 |
| Turn Type | Perm | NA | | Prot | NA | Perm | Perm | NA | Perm | Perm | NA | |
| Protected Phases | | 4 | | 3 | 8 | | | 2 | | | 6 | |
| Permitted Phases | 4 | | | | | 8 | 2 | | 2 | 6 | | |
| Detector Phase | 4 | 4 | | 3 | 8 | 8 | 2 | 2 | 2 | 6 | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | 10.0 | 10.0 | | 7.0 | 10.0 | 10.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | |
| Minimum Split (s) | 17.0 | 17.0 | | 14.0 | 17.0 | 17.0 | 14.0 | 14.0 | 14.0 | 14.0 | 14.0 | |
| Total Split (s) | 38.0 | 38.0 | | 16.0 | 54.0 | 54.0 | 36.0 | 36.0 | 36.0 | 36.0 | 36.0 | |
| Total Split (%) | 42.2% | 42.2% | | 17.8% | 60.0% | 60.0% | 40.0% | 40.0% | 40.0% | 40.0% | 40.0% | |
| Maximum Green (s) | 31.0 | 31.0 | | 9.0 | 47.0 | 47.0 | 29.0 | 29.0 | 29.0 | 29.0 | 29.0 | |
| Yellow Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | -2.0 | -2.0 | | -2.0 | -2.0 | -2.0 | -2.0 | -2.0 | -2.0 | -2.0 | -2.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | Lag | Lag | | Lead | | | | | | | | |
| Lead-Lag Optimize? | Yes | Yes | | Yes | | | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | C-Min | C-Min | | None | C-Min | C-Min | None | None | None | None | None | |
| Act Effct Green (s) | 46.0 | 46.0 | | 11.0 | 59.2 | 59.2 | 20.8 | 20.8 | 20.8 | 20.8 | 20.8 | |
| Actuated g/C Ratio | 0.51 | 0.51 | | 0.12 | 0.66 | 0.66 | 0.23 | 0.23 | 0.23 | 0.23 | 0.23 | |
| v/c Ratio | 0.22 | 0.28 | | 0.31 | 0.35 | 0.40 | 0.12 | 0.31 | 0.54 | 0.67 | 0.19 | |
| Control Delay | 7.1 | 5.3 | | 46.6 | 4.3 | 5.2 | 25.7 | 28.9 | 35.0 | 42.3 | 26.7 | |
| Queue Delay | 0.0 | 0.0 | | 0.0 | 0.1 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | 7.1 | 5.3 | | 46.6 | 4.4 | 5.4 | 25.7 | 28.9 | 35.0 | 42.3 | 26.7 | |
| LOS | A | A | | D | A | A | C | C | C | D | C | |
| Approach Delay | | 5.5 | | | 6.9 | | | 31.8 | | | 38.0 | |
| Approach LOS | | A | | | A | | | C | | | D | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 50th (ft) | 9 | 32 | | 35 | 36 | 36 | 17 | 62 | 99 | 97 | 33 | |
| Queue Length 95th (ft) | m16 | m51 | | 63 | 60 | 68 | 38 | 100 | 149 | 152 | 61 | |
| Internal Link Dist (ft) | | 364 | | | 364 | | | 569 | | | 471 | |
| Turn Bay Length (ft) | 175 | | | 150 | | 125 | 125 | | 125 | | | |
| Base Capacity (vph) | 330 | 1809 | | 232 | 2329 | 1042 | 455 | 641 | 545 | 421 | 572 | |
| Starvation Cap Reductn | 0 | 0 | | 0 | 514 | 172 | 0 | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | 0.22 | 0.28 | | 0.29 | 0.45 | 0.48 | 0.08 | 0.21 | 0.36 | 0.45 | 0.13 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 59 (66%), Referenced to phase 4:EBTL and 8:WBT, Start of Green | | | |
| Natural Cycle: 50 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.67 | | | |
| Intersection Signal Delay: 13.4 | | Intersection LOS: B | |
| Intersection Capacity Utilization 57.0% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 25: 12th St Dr NW & Clement Boulevard & Old Lenoir Rd



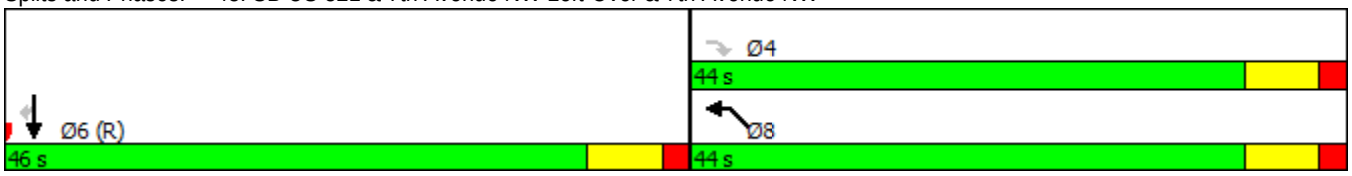
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 569 | 0 | 0 | 0 | 0 | 1307 | 114 | 75 | 0 |
| Future Volume (vph) | 0 | 0 | 569 | 0 | 0 | 0 | 0 | 1307 | 114 | 75 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 450 | | 0 | | 0 | 375 | | 250 | 0 | 0 |
| Storage Lanes | 0 | 0 | | 0 | | 0 | 0 | | 1 | 1 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.865 | | | | | | 0.850 | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 1596 | 0 | 0 | 0 | 0 | 3471 | 1583 | 1770 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 1596 | 0 | 0 | 0 | 0 | 3471 | 1583 | 1770 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 518 | | | | 815 | | | 1204 | | 221 | |
| Travel Time (s) | 10.1 | | | | 10.1 | | | 14.9 | | 6.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 2% | 2% | 2% | 2% | 4% | 2% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 632 | 0 | 0 | 0 | 0 | 1452 | 127 | 83 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 632 | 0 | 0 | 0 | 0 | 1452 | 127 | 83 | 0 |
| Turn Type | | | Perm | | | | | NA | Perm | Prot | |
| Protected Phases | | | | | | | | 6 | | 8 | |
| Permitted Phases | | | 4 | | | | | | 6 | | |
| Detector Phase | | | 4 | | | | | 6 | 6 | 8 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | | | | 14.0 | 14.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 21.0 | 21.0 | 14.0 | |
| Total Split (s) | | | 44.0 | | | | | 46.0 | 46.0 | 44.0 | |
| Total Split (%) | | | 48.9% | | | | | 51.1% | 51.1% | 48.9% | |
| Maximum Green (s) | | | 37.0 | | | | | 39.0 | 39.0 | 37.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | | | | -2.0 | -2.0 | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | |
| Recall Mode | | | None | | | | | C-Min | C-Min | None | |
| Act Effct Green (s) | | | 38.1 | | | | | 41.9 | 41.9 | 38.1 | |
| Actuated g/C Ratio | | | 0.42 | | | | | 0.47 | 0.47 | 0.42 | |
| v/c Ratio | | | 0.93 | | | | | 0.90 | 0.17 | 0.11 | |
| Control Delay | | | 48.0 | | | | | 21.8 | 8.3 | 15.0 | |
| Queue Delay | | | 0.0 | | | | | 0.0 | 0.0 | 0.0 | |
| Total Delay | | | 48.0 | | | | | 21.8 | 8.3 | 15.0 | |
| LOS | | | D | | | | | C | A | B | |
| Approach Delay | 48.0 | | | | | | | 20.7 | | 15.0 | |

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | D | | | | | | | C | | B | |
| Queue Length 50th (ft) | | | 327 | | | | | 424 | 27 | 31 | |
| Queue Length 95th (ft) | | | #549 | | | | | #541 | m33 | m32 | |
| Internal Link Dist (ft) | 438 | | | | 735 | | | 1124 | | 141 | |
| Turn Bay Length (ft) | | | 450 | | | | | | 250 | | |
| Base Capacity (vph) | | | 691 | | | | | 1614 | 736 | 767 | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Reduced v/c Ratio | | | 0.91 | | | | | 0.90 | 0.17 | 0.11 | |

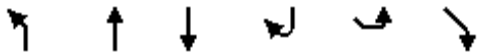
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 51 (57%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 75 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.93 | | | |
| Intersection Signal Delay: 28.0 | | Intersection LOS: C | |
| Intersection Capacity Utilization 79.7% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 43: SB US 321 & 7th Avenue NW Left-Over & 7th Avenue NW



| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 1818 | 0 | 0 | 367 | 0 |
| Future Volume (vph) | 0 | 1818 | 0 | 0 | 367 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 3438 | 0 | 0 | 1719 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 3438 | 0 | 0 | 1719 | 0 |
| Right Turn on Red | | | | No | No | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | 55 | 55 | | 25 | |
| Link Distance (ft) | | 897 | 685 | | 100 | |
| Travel Time (s) | | 11.1 | 8.5 | | 2.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 5% | 2% | 2% | 5% | 2% |
| Adj. Flow (vph) | 0 | 2020 | 0 | 0 | 408 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 2020 | 0 | 0 | 408 | 0 |
| Turn Type | | NA | | | Prot | |
| Protected Phases | | 2 | | | 4 | |
| Permitted Phases | | | | | | |
| Detector Phase | | 2 | | | 4 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 14.0 | | | 7.0 | |
| Minimum Split (s) | | 21.0 | | | 14.0 | |
| Total Split (s) | | 61.0 | | | 29.0 | |
| Total Split (%) | | 67.8% | | | 32.2% | |
| Maximum Green (s) | | 54.0 | | | 22.0 | |
| Yellow Time (s) | | 5.0 | | | 5.0 | |
| All-Red Time (s) | | 2.0 | | | 2.0 | |
| Lost Time Adjust (s) | | -2.0 | | | -2.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | |
| Recall Mode | | C-Min | | | None | |
| Act Effct Green (s) | | 56.4 | | | 23.6 | |
| Actuated g/C Ratio | | 0.63 | | | 0.26 | |
| v/c Ratio | | 0.94 | | | 0.90 | |
| Control Delay | | 25.8 | | | 45.6 | |
| Queue Delay | | 0.0 | | | 0.0 | |
| Total Delay | | 25.8 | | | 45.6 | |
| LOS | | C | | | D | |
| Approach Delay | | 25.8 | | | 45.6 | |
| Approach LOS | | C | | | D | |
| Queue Length 50th (ft) | | 502 | | | 232 | |
| Queue Length 95th (ft) | | #735 | | | m265 | |



| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | | 817 | 605 | | 20 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 2153 | | | 458 | |
| Starvation Cap Reductn | | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.94 | | | 0.89 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 44 (49%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 80 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.94 | | | |
| Intersection Signal Delay: 29.1 | | Intersection LOS: C | |
| Intersection Capacity Utilization 78.9% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 44: NB US 321 & 7th Avenue NW U-Turn

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 367 | 1509 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 367 | 1509 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 375 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 100 | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 771 | | | 815 | 100 | |
| Travel Time (s) | 9.6 | | | 10.1 | 1.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 5% | 5% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 408 | 1677 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 408 | 1677 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 71.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 75 | 2110 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 75 | 2110 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 100 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 0 | 0 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1770 | 3438 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1770 | 3438 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 685 | 1246 | | 221 | |
| Travel Time (s) | | 8.5 | 15.4 | | 2.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 5% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 83 | 2344 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 83 | 2344 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 140.6% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 466 | 0 | 1607 | 272 | 0 | 0 | 0 | 660 | 0 |
| Future Volume (vph) | 0 | 0 | 466 | 0 | 1607 | 272 | 0 | 0 | 0 | 660 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 250 | 0 | | 0 | | 0 | 0 | | 0 | 0 | 0 |
| Storage Lanes | 1 | 3 | | 0 | | 1 | 0 | | 0 | 2 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.76 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 3610 | 0 | 3438 | 1583 | 0 | 0 | 0 | 3433 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 3610 | 0 | 3438 | 1583 | 0 | 0 | 0 | 3433 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 444 | | | | 116 | | | 962 | | 235 | |
| Travel Time (s) | 8.6 | | | | 1.4 | | | 11.9 | | 6.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 5% | 2% | 4% | 4% | 2% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 518 | 0 | 1786 | 302 | 0 | 0 | 0 | 733 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 518 | 0 | 1786 | 302 | 0 | 0 | 0 | 733 | 0 |
| Turn Type | | | Prot | | NA | Free | | | | Prot | |
| Protected Phases | | | 8 | | 2 | | | | | 8 | |
| Permitted Phases | | | 8 | | | Free | | | | 8 | |
| Detector Phase | | | 8 | | 2 | | | | | 8 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 14.0 | | | | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 21.0 | | | | | 14.0 | |
| Total Split (s) | | | 29.0 | | 61.0 | | | | | 29.0 | |
| Total Split (%) | | | 32.2% | | 67.8% | | | | | 32.2% | |
| Maximum Green (s) | | | 22.0 | | 54.0 | | | | | 22.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | | | | | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | -2.0 | | | | | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | | | | | 3.0 | |
| Recall Mode | | | None | | C-Min | | | | | None | |
| Act Effct Green (s) | | | 23.8 | | 56.2 | 90.0 | | | | 23.8 | |
| Actuated g/C Ratio | | | 0.26 | | 0.62 | 1.00 | | | | 0.26 | |
| v/c Ratio | | | 0.54 | | 0.83 | 0.19 | | | | 0.81 | |
| Control Delay | | | 21.7 | | 6.1 | 0.1 | | | | 35.0 | |
| Queue Delay | | | 0.0 | | 0.0 | 0.0 | | | | 0.0 | |
| Total Delay | | | 21.7 | | 6.1 | 0.1 | | | | 35.0 | |
| LOS | | | C | | A | A | | | | C | |
| Approach Delay | 21.7 | | | | 5.3 | | | | | 35.0 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | C | | | | A | | | | | C | |
| Queue Length 50th (ft) | | | 114 | | 109 | 0 | | | | 203 | |
| Queue Length 95th (ft) | | | 103 | | 126 | m0 | | | | 246 | |
| Internal Link Dist (ft) | 364 | | | | 36 | | | 882 | | 155 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 974 | | 2157 | 1583 | | | | 926 | |
| Starvation Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Reduced v/c Ratio | | | 0.53 | | 0.83 | 0.19 | | | | 0.79 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 78 (87%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.83 | | | |
| Intersection Signal Delay: 14.3 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 61: NB US 321 & Clement Boulevard & Clement Boulevard Left-Over

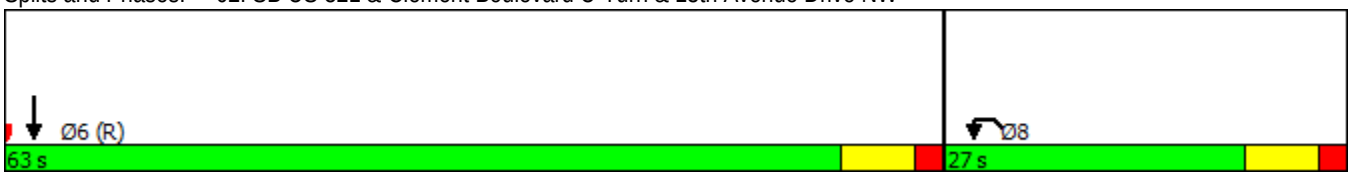
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 1645 | 46 | 143 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 1645 | 46 | 143 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.865 | | | | | 0.996 | | | | |
| Flt Protected | | | | | | | | | | 0.950 | | |
| Satd. Flow (prot) | 0 | 0 | 1565 | 0 | 0 | 0 | 0 | 4920 | 0 | 1719 | 0 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | | |
| Satd. Flow (perm) | 0 | 0 | 1565 | 0 | 0 | 0 | 0 | 4920 | 0 | 1719 | 0 | 0 |
| Right Turn on Red | | | No | | | No | | | No | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | | 25 | |
| Link Distance (ft) | 391 | | | | 835 | | | 456 | | | 117 | |
| Travel Time (s) | 7.6 | | | | 10.4 | | | 5.7 | | | 3.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 5% | 2% | 2% | 2% | 2% | 5% | 5% | 5% | 2% | 2% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 |
| Adj. Flow (vph) | 0 | 0 | 34 | 0 | 0 | 0 | 0 | 1828 | 51 | 159 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 34 | 0 | 0 | 0 | 0 | 1879 | 0 | 159 | 0 | 0 |
| Turn Type | | | Free | | | | | NA | | Prot | | |
| Protected Phases | | | | | | | | 6 | | 8 | | |
| Permitted Phases | | | Free | | | | | | | | | |
| Detector Phase | | | | | | | | 6 | | 8 | | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | | | | | | | 14.0 | | 7.0 | | |
| Minimum Split (s) | | | | | | | | 21.0 | | 14.0 | | |
| Total Split (s) | | | | | | | | 63.0 | | 27.0 | | |
| Total Split (%) | | | | | | | | 70.0% | | 30.0% | | |
| Maximum Green (s) | | | | | | | | 56.0 | | 20.0 | | |
| Yellow Time (s) | | | | | | | | 5.0 | | 5.0 | | |
| All-Red Time (s) | | | | | | | | 2.0 | | 2.0 | | |
| Lost Time Adjust (s) | | | | | | | | -2.0 | | -2.0 | | |
| Total Lost Time (s) | | | | | | | | 5.0 | | 5.0 | | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | | | | | | | 3.0 | | 3.0 | | |
| Recall Mode | | | | | | | | C-Min | | None | | |
| Act Effct Green (s) | | | 90.0 | | | | | 64.4 | | 15.6 | | |
| Actuated g/C Ratio | | | 1.00 | | | | | 0.72 | | 0.17 | | |
| v/c Ratio | | | 0.02 | | | | | 0.53 | | 0.54 | | |
| Control Delay | | | 0.0 | | | | | 7.0 | | 42.2 | | |
| Queue Delay | | | 0.0 | | | | | 0.0 | | 0.0 | | |
| Total Delay | | | 0.0 | | | | | 7.0 | | 42.2 | | |
| LOS | | | A | | | | | A | | D | | |
| Approach Delay | | | | | | | | 7.0 | | | 42.2 | |
| Approach LOS | | | | | | | | A | | | D | |
| Queue Length 50th (ft) | | | 0 | | | | | 151 | | 94 | | |

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 95th (ft) | | | 0 | | | | | 230 | | m105 | | |
| Internal Link Dist (ft) | 311 | | | | 755 | | | 376 | | | 37 | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | | | 1565 | | | | | 3522 | | 420 | | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | | 0 | | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | | 0 | | |
| Storage Cap Reductn | | | 0 | | | | | 0 | | 0 | | |
| Reduced v/c Ratio | | | 0.02 | | | | | 0.53 | | 0.38 | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 32 (36%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 40 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.54 | | | |
| Intersection Signal Delay: 9.6 | | Intersection LOS: A | |
| Intersection Capacity Utilization 48.2% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 62: SB US 321 & Clement Boulevard U-Turn & 13th Avenue Drive NW

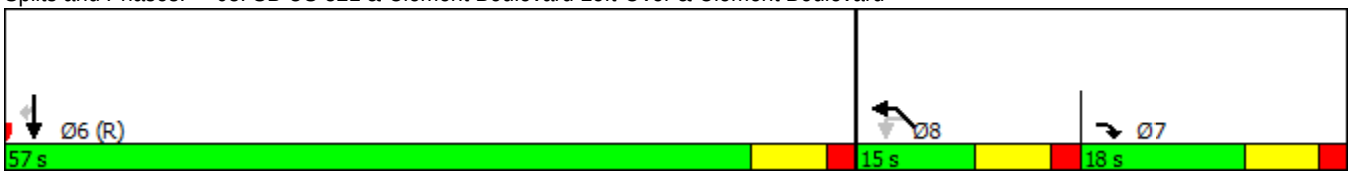


| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 246 | 0 | 0 | 0 | 0 | 1491 | 168 | 138 | 61 | 0 |
| Future Volume (vph) | 0 | 0 | 246 | 0 | 0 | 0 | 0 | 1491 | 168 | 138 | 61 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 0.95 | 0.95 | 1.00 |
| Frt | | | 0.850 | | | | | | 0.850 | | | |
| Flt Protected | | | | | | | | | | 0.950 | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2787 | 0 | 0 | 0 | 0 | 3438 | 1583 | 1681 | 1681 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2787 | 0 | 0 | 0 | 0 | 3438 | 1583 | 1681 | 1681 | 0 |
| Right Turn on Red | | | No | | | No | | | No | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | | 25 | |
| Link Distance (ft) | 749 | | | | 781 | | | 222 | | | 128 | |
| Travel Time (s) | 14.6 | | | | 9.7 | | | 2.8 | | | 3.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 5% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 273 | 0 | 0 | 0 | 0 | 1657 | 187 | 153 | 68 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | 28% | | |
| Lane Group Flow (vph) | 0 | 0 | 273 | 0 | 0 | 0 | 0 | 1657 | 187 | 110 | 111 | 0 |
| Turn Type | | | Prot | | | | | NA | Perm | Perm | Prot | |
| Protected Phases | | | 7 | | | | | 6 | | | 8 | |
| Permitted Phases | | | | | | | | | 6 | 8 | | |
| Detector Phase | | | 7 | | | | | 6 | 6 | 8 | 8 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | | | | 14.0 | 14.0 | 7.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 21.0 | 21.0 | 14.0 | 14.0 | |
| Total Split (s) | | | 18.0 | | | | | 57.0 | 57.0 | 15.0 | 15.0 | |
| Total Split (%) | | | 20.0% | | | | | 63.3% | 63.3% | 16.7% | 16.7% | |
| Maximum Green (s) | | | 11.0 | | | | | 50.0 | 50.0 | 8.0 | 8.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | | | | -2.0 | -2.0 | -2.0 | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | | | Lag | | | | | | | Lead | Lead | |
| Lead-Lag Optimize? | | | Yes | | | | | | | Yes | Yes | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | 3.0 | |
| Recall Mode | | | None | | | | | C-Min | C-Min | None | None | |
| Act Effct Green (s) | | | 12.8 | | | | | 52.3 | 52.3 | 9.9 | 9.9 | |
| Actuated g/C Ratio | | | 0.14 | | | | | 0.58 | 0.58 | 0.11 | 0.11 | |
| v/c Ratio | | | 0.69 | | | | | 0.83 | 0.20 | 0.59 | 0.60 | |
| Control Delay | | | 46.7 | | | | | 16.1 | 7.9 | 54.0 | 54.2 | |
| Queue Delay | | | 0.0 | | | | | 0.0 | 0.0 | 0.0 | 0.0 | |
| Total Delay | | | 46.7 | | | | | 16.1 | 7.9 | 54.0 | 54.2 | |
| LOS | | | D | | | | | B | A | D | D | |
| Approach Delay | 46.7 | | | | | | | 15.3 | | | 54.1 | |
| Approach LOS | D | | | | | | | B | | | D | |
| Queue Length 50th (ft) | | | 84 | | | | | 394 | 30 | 68 | 69 | |
| Queue Length 95th (ft) | | | 131 | | | | | 274 | 65 | m80 | m80 | |

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 669 | | | | 701 | | | 142 | | | 48 | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | | | 402 | | | | | 2003 | 922 | 188 | 188 | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | 0 | |
| Reduced v/c Ratio | | | 0.68 | | | | | 0.83 | 0.20 | 0.59 | 0.59 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 16 (18%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 65 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.83 | | | |
| Intersection Signal Delay: 22.6 | | Intersection LOS: C | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 63: SB US 321 & Clement Boulevard Left-Over & Clement Boulevard



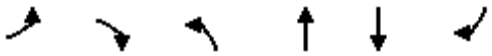
| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL2 | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 190 | 0 | 1789 | 249 | 0 | 0 | 0 | 207 | 60 | 0 |
| Future Volume (vph) | 0 | 0 | 190 | 0 | 1789 | 249 | 0 | 0 | 0 | 207 | 60 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 250 | | 0 | | 375 | 0 | | 0 | | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 1 | 0 | | 0 | | 1 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.982 | | | | | | | |
| Flt Protected | | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2733 | 0 | 4868 | 0 | 0 | 0 | 0 | 0 | 1730 | 0 |
| Flt Permitted | | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2733 | 0 | 4868 | 0 | 0 | 0 | 0 | 0 | 1730 | 0 |
| Right Turn on Red | | | No | | | No | | | No | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | 25 | | | | 55 | | | 55 | | | 25 | |
| Link Distance (ft) | 322 | | | | 1246 | | | 837 | | | 179 | |
| Travel Time (s) | 8.8 | | | | 15.4 | | | 10.4 | | | 4.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 2% | 5% | 2% | 2% | 2% | 2% | 5% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 211 | 0 | 1988 | 277 | 0 | 0 | 0 | 230 | 67 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 211 | 0 | 2265 | 0 | 0 | 0 | 0 | 0 | 297 | 0 |
| Turn Type | | | Prot | | NA | | | | | Prot | Prot | |
| Protected Phases | | | 3 | | 2 | | | | | 4 | 4 | |
| Permitted Phases | | | | | | | | | | | | |
| Detector Phase | | | 3 | | 2 | | | | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 14.0 | | | | | 7.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 21.0 | | | | | 14.0 | 14.0 | |
| Total Split (s) | | | 14.0 | | 52.0 | | | | | 24.0 | 24.0 | |
| Total Split (%) | | | 15.6% | | 57.8% | | | | | 26.7% | 26.7% | |
| Maximum Green (s) | | | 7.0 | | 45.0 | | | | | 17.0 | 17.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | | | | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | -2.0 | | | | | | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | | | | | | 5.0 | |
| Lead/Lag | | | Lead | | | | | | | Lag | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | | | | Yes | Yes | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | |
| Recall Mode | | | None | | C-Min | | | | | None | None | |
| Act Effct Green (s) | | | 9.0 | | 47.5 | | | | | | 18.5 | |
| Actuated g/C Ratio | | | 0.10 | | 0.53 | | | | | | 0.21 | |
| v/c Ratio | | | 0.77 | | 0.88 | | | | | | 0.84 | |
| Control Delay | | | 59.7 | | 13.8 | | | | | | 41.0 | |
| Queue Delay | | | 0.0 | | 0.0 | | | | | | 0.0 | |
| Total Delay | | | 59.7 | | 13.8 | | | | | | 41.0 | |
| LOS | | | E | | B | | | | | | D | |
| Approach Delay | 59.7 | | | | 13.8 | | | | | | 41.0 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL2 | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | E | | | | B | | | | | | D | |
| Queue Length 50th (ft) | | | 67 | | 319 | | | | | | 151 | |
| Queue Length 95th (ft) | | | #128 | | m355 | | | | | | m#214 | |
| Internal Link Dist (ft) | 242 | | | | 1166 | | | 757 | | | 99 | |
| Turn Bay Length (ft) | | | 250 | | | | | | | | | |
| Base Capacity (vph) | | | 273 | | 2570 | | | | | | 365 | |
| Starvation Cap Reductn | | | 0 | | 0 | | | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | | | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | | | | | | 0 | |
| Reduced v/c Ratio | | | 0.77 | | 0.88 | | | | | | 0.81 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 76 (84%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 80 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.88 | | | |
| Intersection Signal Delay: 20.2 | | Intersection LOS: C | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 64: NB US 321 & 9th Ave NW & Clement Boulevard



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 143 | 2525 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 143 | 2525 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Link Speed (mph) | 25 | | | 55 | 55 | |
| Link Distance (ft) | 117 | | | 962 | 471 | |
| Travel Time (s) | 3.2 | | | 11.9 | 5.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 5% | 5% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 159 | 2806 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 159 | 2806 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |

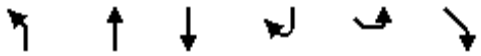
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 73.1% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 660 | 1659 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 660 | 1659 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 225 | | 0 | 0 |
| Storage Lanes | | 0 | 2 | | 0 | 0 |
| Taper Length (ft) | | | 100 | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 3433 | 4940 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 3433 | 4940 | 0 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 222 | | | 835 | 235 | |
| Travel Time (s) | 2.8 | | | 10.4 | 2.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 5% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 733 | 1843 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 733 | 1843 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 35.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

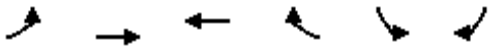
| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 267 | 1483 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 267 | 1483 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 175 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 100 | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 1204 | | | 781 | 179 | |
| Travel Time (s) | 14.9 | | | 9.7 | 2.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 5% | 5% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 297 | 1648 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 297 | 1648 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 44.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

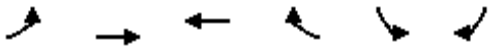


| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 199 | 1879 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 199 | 1879 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 375 | | | 0 | 0 | 0 |
| Storage Lanes | 2 | | | 0 | 0 | 0 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 3433 | 4940 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 3433 | 4940 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 837 | 116 | | 128 | |
| Travel Time (s) | | 10.4 | 1.4 | | 1.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 5% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 221 | 2088 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 221 | 2088 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 39.6% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



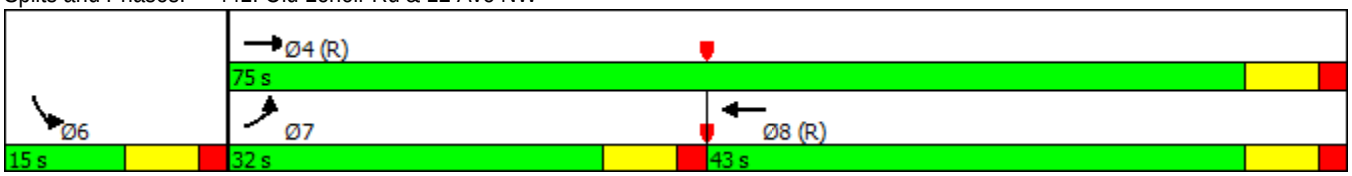
| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 535 | 269 | 650 | 115 | 45 | 509 |
| Future Volume (vph) | 535 | 269 | 650 | 115 | 45 | 509 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 200 | | | 0 | 0 | 300 |
| Storage Lanes | 2 | | | 0 | 1 | 1 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 0.97 | 0.95 | 0.95 | 0.95 | 1.00 | 1.00 |
| Frt | | | 0.977 | | | 0.850 |
| Flt Protected | 0.950 | | | | 0.950 | |
| Satd. Flow (prot) | 3433 | 3539 | 3458 | 0 | 1770 | 1583 |
| Flt Permitted | 0.950 | | | | 0.950 | |
| Satd. Flow (perm) | 3433 | 3539 | 3458 | 0 | 1770 | 1583 |
| Right Turn on Red | | | | No | | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | 45 | 45 | | 35 | |
| Link Distance (ft) | | 444 | 1015 | | 470 | |
| Travel Time (s) | | 6.7 | 15.4 | | 9.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 594 | 299 | 722 | 128 | 50 | 566 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 594 | 299 | 850 | 0 | 50 | 566 |
| Turn Type | Prot | NA | NA | | Prot | Free |
| Protected Phases | 7 | 4 | 8 | | 6 | |
| Permitted Phases | | | | | | Free |
| Detector Phase | 7 | 4 | 8 | | 6 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 12.0 | 12.0 | | 7.0 | |
| Minimum Split (s) | 14.0 | 19.0 | 19.0 | | 14.0 | |
| Total Split (s) | 32.0 | 75.0 | 43.0 | | 15.0 | |
| Total Split (%) | 35.6% | 83.3% | 47.8% | | 16.7% | |
| Maximum Green (s) | 25.0 | 68.0 | 36.0 | | 8.0 | |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | 2.0 | |
| Lost Time Adjust (s) | -2.0 | -2.0 | -2.0 | | -2.0 | |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | 5.0 | |
| Lead/Lag | Lead | | Lag | | | |
| Lead-Lag Optimize? | Yes | | Yes | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | 3.0 | |
| Recall Mode | None | C-Min | C-Min | | None | |
| Act Effct Green (s) | 22.5 | 77.7 | 48.2 | | 9.9 | 90.0 |
| Actuated g/C Ratio | 0.25 | 0.86 | 0.54 | | 0.11 | 1.00 |
| v/c Ratio | 0.69 | 0.10 | 0.46 | | 0.26 | 0.36 |
| Control Delay | 24.7 | 2.8 | 16.1 | | 40.1 | 0.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | | 0.0 | 0.0 |
| Total Delay | 24.7 | 2.8 | 16.1 | | 40.1 | 0.6 |
| LOS | C | A | B | | D | A |
| Approach Delay | | 17.4 | 16.1 | | 3.8 | |
| Approach LOS | | B | B | | A | |



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Queue Length 50th (ft) | 105 | 17 | 171 | | 27 | 0 |
| Queue Length 95th (ft) | 157 | 44 | 251 | | 61 | 0 |
| Internal Link Dist (ft) | | 364 | 935 | | 390 | |
| Turn Bay Length (ft) | 200 | | | | | 300 |
| Base Capacity (vph) | 1029 | 3068 | 1855 | | 202 | 1583 |
| Starvation Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | | 0 | 0 |
| Reduced v/c Ratio | 0.58 | 0.10 | 0.46 | | 0.25 | 0.36 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 31 (34%), Referenced to phase 4:EBT and 8:WBT, Start of Green | | | |
| Natural Cycle: 55 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.69 | | | |
| Intersection Signal Delay: 13.4 | | Intersection LOS: B | |
| Intersection Capacity Utilization 55.2% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 441: Old Lenoir Rd & 12 Ave NW



## Summary of All Intervals

| Start Time | 4:50 |
|---|---|
| End Time | 6:00 |
| Total Time (min) | 70 |
| Time Recorded (min) | 60 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 7491 |
| Vehs Exited | 7461 |
| Starting Vehs | 226 |
| Ending Vehs | 256 |
| Travel Distance (mi) | 4664 |
| Travel Time (hr) | 248.2 |
| Total Delay (hr) | 137.0 |
| Total Stops | 9126 |
| Fuel Used (gal) | 227.4 |

## Interval #0 Information Seeding

| Start Time | 4:50 |
|---|---|
| End Time | 5:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 5:00 |
|---|---|
| End Time | 6:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 7491 |
|---|---|
| Vehs Exited | 7461 |
| Starting Vehs | 226 |
| Ending Vehs | 256 |
| Travel Distance (mi) | 4664 |
| Travel Time (hr) | 248.2 |
| Total Delay (hr) | 137.0 |
| Total Stops | 9126 |
| Fuel Used (gal) | 227.4 |

## Intersection: 25: 12th St Dr NW & Clement Boulevard & Old Lenoir Rd

| Movement | EB | EB | EB | WB | WB | WB | WB | NB | NB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | T | TR | L | T | T | R | L | T | L | TR |
| Maximum Queue (ft) | 74 | 235 | 118 | 102 | 160 | 180 | 151 | 88 | 115 | 156 | 65 |
| Average Queue (ft) | 39 | 90 | 29 | 27 | 68 | 68 | 58 | 30 | 57 | 98 | 27 |
| 95th Queue (ft) | 74 | 197 | 84 | 66 | 135 | 136 | 126 | 73 | 101 | 154 | 54 |
| Link Distance (ft) | | 332 | 332 | | 377 | 377 | | | 584 | 490 | |
| Upstream Blk Time (%) | | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | | |
| Storage Bay Dist (ft) | 175 | | | 150 | | | 125 | 125 | | | 450 |
| Storage Blk Time (%) | | 1 | | | 0 | 1 | 1 | | 0 | | |
| Queuing Penalty (veh) | | 1 | | | 0 | 5 | 3 | | 0 | | |

## Intersection: 43: SB US 321 & 7th Avenue NW Left-Over & 7th Avenue NW

| Movement | EB | SB | SB | SB | NW |
|---|---|---|---|---|---|
| Directions Served | > | T | T | R | L |
| Maximum Queue (ft) | 469 | 280 | 250 | 111 | 91 |
| Average Queue (ft) | 290 | 157 | 140 | 47 | 31 |
| 95th Queue (ft) | 443 | 249 | 221 | 97 | 71 |
| Link Distance (ft) | 454 | 1132 | 1132 | | 164 |
| Upstream Blk Time (%) | 1 | | | | |
| Queuing Penalty (veh) | 0 | | | | |
| Storage Bay Dist (ft) | | | | 250 | |
| Storage Blk Time (%) | | | 0 | | |
| Queuing Penalty (veh) | | | 0 | | |

## Intersection: 44: NB US 321 & 7th Avenue NW U-Turn

| Movement | NB | NB | SE |
|---|---|---|---|
| Directions Served | T | T | L |
| Maximum Queue (ft) | 436 | 422 | 142 |
| Average Queue (ft) | 244 | 241 | 109 |
| 95th Queue (ft) | 364 | 381 | 124 |
| Link Distance (ft) | 864 | 864 | 48 |
| Upstream Blk Time (%) | | | 63 |
| Queuing Penalty (veh) | | | 230 |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 47: SB US 321 & 7th Avenue NW U-Turn

| Movement | SB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 370 |
| Average Queue (ft) | 159 |
| 95th Queue (ft) | 282 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 375 |
| Storage Blk Time (%) | 0 |
| Queuing Penalty (veh) | 2 |

## Intersection: 48: NB US 321 & 7th Avenue NW Left-Over

| Movement | |
|---|---|
| Directions Served | |
| Maximum Queue (ft) | |
| Average Queue (ft) | |
| 95th Queue (ft) | |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 61: NB US 321 & Clement Boulevard & Clement Boulevard Left-Over

| Movement | WB | WB | WB | NB | NB | NB | SE | SE |
|---|---|---|---|---|---|---|---|---|
| Directions Served | > | > | > | T | T | R | L | L |
| Maximum Queue (ft) | 140 | 181 | 200 | 147 | 136 | 114 | 192 | 194 |
| Average Queue (ft) | 59 | 93 | 90 | 106 | 109 | 25 | 165 | 170 |
| 95th Queue (ft) | 132 | 154 | 167 | 137 | 135 | 91 | 194 | 190 |
| Link Distance (ft) | | 332 | 332 | 12 | 12 | 12 | 62 | 62 |
| Upstream Blk Time (%) | | | | 31 | 35 | | 60 | 58 |
| Queuing Penalty (veh) | | | | 194 | 218 | | 198 | 191 |
| Storage Bay Dist (ft) | 250 | | | | | | | |
| Storage Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |

## Intersection: 62: SB US 321 & Clement Boulevard U-Turn & 13th Avenue Drive NW

| Movement | SB | SB | SB | NW |
|---|---|---|---|---|
| Directions Served | T | T | TR | < |
| Maximum Queue (ft) | 422 | 287 | 55 | 134 |
| Average Queue (ft) | 213 | 120 | 26 | 94 |
| 95th Queue (ft) | 368 | 258 | 56 | 150 |
| Link Distance (ft) | 446 | 446 | 446 | 59 |
| Upstream Blk Time (%) | | | | 34 |
| Queuing Penalty (veh) | | | | 49 |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 63: SB US 321 & Clement Boulevard Left-Over & Clement Boulevard

| Movement | EB | EB | SB | SB | SB | NW | NW |
|---|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | R | < | <L |
| Maximum Queue (ft) | 169 | 134 | 224 | 199 | 116 | 114 | 137 |
| Average Queue (ft) | 109 | 50 | 188 | 180 | 42 | 60 | 85 |
| 95th Queue (ft) | 171 | 125 | 237 | 233 | 89 | 100 | 127 |
| Link Distance (ft) | 671 | 671 | 86 | 86 | 86 | 43 | 43 |
| Upstream Blk Time (%) | | | 28 | 25 | 1 | 24 | 51 |
| Queuing Penalty (veh) | | | 153 | 136 | 4 | 24 | 51 |
| Storage Bay Dist (ft) | | | | | | | |
| Storage Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |

## Intersection: 64: NB US 321 & 9th Ave NW & Clement Boulevard

| Movement | WB | WB | NB | NB | NB | SE |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | TR | <L |
| Maximum Queue (ft) | 287 | 258 | 284 | 298 | 268 | 184 |
| Average Queue (ft) | 144 | 64 | 190 | 214 | 169 | 143 |
| 95th Queue (ft) | 248 | 201 | 275 | 295 | 249 | 209 |
| Link Distance (ft) | 258 | | 1191 | 1191 | | 110 |
| Upstream Blk Time (%) | 3 | 0 | | | | 29 |
| Queuing Penalty (veh) | 0 | 0 | | | | 76 |
| Storage Bay Dist (ft) | | 250 | | | 375 | |
| Storage Blk Time (%) | 3 | 0 | | | | |
| Queuing Penalty (veh) | 3 | 0 | | | | |

## Intersection: 65: NB US 321 & Clement Boulevard U-Turn

| Movement | NB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 84 |
| Average Queue (ft) | 12 |
| 95th Queue (ft) | 49 |
| Link Distance (ft) | 815 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 66: SB US 321 & Clement Boulevard Left-Over

| Movement | SB | SB | SB | SB |
|---|---|---|---|---|
| Directions Served | L | L | T | T |
| Maximum Queue (ft) | 214 | 220 | 215 | 210 |
| Average Queue (ft) | 63 | 58 | 48 | 50 |
| 95th Queue (ft) | 166 | 157 | 139 | 146 |
| Link Distance (ft) | | | 790 | 790 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | 225 | 225 | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 67: SB US 321 & Clement Boulevard

| Movement | SB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 157 |
| Average Queue (ft) | 25 |
| 95th Queue (ft) | 95 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 175 |
| Storage Blk Time (%) | 1 |
| Queuing Penalty (veh) | 5 |

## Intersection: 68: NB US 321 & Clement Boulevard Left-Over

| Movement | NB | NB | NB | NB |
|---|---|---|---|---|
| Directions Served | L | T | T | T |
| Maximum Queue (ft) | 40 | 351 | 368 | 160 |
| Average Queue (ft) | 3 | 115 | 127 | 51 |
| 95th Queue (ft) | 19 | 283 | 297 | 126 |
| Link Distance (ft) | | 768 | 768 | 768 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | 375 | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 441: Old Lenoir Rd & 12 Ave NW

| Movement | EB | EB | EB | EB | WB | WB | SB | SB |
|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | T | T | T | TR | L | R |
| Maximum Queue (ft) | 249 | 299 | 384 | 92 | 206 | 247 | 163 | 258 |
| Average Queue (ft) | 130 | 162 | 26 | 19 | 111 | 125 | 30 | 66 |
| 95th Queue (ft) | 233 | 254 | 177 | 57 | 179 | 221 | 88 | 186 |
| Link Distance (ft) | | | 377 | 377 | 948 | 948 | 396 | |
| Upstream Blk Time (%) | | | 0 | | | | | |
| Queuing Penalty (veh) | | | 2 | | | | | |
| Storage Bay Dist (ft) | 200 | 200 | | | | | | 300 |
| Storage Blk Time (%) | 1 | 5 | | | | | | |
| Queuing Penalty (veh) | 1 | 6 | | | | | | |

## Network Summary

Network wide Queuing Penalty: 1554

APPENDIX J

# 2040 Build Alternative Grace Chapel Road – Superstreet Synchro & SimTraffic Reports

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 21 | 3112 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 21 | 3112 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 75 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 100 | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1770 | 5085 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1770 | 5085 | 0 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 1257 | | | 483 | 113 | |
| Travel Time (s) | 15.6 | | | 6.0 | 1.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 0 | 23 | 3458 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 23 | 3458 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 72.7% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

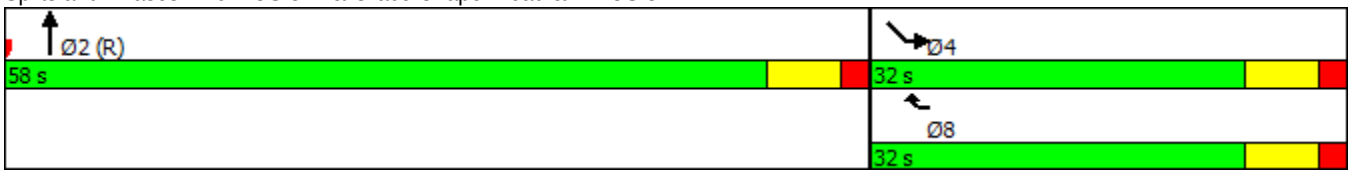
| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 454 | 0 | 1829 | 179 | 0 | 0 | 0 | 21 | 0 |
| Future Volume (vph) | 0 | 0 | 454 | 0 | 1829 | 179 | 0 | 0 | 0 | 21 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 300 | | 300 | | 400 | 0 | | 0 | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 1 | 0 | | 0 | 1 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2760 | 0 | 4988 | 1568 | 0 | 0 | 0 | 1770 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2760 | 0 | 4988 | 1568 | 0 | 0 | 0 | 1770 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 982 | | | | 1247 | | | 484 | | 113 | |
| Travel Time (s) | 19.1 | | | | 15.5 | | | 6.0 | | 3.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 2% | 3% | 2% | 4% | 3% | 4% | 4% | 2% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 504 | 0 | 2032 | 199 | 0 | 0 | 0 | 23 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 504 | 0 | 2032 | 199 | 0 | 0 | 0 | 23 | 0 |
| Turn Type | | | Prot | | NA | Free | | | | Prot | |
| Protected Phases | | | 8 | | 2 | | | | | 4 | |
| Permitted Phases | | | | | | Free | | | | | |
| Detector Phase | | | 8 | | 2 | | | | | 4 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 14.0 | | | | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 21.0 | | | | | 14.0 | |
| Total Split (s) | | | 32.0 | | 58.0 | | | | | 32.0 | |
| Total Split (%) | | | 35.6% | | 64.4% | | | | | 35.6% | |
| Maximum Green (s) | | | 25.0 | | 51.0 | | | | | 25.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | | | | | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | -2.0 | | | | | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | | | | | 3.0 | |
| Recall Mode | | | None | | C-Min | | | | | None | |
| Act Effct Green (s) | | | 23.1 | | 56.9 | 90.0 | | | | 23.1 | |
| Actuated g/C Ratio | | | 0.26 | | 0.63 | 1.00 | | | | 0.26 | |
| v/c Ratio | | | 0.71 | | 0.64 | 0.13 | | | | 0.05 | |
| Control Delay | | | 36.2 | | 12.0 | 0.2 | | | | 26.0 | |
| Queue Delay | | | 0.0 | | 0.0 | 0.0 | | | | 0.0 | |
| Total Delay | | | 36.2 | | 12.0 | 0.2 | | | | 26.0 | |
| LOS | | | D | | B | A | | | | C | |
| Approach Delay | 36.2 | | | | 10.9 | | | | | 26.0 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | D | | | | B | | | | | C | |
| Queue Length 50th (ft) | | | 147 | | 239 | 0 | | | | 10 | |
| Queue Length 95th (ft) | | | 196 | | 324 | 0 | | | | m10 | |
| Internal Link Dist (ft) | 902 | | | | 1167 | | | 404 | | 33 | |
| Turn Bay Length (ft) | | | 300 | | | 400 | | | | | |
| Base Capacity (vph) | | | 828 | | 3155 | 1568 | | | | 531 | |
| Starvation Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Reduced v/c Ratio | | | 0.61 | | 0.64 | 0.13 | | | | 0.04 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green, Master Intersection | | | |
| Natural Cycle: 45 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.71 | | | |
| Intersection Signal Delay: 15.7 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 91: US 321 & Grace Chapel Road & NB US 321

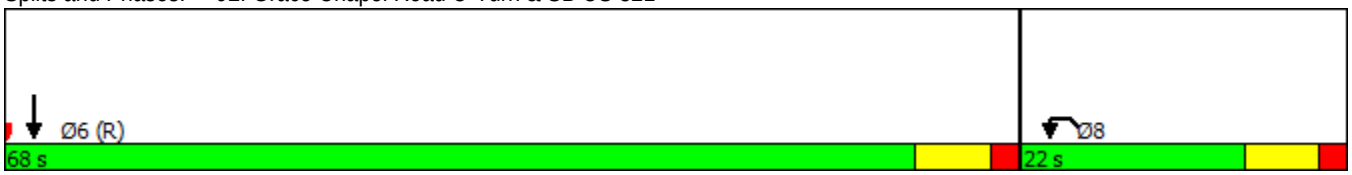


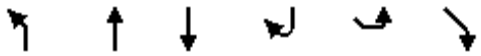
| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 2713 | 420 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 2713 | 420 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 0.97 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 4988 | 3367 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 4988 | 3367 | 0 |
| Right Turn on Red | | No | | | No | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 55 | | | 55 | 25 | |
| Link Distance (ft) | 483 | | | 1103 | 111 | |
| Travel Time (s) | 6.0 | | | 13.7 | 3.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 4% | 2% |
| Adj. Flow (vph) | 0 | 0 | 0 | 3014 | 467 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 3014 | 467 | 0 |
| Turn Type | | | | NA | Prot | |
| Protected Phases | | | | 6 | 8 | |
| Permitted Phases | | | | | | |
| Detector Phase | | | | 6 | 8 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | | | 14.0 | 7.0 | |
| Minimum Split (s) | | | | 21.0 | 14.0 | |
| Total Split (s) | | | | 68.0 | 22.0 | |
| Total Split (%) | | | | 75.6% | 24.4% | |
| Maximum Green (s) | | | | 61.0 | 15.0 | |
| Yellow Time (s) | | | | 5.0 | 5.0 | |
| All-Red Time (s) | | | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | | -2.0 | -2.0 | |
| Total Lost Time (s) | | | | 5.0 | 5.0 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | |
| Recall Mode | | | | C-Min | None | |
| Act Effct Green (s) | | | | 63.4 | 16.6 | |
| Actuated g/C Ratio | | | | 0.70 | 0.18 | |
| v/c Ratio | | | | 0.86 | 0.75 | |
| Control Delay | | | | 13.4 | 36.1 | |
| Queue Delay | | | | 0.0 | 0.0 | |
| Total Delay | | | | 13.4 | 36.1 | |
| LOS | | | | B | D | |
| Approach Delay | | | | 13.4 | 36.1 | |
| Approach LOS | | | | B | D | |
| Queue Length 50th (ft) | | | | 407 | 134 | |
| Queue Length 95th (ft) | | | | 489 | 166 | |

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 403 | | | 1023 | 31 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | | | 3512 | 635 | |
| Starvation Cap Reductn | | | | 0 | 0 | |
| Spillback Cap Reductn | | | | 0 | 0 | |
| Storage Cap Reductn | | | | 0 | 0 | |
| Reduced v/c Ratio | | | | 0.86 | 0.74 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 47 (52%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.86 | | | |
| Intersection Signal Delay: 16.5 | | Intersection LOS: B | |
| Intersection Capacity Utilization 95.9% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

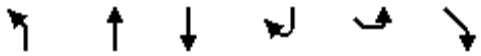
Splits and Phases: 92: Grace Chapel Road U-Turn & SB US 321





| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 2008 | 0 | 0 | 4 | 0 |
| Future Volume (vph) | 0 | 2008 | 0 | 0 | 4 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 4988 | 0 | 0 | 1736 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 4988 | 0 | 0 | 1736 | 0 |
| Link Speed (mph) | | 55 | 55 | | 25 | |
| Link Distance (ft) | | 578 | 1247 | | 112 | |
| Travel Time (s) | | 7.2 | 15.5 | | 3.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 4% | 2% | 2% | 4% | 2% |
| Adj. Flow (vph) | 0 | 2231 | 0 | 0 | 4 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 2231 | 0 | 0 | 4 | 0 |
| Sign Control | | Free | Free | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 63.5% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



| Movement | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 2008 | 0 | 0 | 4 | 0 |
| Future Volume (Veh/h) | 0 | 2008 | 0 | 0 | 4 | 0 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 2231 | 0 | 0 | 4 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | 1247 | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 0 | | | | 744 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | | | | 744 | 0 |
| tC, single (s) | 4.1 | | | | 6.9 | 6.9 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 100 | | | | 99 | 100 |
| cM capacity (veh/h) | 1622 | | | | 346 | 1084 |

| Direction, Lane # | NB 1 | NB 2 | NB 3 | SE 1 |
|---|---|---|---|---|
| Volume Total | 744 | 744 | 744 | 4 |
| Volume Left | 0 | 0 | 0 | 4 |
| Volume Right | 0 | 0 | 0 | 0 |
| cSH | 1700 | 1700 | 1700 | 346 |
| Volume to Capacity | 0.44 | 0.44 | 0.44 | 0.01 |
| Queue Length 95th (ft) | 0 | 0 | 0 | 1 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 15.5 |
| Lane LOS | | | | C |
| Approach Delay (s) | 0.0 | | | 15.5 |
| Approach LOS | | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 63.5% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 420 | 1863 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 420 | 1863 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | | 0 | 0 | 0 |
| Storage Lanes | 2 | | | 0 | 0 | 0 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 3367 | 4988 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 3367 | 4988 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 55 | 55 | | 30 | |
| Link Distance (ft) | | 484 | 1105 | | 111 | |
| Travel Time (s) | | 6.0 | 13.7 | | 2.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 467 | 2070 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 467 | 2070 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 95.9% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 4 | 3112 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 4 | 3112 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 125 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 100 | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Link Speed (mph) | 30 | | | 55 | 30 | |
| Link Distance (ft) | 683 | | | 1257 | 112 | |
| Travel Time (s) | 15.5 | | | 15.6 | 2.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 4 | 3458 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 4 | 3458 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 63.5% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 2008 | 0 | 0 | 0 | 3112 |
| Future Volume (vph) | 0 | 2008 | 0 | 0 | 0 | 3112 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 0.76 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 4988 | 0 | 0 | 0 | 3541 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 4988 | 0 | 0 | 0 | 3541 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 1796 | 578 | | 683 | |
| Travel Time (s) | | 22.3 | 7.2 | | 8.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 4% | 2% | 2% | 2% | 4% |
| Adj. Flow (vph) | 0 | 2231 | 0 | 0 | 0 | 3458 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 2231 | 0 | 0 | 0 | 3458 |
| Sign Control | | Free | Stop | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 75.9% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

## Summary of All Intervals

| Start Time | 6:50 |
|---|---|
| End Time | 8:00 |
| Total Time (min) | 70 |
| Time Recorded (min) | 60 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 5361 |
| Vehs Exited | 5359 |
| Starting Vehs | 144 |
| Ending Vehs | 146 |
| Travel Distance (mi) | 5203 |
| Travel Time (hr) | 141.8 |
| Total Delay (hr) | 41.9 |
| Total Stops | 2227 |
| Fuel Used (gal) | 186.2 |

## Interval #0 Information Seeding

| Start Time | 6:50 |
|---|---|
| End Time | 7:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 7:00 |
|---|---|
| End Time | 8:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 5361 |
|---|---|
| Vehs Exited | 5359 |
| Starting Vehs | 144 |
| Ending Vehs | 146 |
| Travel Distance (mi) | 5203 |
| Travel Time (hr) | 141.8 |
| Total Delay (hr) | 41.9 |
| Total Stops | 2227 |
| Fuel Used (gal) | 186.2 |

## Intersection: 5: NB US 321

| Movement | SB |
|---|---|
| Directions Served | T |
| Maximum Queue (ft) | 84 |
| Average Queue (ft) | 3 |
| 95th Queue (ft) | 28 |
| Link Distance (ft) | 413 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 91: US 321 & Grace Chapel Road & NB US 321

| Movement | WB | WB | NB | NB | NB | SE |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | T | L |
| Maximum Queue (ft) | 478 | 312 | 226 | 238 | 243 | 50 |
| Average Queue (ft) | 197 | 139 | 137 | 158 | 142 | 15 |
| 95th Queue (ft) | 314 | 254 | 210 | 229 | 220 | 44 |
| Link Distance (ft) | 919 | | 1187 | 1187 | 1187 | 38 |
| Upstream Blk Time (%) | | | | | | 3 |
| Queuing Penalty (veh) | | | | | | 1 |
| Storage Bay Dist (ft) | | 300 | | | | |
| Storage Blk Time (%) | 1 | 0 | | | | |
| Queuing Penalty (veh) | 2 | 0 | | | | |

## Intersection: 92: Grace Chapel Road U-Turn & SB US 321

| Movement | SB | SB | SB | NW | NW |
|---|---|---|---|---|---|
| Directions Served | T | T | T | L | L |
| Maximum Queue (ft) | 281 | 288 | 264 | 115 | 138 |
| Average Queue (ft) | 201 | 178 | 124 | 85 | 112 |
| 95th Queue (ft) | 276 | 265 | 224 | 121 | 134 |
| Link Distance (ft) | 1072 | 1072 | 1072 | 28 | 28 |
| Upstream Blk Time (%) | | | | 62 | 74 |
| Queuing Penalty (veh) | | | | 130 | 155 |
| Storage Bay Dist (ft) | | | | | |
| Storage Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |

## Intersection: 93: NB US 321 & Grace Chapel Road U-Turn

| Movement | SE |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 28 |
| Average Queue (ft) | 1 |
| 95th Queue (ft) | 9 |
| Link Distance (ft) | 46 |
| Upstream Blk Time (%) | 0 |
| Queuing Penalty (veh) | 0 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 94: NB US 321 & Grace Chapel Road U-Turn

| Movement | NB | NB |
|---|---|---|
| Directions Served | L | L |
| Maximum Queue (ft) | 83 | 116 |
| Average Queue (ft) | 12 | 28 |
| 95th Queue (ft) | 50 | 83 |
| Link Distance (ft) | | |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | 125 | 125 |
| Storage Blk Time (%) | | 0 |
| Queuing Penalty (veh) | | 0 |

## Intersection: 95: SB US 321 & Grace Chapel Road U-Turn

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 996: US 321/NB US 321 & SB US 321

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Network Summary

Network wide Queuing Penalty: 288

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 29 | 2014 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 29 | 2014 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 75 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 100 | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1770 | 5085 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1770 | 5085 | 0 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 1257 | | | 483 | 113 | |
| Travel Time (s) | 15.6 | | | 6.0 | 1.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 0 | 32 | 2238 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 32 | 2238 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 50.1% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

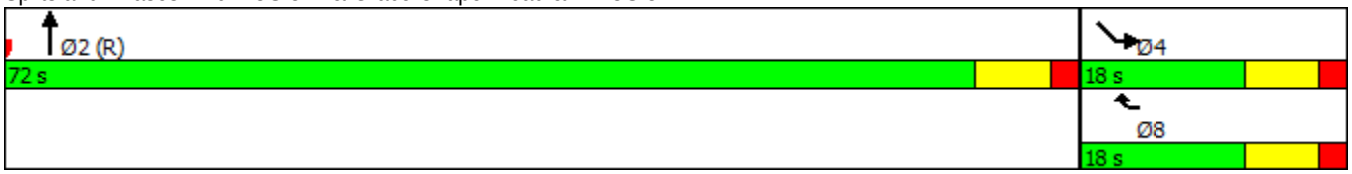
| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 200 | 0 | 2690 | 424 | 0 | 0 | 0 | 29 | 0 |
| Future Volume (vph) | 0 | 0 | 200 | 0 | 2690 | 424 | 0 | 0 | 0 | 29 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 300 | | 300 | | 400 | 0 | | 0 | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 1 | 0 | | 0 | 1 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2760 | 0 | 4988 | 1568 | 0 | 0 | 0 | 1770 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2760 | 0 | 4988 | 1568 | 0 | 0 | 0 | 1770 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 982 | | | | 1247 | | | 484 | | 113 | |
| Travel Time (s) | 19.1 | | | | 15.5 | | | 6.0 | | 3.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 2% | 3% | 2% | 4% | 3% | 4% | 4% | 2% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 222 | 0 | 2989 | 471 | 0 | 0 | 0 | 32 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 222 | 0 | 2989 | 471 | 0 | 0 | 0 | 32 | 0 |
| Turn Type | | | Prot | | NA | Free | | | | Prot | |
| Protected Phases | | | 8 | | 2 | | | | | 4 | |
| Permitted Phases | | | | | | Free | | | | | |
| Detector Phase | | | 8 | | 2 | | | | | 4 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 14.0 | | | | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 21.0 | | | | | 14.0 | |
| Total Split (s) | | | 18.0 | | 72.0 | | | | | 18.0 | |
| Total Split (%) | | | 20.0% | | 80.0% | | | | | 20.0% | |
| Maximum Green (s) | | | 11.0 | | 65.0 | | | | | 11.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | | | | | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | -2.0 | | | | | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | | | | | 3.0 | |
| Recall Mode | | | None | | C-Min | | | | | None | |
| Act Effct Green (s) | | | 12.5 | | 67.5 | 90.0 | | | | 12.5 | |
| Actuated g/C Ratio | | | 0.14 | | 0.75 | 1.00 | | | | 0.14 | |
| v/c Ratio | | | 0.58 | | 0.80 | 0.30 | | | | 0.13 | |
| Control Delay | | | 42.8 | | 9.3 | 0.5 | | | | 33.5 | |
| Queue Delay | | | 0.0 | | 0.0 | 0.0 | | | | 0.0 | |
| Total Delay | | | 42.8 | | 9.3 | 0.5 | | | | 33.5 | |
| LOS | | | D | | A | A | | | | C | |
| Approach Delay | 42.8 | | | | 8.1 | | | | | 33.5 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | D | | | | A | | | | | C | |
| Queue Length 50th (ft) | | | 67 | | 322 | 0 | | | | 16 | |
| Queue Length 95th (ft) | | | 108 | | 388 | 0 | | | | m26 | |
| Internal Link Dist (ft) | 902 | | | | 1167 | | | 404 | | 33 | |
| Turn Bay Length (ft) | | | 300 | | | 400 | | | | | |
| Base Capacity (vph) | | | 398 | | 3741 | 1568 | | | | 255 | |
| Starvation Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Reduced v/c Ratio | | | 0.56 | | 0.80 | 0.30 | | | | 0.13 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green, Master Intersection | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.80 | | | |
| Intersection Signal Delay: 10.4 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 91: US 321 & Grace Chapel Road & NB US 321

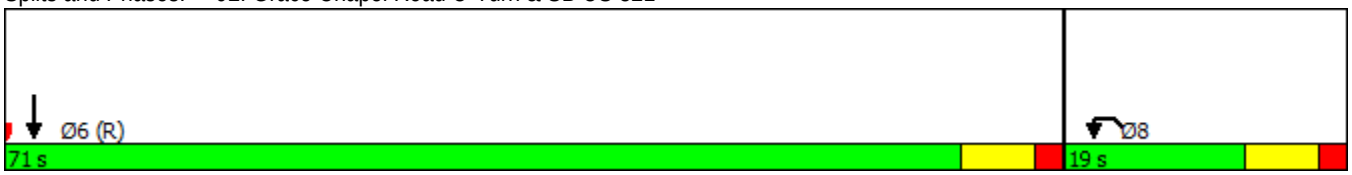


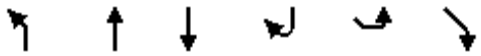
| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 1861 | 182 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 1861 | 182 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 0.97 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 4988 | 3367 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 4988 | 3367 | 0 |
| Right Turn on Red | | No | | | No | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 55 | | | 55 | 25 | |
| Link Distance (ft) | 483 | | | 1103 | 111 | |
| Travel Time (s) | 6.0 | | | 13.7 | 3.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 4% | 2% |
| Adj. Flow (vph) | 0 | 0 | 0 | 2068 | 202 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 2068 | 202 | 0 |
| Turn Type | | | | NA | Prot | |
| Protected Phases | | | | 6 | 8 | |
| Permitted Phases | | | | | | |
| Detector Phase | | | | 6 | 8 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | | | 14.0 | 7.0 | |
| Minimum Split (s) | | | | 21.0 | 14.0 | |
| Total Split (s) | | | | 71.0 | 19.0 | |
| Total Split (%) | | | | 78.9% | 21.1% | |
| Maximum Green (s) | | | | 64.0 | 12.0 | |
| Yellow Time (s) | | | | 5.0 | 5.0 | |
| All-Red Time (s) | | | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | | -2.0 | -2.0 | |
| Total Lost Time (s) | | | | 5.0 | 5.0 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | |
| Recall Mode | | | | C-Min | None | |
| Act Effct Green (s) | | | | 67.3 | 12.7 | |
| Actuated g/C Ratio | | | | 0.75 | 0.14 | |
| v/c Ratio | | | | 0.55 | 0.43 | |
| Control Delay | | | | 5.8 | 33.2 | |
| Queue Delay | | | | 0.0 | 0.0 | |
| Total Delay | | | | 5.8 | 33.2 | |
| LOS | | | | A | C | |
| Approach Delay | | | | 5.8 | 33.2 | |
| Approach LOS | | | | A | C | |
| Queue Length 50th (ft) | | | | 150 | 48 | |
| Queue Length 95th (ft) | | | | 210 | m62 | |

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 403 | | | 1023 | 31 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | | | 3748 | 535 | |
| Starvation Cap Reductn | | | | 0 | 0 | |
| Spillback Cap Reductn | | | | 0 | 0 | |
| Storage Cap Reductn | | | | 0 | 0 | |
| Reduced v/c Ratio | | | | 0.55 | 0.38 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 66 (73%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 40 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.55 | | | |
| Intersection Signal Delay: 8.2 | | Intersection LOS: A | |
| Intersection Capacity Utilization 95.8% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 92: Grace Chapel Road U-Turn & SB US 321





| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 3114 | 0 | 0 | 4 | 0 |
| Future Volume (vph) | 0 | 3114 | 0 | 0 | 4 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 4988 | 0 | 0 | 1736 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 4988 | 0 | 0 | 1736 | 0 |
| Link Speed (mph) | | 55 | 55 | | 25 | |
| Link Distance (ft) | | 578 | 1247 | | 112 | |
| Travel Time (s) | | 7.2 | 15.5 | | 3.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 4% | 2% | 2% | 4% | 2% |
| Adj. Flow (vph) | 0 | 3460 | 0 | 0 | 4 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 3460 | 0 | 0 | 4 | 0 |
| Sign Control | | Free | Free | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 70.2% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

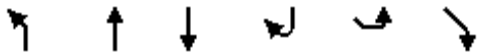
| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑↑↑ | | | ↰ | |
| Traffic Vol, veh/h | 0 | 3114 | 0 | 0 | 4 | 0 |
| Future Vol, veh/h | 0 | 3114 | 0 | 0 | 4 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | 0 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 2 | 4 | 2 | 2 | 4 | 2 |
| Mvmt Flow | 0 | 3460 | 0 | 0 | 4 | 0 |

| Major/Minor | Major1 | | Minor2 | |
|---|---|---|---|---|
| Conflicting Flow All | - | 0 | 1384 | - |
| Stage 1 | - | - | 0 | - |
| Stage 2 | - | - | 1384 | - |
| Critical Hdwy | - | - | 5.78 | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | 6.08 | - |
| Follow-up Hdwy | - | - | 3.84 | - |
| Pot Cap-1 Maneuver | 0 | - | 194 | 0 |
| Stage 1 | 0 | - | - | 0 |
| Stage 2 | 0 | - | 173 | 0 |
| Platoon blocked, % | | - | | |
| Mov Cap-1 Maneuver | - | - | 194 | - |
| Mov Cap-2 Maneuver | - | - | 194 | - |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | 173 | - |

| Approach | NB | SE |
|---|---|---|
| HCM Control Delay, s | 0 | 24 |
| HCM LOS | | C |

| Minor Lane/Major Mvmt | NBT | SELn1 |
|---|---|---|
| Capacity (veh/h) | - | 194 |
| HCM Lane V/C Ratio | - | 0.023 |
| HCM Control Delay (s) | - | 24 |
| HCM Lane LOS | - | C |
| HCM 95th %tile Q(veh) | - | 0.1 |



| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 182 | 2708 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 182 | 2708 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 125 | | | 0 | 0 | 0 |
| Storage Lanes | 2 | | | 0 | 0 | 0 |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 0.97 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 3367 | 4988 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 3367 | 4988 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 55 | 55 | | 30 | |
| Link Distance (ft) | | 484 | 1105 | | 111 | |
| Travel Time (s) | | 6.0 | 13.7 | | 2.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 202 | 3009 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 202 | 3009 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 95.8% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 4 | 2014 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 4 | 2014 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 125 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 100 | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Link Speed (mph) | 30 | | | 55 | 30 | |
| Link Distance (ft) | 683 | | | 1257 | 112 | |
| Travel Time (s) | 15.5 | | | 15.6 | 2.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 4 | 2238 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 4 | 2238 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 70.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 3114 | 0 | 0 | 0 | 2014 |
| Future Volume (vph) | 0 | 3114 | 0 | 0 | 0 | 2014 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 0.76 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 4988 | 0 | 0 | 0 | 3541 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 4988 | 0 | 0 | 0 | 3541 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 1796 | 578 | | 683 | |
| Travel Time (s) | | 22.3 | 7.2 | | 8.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 4% | 2% | 2% | 2% | 4% |
| Adj. Flow (vph) | 0 | 3460 | 0 | 0 | 0 | 2238 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 3460 | 0 | 0 | 0 | 2238 |
| Sign Control | | Free | Stop | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 63.5% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

## Summary of All Intervals

| Start Time | 4:50 |
|---|---|
| End Time | 6:00 |
| Total Time (min) | 70 |
| Time Recorded (min) | 60 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 5182 |
| Vehs Exited | 5179 |
| Starting Vehs | 108 |
| Ending Vehs | 111 |
| Travel Distance (mi) | 5024 |
| Travel Time (hr) | 122.6 |
| Total Delay (hr) | 27.3 |
| Total Stops | 1202 |
| Fuel Used (gal) | 170.4 |

## Interval #0 Information Seeding

| Start Time | 4:50 |
|---|---|
| End Time | 5:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 5:00 |
|---|---|
| End Time | 6:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 5182 |
|---|---|
| Vehs Exited | 5179 |
| Starting Vehs | 108 |
| Ending Vehs | 111 |
| Travel Distance (mi) | 5024 |
| Travel Time (hr) | 122.6 |
| Total Delay (hr) | 27.3 |
| Total Stops | 1202 |
| Fuel Used (gal) | 170.4 |

## Intersection: 5: NB US 321

| Movement | SB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 31 |
| Average Queue (ft) | 3 |
| 95th Queue (ft) | 15 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 75 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 91: US 321 & Grace Chapel Road & NB US 321

| Movement | WB | WB | NB | NB | NB | SE |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | T | L |
| Maximum Queue (ft) | 226 | 174 | 213 | 189 | 196 | 53 |
| Average Queue (ft) | 107 | 51 | 105 | 134 | 127 | 21 |
| 95th Queue (ft) | 176 | 131 | 178 | 190 | 184 | 51 |
| Link Distance (ft) | 919 | | 1187 | 1187 | 1187 | 38 |
| Upstream Blk Time (%) | | | | | | 4 |
| Queuing Penalty (veh) | | | | | | 1 |
| Storage Bay Dist (ft) | | 300 | | | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 92: Grace Chapel Road U-Turn & SB US 321

| Movement | SB | SB | SB | NW | NW |
|---|---|---|---|---|---|
| Directions Served | T | T | T | L | L |
| Maximum Queue (ft) | 140 | 160 | 116 | 92 | 133 |
| Average Queue (ft) | 93 | 64 | 35 | 46 | 75 |
| 95th Queue (ft) | 144 | 130 | 73 | 79 | 119 |
| Link Distance (ft) | 1072 | 1072 | 1072 | 28 | 28 |
| Upstream Blk Time (%) | | | | 40 | 68 |
| Queuing Penalty (veh) | | | | 36 | 62 |
| Storage Bay Dist (ft) | | | | | |
| Storage Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |

## Intersection: 93: NB US 321 & Grace Chapel Road U-Turn

| Movement | SE |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 29 |
| Average Queue (ft) | 3 |
| 95th Queue (ft) | 16 |
| Link Distance (ft) | 46 |
| Upstream Blk Time (%) | 0 |
| Queuing Penalty (veh) | 0 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 94: NB US 321 & Grace Chapel Road U-Turn

| Movement | NB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 34 |
| Average Queue (ft) | 1 |
| 95th Queue (ft) | 11 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 125 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 95: SB US 321 & Grace Chapel Road U-Turn

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 996: US 321/NB US 321 & SB US 321

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Network Summary

Network wide Queuing Penalty: 99

APPENDIX K

# 2040 Build Alternative Grace Chapel Road – Reverse Superstreet Synchro & SimTraffic Reports

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 420 | 34 | 1829 | 200 | 0 | 2713 |
| Future Volume (vph) | 420 | 34 | 1829 | 200 | 0 | 2713 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 300 | 0 | | 400 | 0 | |
| Storage Lanes | 2 | 1 | | 1 | 0 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 0.97 | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 |
| Frt | | 0.850 | | 0.850 | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 3400 | 1568 | 4988 | 1568 | 0 | 4988 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 3400 | 1568 | 4988 | 1568 | 0 | 4988 |
| Right Turn on Red | | No | | No | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 35 | | 55 | | | 55 |
| Link Distance (ft) | 982 | | 651 | | | 221 |
| Travel Time (s) | 19.1 | | 8.1 | | | 2.7 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 4% | 3% | 4% | 4% |
| Adj. Flow (vph) | 467 | 38 | 2032 | 222 | 0 | 3014 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 467 | 38 | 2032 | 222 | 0 | 3014 |
| Turn Type | Prot | Prot | NA | Free | | NA |
| Protected Phases | 8 | 8 | 2 | | | 6 |
| Permitted Phases | | | | Free | | |
| Detector Phase | 8 | 8 | 2 | | | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 14.0 | | | 14.0 |
| Minimum Split (s) | 14.0 | 14.0 | 21.0 | | | 21.0 |
| Total Split (s) | 29.0 | 29.0 | 91.0 | | | 91.0 |
| Total Split (%) | 24.2% | 24.2% | 75.8% | | | 75.8% |
| Maximum Green (s) | 22.0 | 22.0 | 84.0 | | | 84.0 |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | | | 5.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | 2.0 |
| Lost Time Adjust (s) | -2.0 | -2.0 | -2.0 | | | -2.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | | 3.0 |
| Recall Mode | None | None | C-Min | | | C-Min |
| Act Effct Green (s) | 22.3 | 22.3 | 87.7 | 120.0 | | 87.7 |
| Actuated g/C Ratio | 0.19 | 0.19 | 0.73 | 1.00 | | 0.73 |
| v/c Ratio | 0.74 | 0.13 | 0.56 | 0.14 | | 0.83 |
| Control Delay | 53.7 | 41.1 | 8.2 | 0.2 | | 13.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Delay | 53.7 | 41.1 | 8.2 | 0.2 | | 13.9 |
| LOS | D | D | A | A | | B |
| Approach Delay | 52.8 | | 7.4 | | | 13.9 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Approach LOS | D | | A | | | B |
| Queue Length 50th (ft) | 175 | 25 | 239 | 0 | | 533 |
| Queue Length 95th (ft) | 232 | 56 | 279 | 0 | | 613 |
| Internal Link Dist (ft) | 902 | | 571 | | | 141 |
| Turn Bay Length (ft) | 300 | | | 400 | | |
| Base Capacity (vph) | 680 | 313 | 3646 | 1568 | | 3646 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | | 0 |
| Reduced v/c Ratio | 0.69 | 0.12 | 0.56 | 0.14 | | 0.83 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.83 | | | |
| Intersection Signal Delay: 14.8 | | Intersection LOS: B | |
| Intersection Capacity Utilization 72.7% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 91: US 321 & Grace Chapel Road

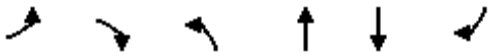
| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 2709 | 4 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 2709 | 4 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 4988 | 1736 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 4988 | 1736 | 0 |
| Link Speed (mph) | 55 | | | 55 | 25 | |
| Link Distance (ft) | 370 | | | 1103 | 63 | |
| Travel Time (s) | 4.6 | | | 13.7 | 1.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 4% | 2% |
| Adj. Flow (vph) | 0 | 0 | 0 | 3010 | 4 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 3010 | 4 | 0 |
| Sign Control | Free | | | Free | Yield | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 62.3% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

| Movement | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 2709 | 4 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 2709 | 4 | 0 |
| Sign Control | Free | | | Free | Yield | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 3010 | 4 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 0 | | 1003 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 0 | | 1003 | 0 |
| tC, single (s) | | | 4.1 | | 6.9 | 6.9 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 98 | 100 |
| cM capacity (veh/h) | | | 1622 | | 235 | 1084 |

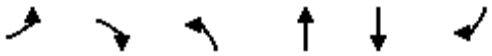
| Direction, Lane # | SB 1 | SB 2 | SB 3 | NW 1 |
|---|---|---|---|---|
| Volume Total | 1003 | 1003 | 1003 | 4 |
| Volume Left | 0 | 0 | 0 | 4 |
| Volume Right | 0 | 0 | 0 | 0 |
| cSH | 1700 | 1700 | 1700 | 235 |
| Volume to Capacity | 0.59 | 0.59 | 0.59 | 0.02 |
| Queue Length 95th (ft) | 0 | 0 | 0 | 1 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 20.6 |
| Lane LOS | | | | C |
| Approach Delay (s) | 0.0 | | | 20.6 |
| Approach LOS | | | | C |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 62.3% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 21 | 0 | 0 | 2008 | 0 | 0 |
| Future Volume (vph) | 21 | 0 | 0 | 2008 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 0 | 0 | 4988 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 0 | 0 | 4988 | 0 | 0 |
| Link Speed (mph) | 25 | | | 55 | 55 | |
| Link Distance (ft) | 88 | | | 578 | 601 | |
| Travel Time (s) | 2.4 | | | 7.2 | 7.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 4% | 2% | 2% |
| Adj. Flow (vph) | 23 | 0 | 0 | 2231 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 23 | 0 | 0 | 2231 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |

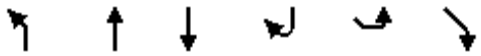
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 105.6% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 21 | 0 | 0 | 2008 | 0 | 0 |
| Future Volume (Veh/h) | 21 | 0 | 0 | 2008 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 23 | 0 | 0 | 2231 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 744 | 0 | 0 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 744 | 0 | 0 | | | |
| tC, single (s) | 6.9 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 93 | 100 | 100 | | | |
| cM capacity (veh/h) | 346 | 1084 | 1622 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | NB 3 |
|---|---|---|---|---|
| Volume Total | 23 | 744 | 744 | 744 |
| Volume Left | 23 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 |
| cSH | 346 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.07 | 0.44 | 0.44 | 0.44 |
| Queue Length 95th (ft) | 5 | 0 | 0 | 0 |
| Control Delay (s) | 16.1 | 0.0 | 0.0 | 0.0 |
| Lane LOS | C | | | |
| Approach Delay (s) | 16.1 | 0.0 | | |
| Approach LOS | C | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.2 | | |
| Intersection Capacity Utilization | 105.6% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |



| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 4 | 1859 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 4 | 1859 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 0 | 0 |
| Taper Length (ft) | 40 | | | | 50 | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 4988 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 4988 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 55 | 55 | | 30 | |
| Link Distance (ft) | | 320 | 1105 | | 63 | |
| Travel Time (s) | | 4.0 | 13.7 | | 1.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 4 | 2066 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 4 | 2066 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 62.3% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 21 | 3112 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 21 | 3112 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 150 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1736 | 4988 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1736 | 4988 |
| Link Speed (mph) | 30 | | 30 | | | 55 |
| Link Distance (ft) | 88 | | 647 | | | 536 |
| Travel Time (s) | 2.0 | | 14.7 | | | 6.6 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 23 | 3458 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 23 | 3458 |
| Sign Control | Stop | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 125.5% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 3133 | 0 | 2029 |
| Future Volume (vph) | 0 | 0 | 0 | 3133 | 0 | 2029 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 0.76 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 0 | 0 | 4988 | 0 | 3541 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 0 | 0 | 4988 | 0 | 3541 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 536 | | | 651 | 601 | |
| Travel Time (s) | 6.6 | | | 8.1 | 7.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 2% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 3481 | 0 | 2254 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 3481 | 0 | 2254 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 114.5% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 1863 | 0 | 0 | 0 | 2713 |
| Future Volume (vph) | 0 | 1863 | 0 | 0 | 0 | 2713 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 0.76 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 4988 | 0 | 0 | 0 | 3541 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 4988 | 0 | 0 | 0 | 3541 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 221 | 320 | | 370 | |
| Travel Time (s) | | 2.7 | 4.0 | | 4.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 4% | 2% | 2% | 2% | 4% |
| Adj. Flow (vph) | 0 | 2070 | 0 | 0 | 0 | 3014 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 2070 | 0 | 0 | 0 | 3014 |
| Sign Control | | Free | Stop | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 66.6% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 2008 | 0 | 0 | 0 | 3112 |
| Future Volume (vph) | 0 | 2008 | 0 | 0 | 0 | 3112 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 0.76 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 4988 | 0 | 0 | 0 | 3541 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 4988 | 0 | 0 | 0 | 3541 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 1796 | 578 | | 647 | |
| Travel Time (s) | | 22.3 | 7.2 | | 8.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 4% | 2% | 2% | 2% | 4% |
| Adj. Flow (vph) | 0 | 2231 | 0 | 0 | 0 | 3458 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 2231 | 0 | 0 | 0 | 3458 |
| Sign Control | | Free | Stop | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 75.9% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

## Summary of All Intervals

| Start Time | 6:50 |
|---|---|
| End Time | 8:00 |
| Total Time (min) | 70 |
| Time Recorded (min) | 60 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 5143 |
| Vehs Exited | 5112 |
| Starting Vehs | 111 |
| Ending Vehs | 142 |
| Travel Distance (mi) | 5038 |
| Travel Time (hr) | 129.2 |
| Total Delay (hr) | 33.8 |
| Total Stops | 1525 |
| Fuel Used (gal) | 170.8 |

## Interval #0 Information Seeding

| Start Time | 6:50 |
|---|---|
| End Time | 7:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 7:00 |
|---|---|
| End Time | 8:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 5143 |
|---|---|
| Vehs Exited | 5112 |
| Starting Vehs | 111 |
| Ending Vehs | 142 |
| Travel Distance (mi) | 5038 |
| Travel Time (hr) | 129.2 |
| Total Delay (hr) | 33.8 |
| Total Stops | 1525 |
| Fuel Used (gal) | 170.8 |

## Intersection: 91: US 321 & Grace Chapel Road

| Movement | WB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | R | T | T | T | T | T | T |
| Maximum Queue (ft) | 227 | 272 | 106 | 152 | 160 | 175 | 201 | 201 | 214 |
| Average Queue (ft) | 146 | 179 | 35 | 112 | 118 | 119 | 181 | 179 | 142 |
| 95th Queue (ft) | 227 | 249 | 83 | 141 | 161 | 165 | 213 | 218 | 204 |
| Link Distance (ft) | | | 906 | 607 | 607 | 607 | 138 | 138 | 138 |
| Upstream Blk Time (%) | | | | | | | 11 | 9 | 4 |
| Queuing Penalty (veh) | | | | | | | 101 | 84 | 33 |
| Storage Bay Dist (ft) | 300 | 300 | | | | | | | |
| Storage Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |

## Intersection: 92: Grace Chapel Road U-Turn & SB US 321

| Movement | NW |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 22 |
| Average Queue (ft) | 2 |
| 95th Queue (ft) | 13 |
| Link Distance (ft) | -5 |
| Upstream Blk Time (%) | 8 |
| Queuing Penalty (veh) | 0 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 93: NB US 321 & Grace Chapel Road U-Turn

| Movement | EB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 45 |
| Average Queue (ft) | 10 |
| 95th Queue (ft) | 31 |
| Link Distance (ft) | 22 |
| Upstream Blk Time (%) | 9 |
| Queuing Penalty (veh) | 2 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 94: NB US 321 & Grace Chapel Road U-Turn

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 95: SB US 321 & Grace Chapel Road U-Turn

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 96: SB US 321/US 321 & NB US 321

| Movement | SB |
|---|---|
| Directions Served | T |
| Maximum Queue (ft) | 37 |
| Average Queue (ft) | 1 |
| 95th Queue (ft) | 12 |
| Link Distance (ft) | 607 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 97: US 321 & NB US 321

| Movement | SE | SE | SE |
|---|---|---|---|
| Directions Served | R | R | R |
| Maximum Queue (ft) | 117 | 113 | 61 |
| Average Queue (ft) | 31 | 25 | 9 |
| 95th Queue (ft) | 83 | 76 | 39 |
| Link Distance (ft) | 320 | 320 | 320 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 996: US 321/NB US 321 & SB US 321

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Network Summary

Network wide Queuing Penalty: 221

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 182 | 18 | 2690 | 453 | 0 | 1865 |
| Future Volume (vph) | 182 | 18 | 2690 | 453 | 0 | 1865 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 300 | 0 | | 400 | 0 | |
| Storage Lanes | 2 | 1 | | 1 | 0 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 0.97 | 1.00 | 0.91 | 1.00 | 1.00 | 0.91 |
| Frt | | 0.850 | | 0.850 | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 3400 | 1568 | 4988 | 1568 | 0 | 4988 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 3400 | 1568 | 4988 | 1568 | 0 | 4988 |
| Right Turn on Red | | No | | No | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 35 | | 55 | | | 55 |
| Link Distance (ft) | 982 | | 651 | | | 221 |
| Travel Time (s) | 19.1 | | 8.1 | | | 2.7 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 4% | 3% | 4% | 4% |
| Adj. Flow (vph) | 202 | 20 | 2989 | 503 | 0 | 2072 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 202 | 20 | 2989 | 503 | 0 | 2072 |
| Turn Type | Prot | Prot | NA | Free | | NA |
| Protected Phases | 8 | 8 | 2 | | | 6 |
| Permitted Phases | | | | Free | | |
| Detector Phase | 8 | 8 | 2 | | | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 14.0 | | | 14.0 |
| Minimum Split (s) | 14.0 | 14.0 | 21.0 | | | 21.0 |
| Total Split (s) | 19.0 | 19.0 | 101.0 | | | 101.0 |
| Total Split (%) | 15.8% | 15.8% | 84.2% | | | 84.2% |
| Maximum Green (s) | 12.0 | 12.0 | 94.0 | | | 94.0 |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | | | 5.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | 2.0 |
| Lost Time Adjust (s) | -2.0 | -2.0 | -2.0 | | | -2.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | | 3.0 |
| Recall Mode | None | None | C-Min | | | C-Min |
| Act Effct Green (s) | 13.2 | 13.2 | 96.8 | 120.0 | | 96.8 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.81 | 1.00 | | 0.81 |
| v/c Ratio | 0.54 | 0.12 | 0.74 | 0.32 | | 0.52 |
| Control Delay | 56.1 | 49.3 | 7.1 | 0.5 | | 4.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Delay | 56.1 | 49.3 | 7.1 | 0.5 | | 4.4 |
| LOS | E | D | A | A | | A |
| Approach Delay | 55.5 | | 6.2 | | | 4.4 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Approach LOS | E | | A | | | A |
| Queue Length 50th (ft) | 76 | 14 | 341 | 0 | | 162 |
| Queue Length 95th (ft) | 116 | 39 | 387 | 0 | | 185 |
| Internal Link Dist (ft) | 902 | | 571 | | | 141 |
| Turn Bay Length (ft) | 300 | | | 400 | | |
| Base Capacity (vph) | 396 | 182 | 4023 | 1568 | | 4023 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | | 0 |
| Reduced v/c Ratio | 0.51 | 0.11 | 0.74 | 0.32 | | 0.52 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 120 | | | |
| Actuated Cycle Length: 120 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.74 | | | |
| Intersection Signal Delay: 7.5 | | Intersection LOS: A | |
| Intersection Capacity Utilization 66.1% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 91: US 321 & Grace Chapel Road

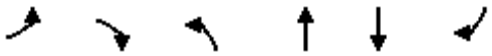
| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 1861 | 4 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 1861 | 4 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 4988 | 1736 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 4988 | 1736 | 0 |
| Link Speed (mph) | 55 | | | 55 | 25 | |
| Link Distance (ft) | 370 | | | 1103 | 63 | |
| Travel Time (s) | 4.6 | | | 13.7 | 1.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 4% | 2% |
| Adj. Flow (vph) | 0 | 0 | 0 | 2068 | 4 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 2068 | 4 | 0 |
| Sign Control | Free | | | Free | Yield | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 55.6% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

| Movement | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 1861 | 4 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 1861 | 4 | 0 |
| Sign Control | Free | | | Free | Yield | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 2068 | 4 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 0 | | 689 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 0 | | 689 | 0 |
| tC, single (s) | | | 4.1 | | 6.9 | 6.9 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 100 | | 99 | 100 |
| cM capacity (veh/h) | | | 1622 | | 375 | 1084 |

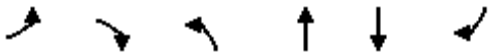
| Direction, Lane # | SB 1 | SB 2 | SB 3 | NW 1 |
|---|---|---|---|---|
| Volume Total | 689 | 689 | 689 | 4 |
| Volume Left | 0 | 0 | 0 | 4 |
| Volume Right | 0 | 0 | 0 | 0 |
| cSH | 1700 | 1700 | 1700 | 375 |
| Volume to Capacity | 0.41 | 0.41 | 0.41 | 0.01 |
| Queue Length 95th (ft) | 0 | 0 | 0 | 1 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 14.7 |
| Lane LOS | | | | B |
| Approach Delay (s) | 0.0 | | | 14.7 |
| Approach LOS | | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 55.6% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 29 | 0 | 0 | 3114 | 0 | 0 |
| Future Volume (vph) | 29 | 0 | 0 | 3114 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 0 | 0 | 4988 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 0 | 0 | 4988 | 0 | 0 |
| Link Speed (mph) | 25 | | | 55 | 55 | |
| Link Distance (ft) | 88 | | | 578 | 601 | |
| Travel Time (s) | 2.4 | | | 7.2 | 7.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 4% | 2% | 2% |
| Adj. Flow (vph) | 32 | 0 | 0 | 3460 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 32 | 0 | 0 | 3460 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 105.8% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 29 | 0 | 0 | 3114 | 0 | 0 |
| Future Volume (Veh/h) | 29 | 0 | 0 | 3114 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 32 | 0 | 0 | 3460 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1153 | 0 | 0 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1153 | 0 | 0 | | | |
| tC, single (s) | 6.9 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 83 | 100 | 100 | | | |
| cM capacity (veh/h) | 188 | 1084 | 1622 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | NB 3 |
|---|---|---|---|---|
| Volume Total | 32 | 1153 | 1153 | 1153 |
| Volume Left | 32 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 |
| cSH | 188 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.17 | 0.68 | 0.68 | 0.68 |
| Queue Length 95th (ft) | 15 | 0 | 0 | 0 |
| Control Delay (s) | 28.1 | 0.0 | 0.0 | 0.0 |
| Lane LOS | D | | | |
| Approach Delay (s) | 28.1 | 0.0 | | |
| Approach LOS | D | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.3 | | |
| Intersection Capacity Utilization | 105.8% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 4 | 2704 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 4 | 2704 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 0 | 0 |
| Taper Length (ft) | 40 | | | | 50 | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 4988 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 4988 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 55 | 55 | | 30 | |
| Link Distance (ft) | | 320 | 1105 | | 63 | |
| Travel Time (s) | | 4.0 | 13.7 | | 1.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 4 | 3004 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 4 | 3004 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 55.6% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 29 | 2018 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 29 | 2018 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 150 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1736 | 4988 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1736 | 4988 |
| Link Speed (mph) | 30 | | 30 | | | 55 |
| Link Distance (ft) | 88 | | 647 | | | 536 |
| Travel Time (s) | 2.0 | | 14.7 | | | 6.6 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 32 | 2242 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 32 | 2242 |
| Sign Control | Stop | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 130.5% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | ↑↑↑ | | ↱↱↱ |
| Traffic Volume (vph) | 0 | 0 | 0 | 2047 | 0 | 3143 |
| Future Volume (vph) | 0 | 0 | 0 | 2047 | 0 | 3143 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 0.76 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 0 | 0 | 4988 | 0 | 3541 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 0 | 0 | 4988 | 0 | 3541 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 536 | | | 651 | 601 | |
| Travel Time (s) | 6.6 | | | 8.1 | 7.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 2% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 2274 | 0 | 3492 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 2274 | 0 | 3492 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 119.5% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 2708 | 0 | 0 | 0 | 1865 |
| Future Volume (vph) | 0 | 2708 | 0 | 0 | 0 | 1865 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 0.76 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 4988 | 0 | 0 | 0 | 3541 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 4988 | 0 | 0 | 0 | 3541 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 221 | 320 | | 370 | |
| Travel Time (s) | | 2.7 | 4.0 | | 4.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 4% | 2% | 2% | 2% | 4% |
| Adj. Flow (vph) | 0 | 3009 | 0 | 0 | 0 | 2072 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 3009 | 0 | 0 | 0 | 2072 |
| Sign Control | | Free | Stop | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 55.7% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 3114 | 0 | 0 | 0 | 2018 |
| Future Volume (vph) | 0 | 3114 | 0 | 0 | 0 | 2018 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 0.76 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 4988 | 0 | 0 | 0 | 3541 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 4988 | 0 | 0 | 0 | 3541 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 1796 | 578 | | 647 | |
| Travel Time (s) | | 22.3 | 7.2 | | 8.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 4% | 2% | 2% | 2% | 4% |
| Adj. Flow (vph) | 0 | 3460 | 0 | 0 | 0 | 2242 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 3460 | 0 | 0 | 0 | 2242 |
| Sign Control | | Free | Stop | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 63.5% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

## Summary of All Intervals

| Start Time | 4:50 |
|---|---|
| End Time | 6:00 |
| Total Time (min) | 70 |
| Time Recorded (min) | 60 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 5182 |
| Vehs Exited | 5163 |
| Starting Vehs | 112 |
| Ending Vehs | 131 |
| Travel Distance (mi) | 5085 |
| Travel Time (hr) | 120.1 |
| Total Delay (hr) | 24.4 |
| Total Stops | 907 |
| Fuel Used (gal) | 168.0 |

## Interval #0 Information Seeding

| Start Time | 4:50 |
|---|---|
| End Time | 5:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 5:00 |
|---|---|
| End Time | 6:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 5182 |
|---|---|
| Vehs Exited | 5163 |
| Starting Vehs | 112 |
| Ending Vehs | 131 |
| Travel Distance (mi) | 5085 |
| Travel Time (hr) | 120.1 |
| Total Delay (hr) | 24.4 |
| Total Stops | 907 |
| Fuel Used (gal) | 168.0 |

## Intersection: 91: US 321 & Grace Chapel Road

| Movement | WB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | R | T | T | T | T | T | T |
| Maximum Queue (ft) | 240 | 273 | 76 | 212 | 202 | 193 | 166 | 135 | 153 |
| Average Queue (ft) | 46 | 109 | 19 | 115 | 120 | 117 | 103 | 82 | 57 |
| 95th Queue (ft) | 144 | 185 | 50 | 177 | 178 | 177 | 151 | 134 | 128 |
| Link Distance (ft) | | | 906 | 607 | 607 | 607 | 138 | 138 | 138 |
| Upstream Blk Time (%) | | | | | | | 1 | 0 | 0 |
| Queuing Penalty (veh) | | | | | | | 6 | 2 | 2 |
| Storage Bay Dist (ft) | 300 | 300 | | | | | | | |
| Storage Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |

## Intersection: 92: Grace Chapel Road U-Turn & SB US 321

| Movement | NW |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 23 |
| Average Queue (ft) | 4 |
| 95th Queue (ft) | 18 |
| Link Distance (ft) | -5 |
| Upstream Blk Time (%) | 3 |
| Queuing Penalty (veh) | 0 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 93: NB US 321 & Grace Chapel Road U-Turn

| Movement | EB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 67 |
| Average Queue (ft) | 25 |
| 95th Queue (ft) | 55 |
| Link Distance (ft) | 22 |
| Upstream Blk Time (%) | 45 |
| Queuing Penalty (veh) | 13 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 94: NB US 321 & Grace Chapel Road U-Turn

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 95: SB US 321 & Grace Chapel Road U-Turn

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 96: SB US 321/US 321 & NB US 321

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 97: US 321 & NB US 321

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 996: US 321/NB US 321 & SB US 321

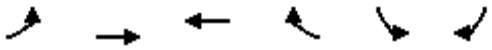
| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Network Summary

Network wide Queuing Penalty: 23

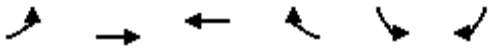
APPENDIX L

# 2040 Build Alternative Dudley Shoals Road – At-Grade Intersection Synchro & SimTraffic Reports



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 10 | 111 | 134 | 112 | 0 | 0 |
| Future Volume (vph) | 10 | 111 | 134 | 112 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.939 | | | |
| Flt Protected | | 0.996 | | | | |
| Satd. Flow (prot) | 0 | 1855 | 1749 | 0 | 0 | 0 |
| Flt Permitted | | 0.996 | | | | |
| Satd. Flow (perm) | 0 | 1855 | 1749 | 0 | 0 | 0 |
| Link Speed (mph) | | 35 | 35 | | 55 | |
| Link Distance (ft) | | 1050 | 1626 | | 1046 | |
| Travel Time (s) | | 20.5 | 31.7 | | 13.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 11 | 123 | 149 | 124 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 134 | 273 | 0 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |

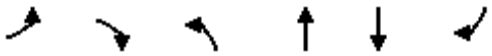
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 17.5% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 10 | 111 | 134 | 112 | 0 | 0 |
| Future Volume (Veh/h) | 10 | 111 | 134 | 112 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 11 | 123 | 149 | 124 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 273 | | | | 356 | 211 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 273 | | | | 356 | 211 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 99 | | | | 100 | 100 |
| cM capacity (veh/h) | 1290 | | | | 637 | 829 |

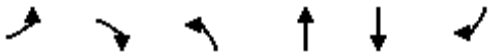
| Direction, Lane # | EB 1 | WB 1 |
|---|---|---|
| Volume Total | 134 | 273 |
| Volume Left | 11 | 0 |
| Volume Right | 0 | 124 |
| cSH | 1290 | 1700 |
| Volume to Capacity | 0.01 | 0.16 |
| Queue Length 95th (ft) | 1 | 0 |
| Control Delay (s) | 0.7 | 0.0 |
| Lane LOS | A | |
| Approach Delay (s) | 0.7 | 0.0 |
| Approach LOS | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.2 | | |
| Intersection Capacity Utilization | 17.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 216 | 90 | 58 | 53 | 156 | 188 |
| Future Volume (vph) | 216 | 90 | 58 | 53 | 156 | 188 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 0.960 | | | | 0.926 | |
| Flt Protected | 0.966 | | | 0.975 | | |
| Satd. Flow (prot) | 1727 | 0 | 0 | 1816 | 1725 | 0 |
| Flt Permitted | 0.966 | | | 0.975 | | |
| Satd. Flow (perm) | 1727 | 0 | 0 | 1816 | 1725 | 0 |
| Link Speed (mph) | 45 | | | 45 | 45 | |
| Link Distance (ft) | 639 | | | 746 | 415 | |
| Travel Time (s) | 9.7 | | | 11.3 | 6.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 240 | 100 | 64 | 59 | 173 | 209 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 340 | 0 | 0 | 123 | 382 | 0 |
| Sign Control | Stop | | | Free | Free | |

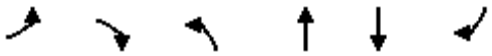
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 53.2% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 216 | 90 | 58 | 53 | 156 | 188 |
| Future Volume (Veh/h) | 216 | 90 | 58 | 53 | 156 | 188 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 240 | 100 | 64 | 59 | 173 | 209 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 464 | 278 | 382 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 464 | 278 | 382 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 54 | 87 | 95 | | | |
| cM capacity (veh/h) | 526 | 761 | 1176 | | | |

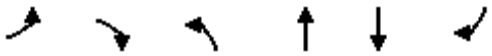
| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 340 | 123 | 382 |
| Volume Left | 240 | 64 | 0 |
| Volume Right | 100 | 0 | 209 |
| cSH | 578 | 1176 | 1700 |
| Volume to Capacity | 0.59 | 0.05 | 0.22 |
| Queue Length 95th (ft) | 95 | 4 | 0 |
| Control Delay (s) | 19.7 | 4.5 | 0.0 |
| Lane LOS | C | A | |
| Approach Delay (s) | 19.7 | 4.5 | 0.0 |
| Approach LOS | C | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 8.6 | | |
| Intersection Capacity Utilization | 53.2% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 122 | 0 | 1459 | 2058 | 0 |
| Future Volume (vph) | 0 | 122 | 0 | 1459 | 2058 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 |
| Frt | | 0.865 | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1611 | 0 | 3539 | 3539 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1611 | 0 | 3539 | 3539 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 1046 | | | 2666 | 352 | |
| Travel Time (s) | 13.0 | | | 33.0 | 4.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 136 | 0 | 1621 | 2287 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 136 | 0 | 1621 | 2287 | 0 |
| Sign Control | Stop | | | Free | Free | |

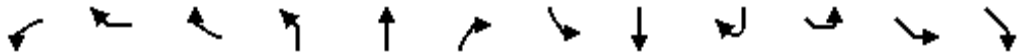
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 71.1% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 122 | 0 | 1459 | 2058 | 0 |
| Future Volume (Veh/h) | 0 | 122 | 0 | 1459 | 2058 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 136 | 0 | 1621 | 2287 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 3098 | 1144 | 2287 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 3098 | 1144 | 2287 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 30 | 100 | | | |
| cM capacity (veh/h) | 9 | 194 | 218 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 136 | 810 | 810 | 1144 | 1144 |
| Volume Left | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 136 | 0 | 0 | 0 | 0 |
| cSH | 194 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.70 | 0.48 | 0.48 | 0.67 | 0.67 |
| Queue Length 95th (ft) | 110 | 0 | 0 | 0 | 0 |
| Control Delay (s) | 58.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | F | | | | |
| Approach Delay (s) | 58.4 | 0.0 | | 0.0 | |
| Approach LOS | F | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.0 | | | |
| Intersection Capacity Utilization | 71.1% | ICU Level of Service | | C |
| Analysis Period (min) | 15 | | | |



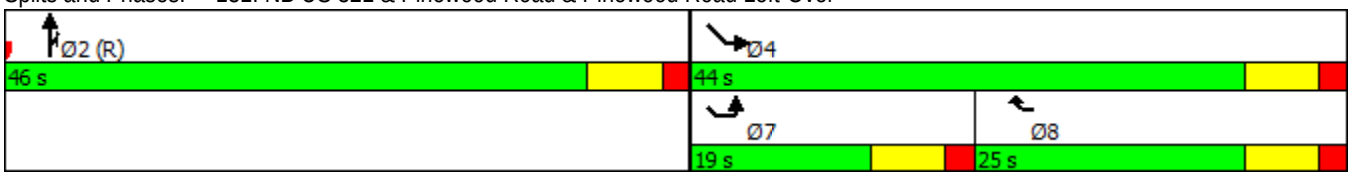
| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL2 | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 256 | 0 | 1252 | 154 | 0 | 0 | 0 | 182 | 144 | 0 |
| Future Volume (vph) | 0 | 0 | 256 | 0 | 1252 | 154 | 0 | 0 | 0 | 182 | 144 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 200 | | 0 | | 0 | 0 | | 0 | | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 1 | 0 | | 0 | | 2 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2787 | 0 | 3471 | 1583 | 0 | 0 | 0 | 1770 | 1770 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2787 | 0 | 3471 | 1583 | 0 | 0 | 0 | 1770 | 1770 | 0 |
| Right Turn on Red | | | No | | | No | | | No | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | | 25 | |
| Link Distance (ft) | 1199 | | | | 166 | | | 766 | | | 230 | |
| Travel Time (s) | 23.4 | | | | 2.1 | | | 9.5 | | | 6.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 4% | 2% | 2% | 2% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 284 | 0 | 1391 | 171 | 0 | 0 | 0 | 202 | 160 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 284 | 0 | 1391 | 171 | 0 | 0 | 0 | 202 | 160 | 0 |
| Turn Type | | | Prot | | NA | Prot | | | | Prot | Prot | |
| Protected Phases | | | 8 | | 2 | 2 | | | | 7 | 4 | |
| Permitted Phases | | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 14.0 | 14.0 | | | | 7.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 21.0 | 21.0 | | | | 14.0 | 14.0 | |
| Total Split (s) | | | 25.0 | | 46.0 | 46.0 | | | | 19.0 | 44.0 | |
| Total Split (%) | | | 27.8% | | 51.1% | 51.1% | | | | 21.1% | 48.9% | |
| Maximum Green (s) | | | 18.0 | | 39.0 | 39.0 | | | | 12.0 | 37.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | 5.0 | | | | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | 2.0 | | | | 2.0 | 2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | 5.0 | | | | 5.0 | 5.0 | |
| Lead/Lag | | | Lag | | | | | | | Lead | | |
| Lead-Lag Optimize? | | | Yes | | | | | | | Yes | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | 3.0 | | | | 3.0 | 3.0 | |
| Recall Mode | | | None | | C-Min | C-Min | | | | None | None | |
| Act Effct Green (s) | | | 16.2 | | 45.1 | 45.1 | | | | 13.7 | 34.9 | |
| Actuated g/C Ratio | | | 0.18 | | 0.50 | 0.50 | | | | 0.15 | 0.39 | |
| v/c Ratio | | | 0.57 | | 0.80 | 0.22 | | | | 0.75 | 0.23 | |
| Control Delay | | | 37.8 | | 19.1 | 10.4 | | | | 43.1 | 12.2 | |
| Queue Delay | | | 0.0 | | 0.0 | 0.0 | | | | 0.0 | 0.0 | |
| Total Delay | | | 37.8 | | 19.1 | 10.4 | | | | 43.1 | 12.2 | |
| LOS | | | D | | B | B | | | | D | B | |
| Approach Delay | 37.8 | | | | 18.1 | | | | | | 29.4 | |
| Approach LOS | D | | | | B | | | | | | C | |
| Queue Length 50th (ft) | | | 84 | | 351 | 43 | | | | 107 | 48 | |
| Queue Length 95th (ft) | | | 122 | | #347 | m62 | | | | m118 | m49 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL2 | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 1119 | | | | 86 | | | 686 | | | 150 | |
| Turn Bay Length (ft) | | | 200 | | | | | | | | | |
| Base Capacity (vph) | | | 619 | | 1739 | 793 | | | | 275 | 767 | |
| Starvation Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | 0 | |
| Reduced v/c Ratio | | | 0.46 | | 0.80 | 0.22 | | | | 0.73 | 0.21 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 89 (99%), Referenced to phase 2:NBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.80 | | | |
| Intersection Signal Delay: 22.5 | | Intersection LOS: C | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 131: NB US 321 & Pinewood Road & Pinewood Road Left-Over

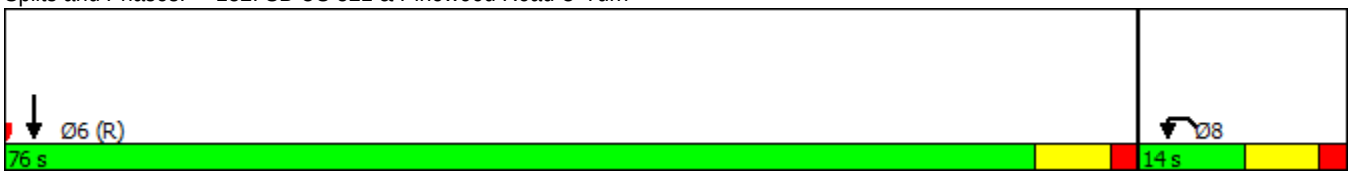


| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 2283 | 118 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 2283 | 118 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 3471 | 1736 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 3471 | 1736 | 0 |
| Right Turn on Red | | No | | | No | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 30 | | | 55 | 25 | |
| Link Distance (ft) | 587 | | | 861 | 64 | |
| Travel Time (s) | 13.3 | | | 10.7 | 1.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 4% | 2% |
| Adj. Flow (vph) | 0 | 0 | 0 | 2537 | 131 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 2537 | 131 | 0 |
| Turn Type | | | | NA | Prot | |
| Protected Phases | | | | 6 | 8 | |
| Permitted Phases | | | | | | |
| Minimum Initial (s) | | | | 14.0 | 7.0 | |
| Minimum Split (s) | | | | 21.0 | 14.0 | |
| Total Split (s) | | | | 76.0 | 14.0 | |
| Total Split (%) | | | | 84.4% | 15.6% | |
| Maximum Green (s) | | | | 69.0 | 7.0 | |
| Yellow Time (s) | | | | 5.0 | 5.0 | |
| All-Red Time (s) | | | | 2.0 | 2.0 | |
| Total Lost Time (s) | | | | 5.0 | 5.0 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | |
| Recall Mode | | | | C-Min | None | |
| Act Effct Green (s) | | | | 70.8 | 9.2 | |
| Actuated g/C Ratio | | | | 0.79 | 0.10 | |
| v/c Ratio | | | | 0.93 | 0.74 | |
| Control Delay | | | | 4.5 | 61.2 | |
| Queue Delay | | | | 0.1 | 0.0 | |
| Total Delay | | | | 4.6 | 61.2 | |
| LOS | | | | A | E | |
| Approach Delay | | | | 4.6 | 61.2 | |
| Approach LOS | | | | A | E | |
| Queue Length 50th (ft) | | | | 86 | 73 | |
| Queue Length 95th (ft) | | | | m83 | m#101 | |
| Internal Link Dist (ft) | 507 | | | 781 | 1 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | | | 2738 | 178 | |

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Starvation Cap Reductn | | | | 10 | 0 | |
| Spillback Cap Reductn | | | | 0 | 0 | |
| Storage Cap Reductn | | | | 0 | 0 | |
| Reduced v/c Ratio | | | | 0.93 | 0.74 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 1 (1%), Referenced to phase 6:SBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.93 | | | |
| Intersection Signal Delay: 7.4 | | Intersection LOS: A | |
| Intersection Capacity Utilization 114.1% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 132: SB US 321 & Pinewood Road U-Turn



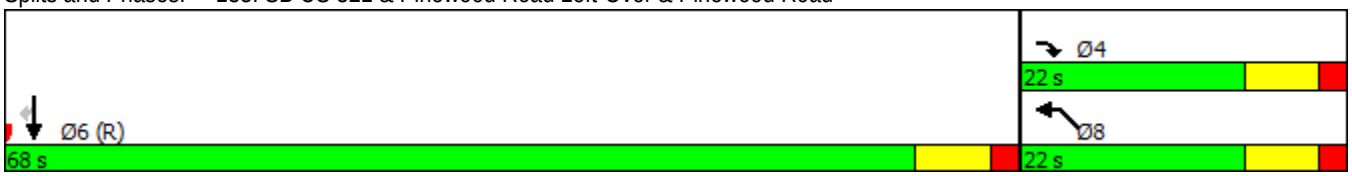
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 333 | 0 | 0 | 0 | 0 | 1864 | 211 | 192 | 0 |
| Future Volume (vph) | 0 | 0 | 333 | 0 | 0 | 0 | 0 | 1864 | 211 | 192 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 300 | | 0 | | 0 | 0 | | 0 | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 0 | 0 | | 1 | 1 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | | | | 0.850 | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2733 | 0 | 0 | 0 | 0 | 3471 | 1553 | 1736 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2733 | 0 | 0 | 0 | 0 | 3471 | 1553 | 1736 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 30 | | | 55 | | 25 | |
| Link Distance (ft) | 770 | | | | 688 | | | 243 | | 154 | |
| Travel Time (s) | 15.0 | | | | 15.6 | | | 3.0 | | 4.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 2% | 2% | 2% | 2% | 4% | 4% | 4% | 2% |
| Adj. Flow (vph) | 0 | 0 | 370 | 0 | 0 | 0 | 0 | 2071 | 234 | 213 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 370 | 0 | 0 | 0 | 0 | 2071 | 234 | 213 | 0 |
| Turn Type | | | Prot | | | | | NA | Perm | Prot | |
| Protected Phases | | | 4 | | | | | 6 | | 8 | |
| Permitted Phases | | | | | | | | | 6 | | |
| Minimum Initial (s) | | | 7.0 | | | | | 14.0 | 14.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 21.0 | 21.0 | 14.0 | |
| Total Split (s) | | | 22.0 | | | | | 68.0 | 68.0 | 22.0 | |
| Total Split (%) | | | 24.4% | | | | | 75.6% | 75.6% | 24.4% | |
| Maximum Green (s) | | | 15.0 | | | | | 61.0 | 61.0 | 15.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | 2.0 | 2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | |
| Recall Mode | | | None | | | | | C-Min | C-Min | None | |
| Act Effct Green (s) | | | 16.5 | | | | | 63.5 | 63.5 | 16.5 | |
| Actuated g/C Ratio | | | 0.18 | | | | | 0.71 | 0.71 | 0.18 | |
| v/c Ratio | | | 0.74 | | | | | 0.85 | 0.21 | 0.67 | |
| Control Delay | | | 44.4 | | | | | 5.8 | 1.9 | 43.6 | |
| Queue Delay | | | 0.0 | | | | | 0.0 | 0.0 | 0.0 | |
| Total Delay | | | 44.4 | | | | | 5.8 | 1.9 | 43.6 | |
| LOS | | | D | | | | | A | A | D | |
| Approach Delay | 44.4 | | | | | | | 5.4 | | 43.6 | |
| Approach LOS | D | | | | | | | A | | D | |
| Queue Length 50th (ft) | | | 113 | | | | | 185 | 14 | 104 | |
| Queue Length 95th (ft) | | | 167 | | | | | m253 | m15 | #183 | |

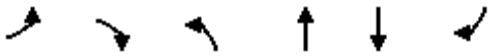
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 690 | | | | 608 | | | 163 | | 74 | |
| Turn Bay Length (ft) | | | 300 | | | | | | | | |
| Base Capacity (vph) | | | 518 | | | | | 2449 | 1096 | 328 | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Reduced v/c Ratio | | | 0.71 | | | | | 0.85 | 0.21 | 0.65 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 19 (21%), Referenced to phase 6:SBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.85 | | | |
| Intersection Signal Delay: 13.2 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

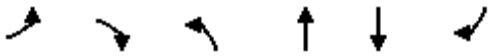
# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 133: SB US 321 & Pinewood Road Left-Over & Pinewood Road





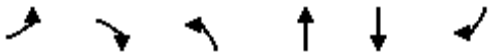
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 139 | 0 | 0 | 1459 | 0 | 0 |
| Future Volume (vph) | 139 | 0 | 0 | 1459 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 0 | 0 | 3471 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 0 | 0 | 3471 | 0 | 0 |
| Right Turn on Red | No | No | | | | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | | 55 | 55 | |
| Link Distance (ft) | 71 | | | 478 | 600 | |
| Travel Time (s) | 1.9 | | | 5.9 | 7.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 4% | 2% | 2% |
| Adj. Flow (vph) | 154 | 0 | 0 | 1621 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 154 | 0 | 0 | 1621 | 0 | 0 |
| Turn Type | Prot | | | NA | | |
| Protected Phases | 4 | | | 2 | | |
| Permitted Phases | | | | | | |
| Minimum Initial (s) | 7.0 | | | 14.0 | | |
| Minimum Split (s) | 14.0 | | | 21.0 | | |
| Total Split (s) | 22.0 | | | 68.0 | | |
| Total Split (%) | 24.4% | | | 75.6% | | |
| Maximum Green (s) | 15.0 | | | 61.0 | | |
| Yellow Time (s) | 5.0 | | | 5.0 | | |
| All-Red Time (s) | 2.0 | | | 2.0 | | |
| Total Lost Time (s) | 5.0 | | | 5.0 | | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | | |
| Recall Mode | None | | | C-Min | | |
| Act Effct Green (s) | 14.5 | | | 65.5 | | |
| Actuated g/C Ratio | 0.16 | | | 0.73 | | |
| v/c Ratio | 0.55 | | | 0.64 | | |
| Control Delay | 36.3 | | | 8.1 | | |
| Queue Delay | 0.0 | | | 0.0 | | |
| Total Delay | 36.3 | | | 8.1 | | |
| LOS | D | | | A | | |
| Approach Delay | 36.3 | | | 8.1 | | |
| Approach LOS | D | | | A | | |
| Queue Length 50th (ft) | 73 | | | 213 | | |
| Queue Length 95th (ft) | m93 | | | 299 | | |
| Internal Link Dist (ft) | 1 | | | 398 | 520 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | 328 | | | 2526 | | |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Starvation Cap Reductn | 0 | | | 0 | | |
| Spillback Cap Reductn | 0 | | | 0 | | |
| Storage Cap Reductn | 0 | | | 0 | | |
| Reduced v/c Ratio | 0.47 | | | 0.64 | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 86 (96%), Referenced to phase 2:NBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.64 | | | |
| Intersection Signal Delay: 10.6 | | Intersection LOS: B | |
| Intersection Capacity Utilization 56.4% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 134: NB US 321 & Pinewood Road U-Turn



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 118 | 1572 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 118 | 1572 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 150 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1736 | 3471 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1736 | 3471 | 0 | 0 |
| Link Speed (mph) | 30 | | | 55 | 55 | |
| Link Distance (ft) | 64 | | | 766 | 838 | |
| Travel Time (s) | 1.5 | | | 9.5 | 10.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 131 | 1747 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 131 | 1747 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 114.1% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 326 | 2075 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 326 | 2075 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 100 | | 0 | 0 |
| Storage Lanes | | 0 | 2 | | 0 | 0 |
| Taper Length (ft) | | | 100 | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 3433 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 3433 | 4988 | 0 | 0 |
| Link Speed (mph) | 30 | | | 55 | 55 | |
| Link Distance (ft) | 243 | | | 587 | 230 | |
| Travel Time (s) | 5.5 | | | 7.3 | 2.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 362 | 2306 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 362 | 2306 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

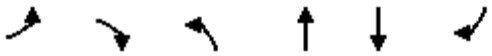
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 78.0% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 139 | 2058 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 139 | 2058 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 250 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1736 | 3471 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1736 | 3471 |
| Link Speed (mph) | 30 | | 30 | | | 55 |
| Link Distance (ft) | 71 | | 536 | | | 688 |
| Travel Time (s) | 1.6 | | 12.2 | | | 8.5 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 154 | 2287 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 154 | 2287 |
| Sign Control | Stop | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 58.7% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 192 | 1406 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 192 | 1406 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 200 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 154 | | | 600 | 166 | |
| Travel Time (s) | 1.9 | | | 7.4 | 2.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 213 | 1562 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 213 | 1562 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 86.9% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

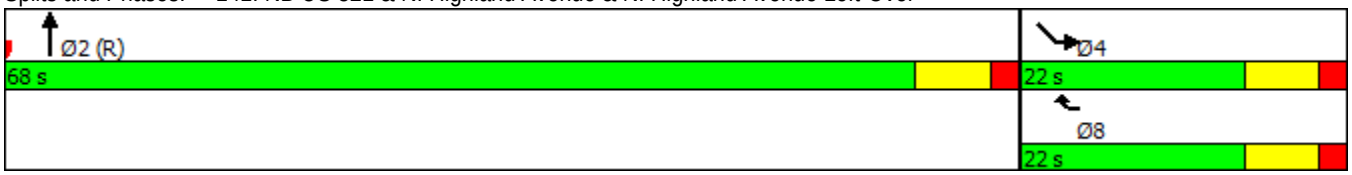
| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 145 | 0 | 1605 | 30 | 0 | 0 | 0 | 6 | 0 |
| Future Volume (vph) | 0 | 0 | 145 | 0 | 1605 | 30 | 0 | 0 | 0 | 6 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 200 | | 0 | 200 | | 300 | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 0 | 0 | | 0 | 1 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.865 | | 0.997 | | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 1596 | 0 | 3461 | 0 | 0 | 0 | 0 | 1752 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 1596 | 0 | 3461 | 0 | 0 | 0 | 0 | 1752 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 499 | | | | 224 | | | 926 | | 66 | |
| Travel Time (s) | 9.7 | | | | 2.8 | | | 11.5 | | 1.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 2% | 4% | 3% | 2% | 4% | 2% | 3% | 2% |
| Adj. Flow (vph) | 0 | 0 | 161 | 0 | 1783 | 33 | 0 | 0 | 0 | 7 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 161 | 0 | 1816 | 0 | 0 | 0 | 0 | 7 | 0 |
| Turn Type | | | Prot | | NA | | | | | Prot | |
| Protected Phases | | | 8 | | 2 | | | | | 4 | |
| Permitted Phases | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 14.0 | | | | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 21.0 | | | | | 14.0 | |
| Total Split (s) | | | 22.0 | | 68.0 | | | | | 22.0 | |
| Total Split (%) | | | 24.4% | | 75.6% | | | | | 24.4% | |
| Maximum Green (s) | | | 15.0 | | 61.0 | | | | | 15.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | | | | | 2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | | | | | 3.0 | |
| Recall Mode | | | Min | | C-Min | | | | | None | |
| Act Effct Green (s) | | | 15.0 | | 65.0 | | | | | 15.0 | |
| Actuated g/C Ratio | | | 0.17 | | 0.72 | | | | | 0.17 | |
| v/c Ratio | | | 0.61 | | 0.73 | | | | | 0.02 | |
| Control Delay | | | 44.6 | | 4.7 | | | | | 36.8 | |
| Queue Delay | | | 0.0 | | 0.0 | | | | | 0.0 | |
| Total Delay | | | 44.6 | | 4.7 | | | | | 36.8 | |
| LOS | | | D | | A | | | | | D | |
| Approach Delay | 44.6 | | | | 4.7 | | | | | 36.8 | |
| Approach LOS | D | | | | A | | | | | D | |
| Queue Length 50th (ft) | | | 84 | | 84 | | | | | 4 | |
| Queue Length 95th (ft) | | | 147 | | 157 | | | | | m5 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 419 | | | | 144 | | | 846 | | 1 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 301 | | 2501 | | | | | 330 | |
| Starvation Cap Reductn | | | 0 | | 0 | | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | | | | | 0 | |
| Reduced v/c Ratio | | | 0.53 | | 0.73 | | | | | 0.02 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 8 (9%), Referenced to phase 2:NBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.73 | | | |
| Intersection Signal Delay: 8.1 | | Intersection LOS: A | |
| Intersection Capacity Utilization 62.6% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 141: NB US 321 & N. Highland Avenue & N. Highland Avenue Left-Over



| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 2022 | 122 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 2022 | 122 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 3471 | 1736 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 3471 | 1736 | 0 |
| Right Turn on Red | | No | | | No | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 30 | | | 55 | 25 | |
| Link Distance (ft) | 894 | | | 2338 | 46 | |
| Travel Time (s) | 20.3 | | | 29.0 | 1.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 4% | 2% |
| Adj. Flow (vph) | 0 | 0 | 0 | 2247 | 136 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 2247 | 136 | 0 |
| Turn Type | | | | NA | Prot | |
| Protected Phases | | | | 6 | 8 | |
| Permitted Phases | | | | | | |
| Minimum Initial (s) | | | | 14.0 | 7.0 | |
| Minimum Split (s) | | | | 21.0 | 14.0 | |
| Total Split (s) | | | | 74.0 | 16.0 | |
| Total Split (%) | | | | 82.2% | 17.8% | |
| Maximum Green (s) | | | | 67.0 | 9.0 | |
| Yellow Time (s) | | | | 5.0 | 5.0 | |
| All-Red Time (s) | | | | 2.0 | 2.0 | |
| Total Lost Time (s) | | | | 5.0 | 5.0 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | |
| Recall Mode | | | | C-Min | None | |
| Act Effct Green (s) | | | | 68.9 | 11.1 | |
| Actuated g/C Ratio | | | | 0.77 | 0.12 | |
| v/c Ratio | | | | 0.85 | 0.64 | |
| Control Delay | | | | 11.1 | 39.0 | |
| Queue Delay | | | | 0.0 | 0.0 | |
| Total Delay | | | | 11.1 | 39.0 | |
| LOS | | | | B | D | |
| Approach Delay | | | | 11.1 | 39.0 | |
| Approach LOS | | | | B | D | |
| Queue Length 50th (ft) | | | | 350 | 74 | |
| Queue Length 95th (ft) | | | | 468 | m103 | |
| Internal Link Dist (ft) | 814 | | | 2258 | 1 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | | | 2670 | 218 | |

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Starvation Cap Reductn | | | | 0 | 0 | |
| Spillback Cap Reductn | | | | 0 | 0 | |
| Storage Cap Reductn | | | | 0 | 0 | |
| Reduced v/c Ratio | | | | 0.84 | 0.62 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 73 (81%), Referenced to phase 6:SBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.85 | | | |
| Intersection Signal Delay: 12.7 | | Intersection LOS: B | |
| Intersection Capacity Utilization 108.4% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

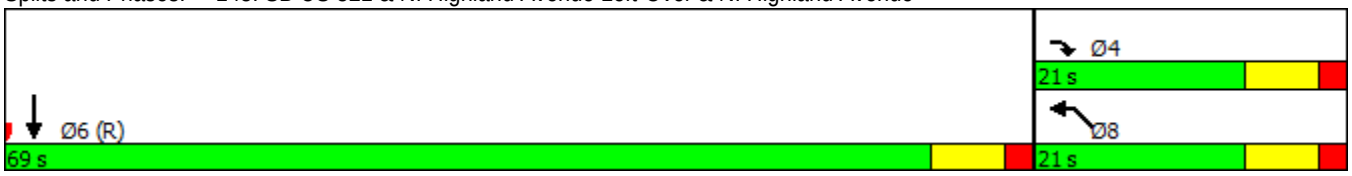
Splits and Phases: 142: SB US 321 & N. Highland Avenue U-Turn

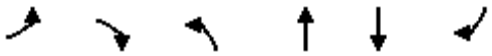
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 231 | 0 | 0 | 0 | 0 | 2103 | 35 | 6 | 0 |
| Future Volume (vph) | 0 | 0 | 231 | 0 | 0 | 0 | 0 | 2103 | 35 | 6 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 |
| Frt | | | 0.865 | | | | | 0.998 | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 1611 | 0 | 0 | 0 | 0 | 3465 | 0 | 1770 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 1611 | 0 | 0 | 0 | 0 | 3465 | 0 | 1770 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 30 | | | 55 | | 25 | |
| Link Distance (ft) | 804 | | | | 861 | | | 210 | | 86 | |
| Travel Time (s) | 15.7 | | | | 19.6 | | | 2.6 | | 2.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 4% | 4% | 2% | 4% | 2% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 257 | 0 | 0 | 0 | 0 | 2337 | 39 | 7 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 257 | 0 | 0 | 0 | 0 | 2376 | 0 | 7 | 0 |
| Turn Type | | | Prot | | | | | NA | | Prot | |
| Protected Phases | | | 4 | | | | | 6 | | 8 | |
| Permitted Phases | | | 4 | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | | | | 14.0 | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 21.0 | | 14.0 | |
| Total Split (s) | | | 21.0 | | | | | 69.0 | | 21.0 | |
| Total Split (%) | | | 23.3% | | | | | 76.7% | | 23.3% | |
| Maximum Green (s) | | | 14.0 | | | | | 62.0 | | 14.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | | 2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | | 3.0 | |
| Recall Mode | | | None | | | | | C-Max | | Min | |
| Act Effct Green (s) | | | 16.0 | | | | | 64.0 | | 16.0 | |
| Actuated g/C Ratio | | | 0.18 | | | | | 0.71 | | 0.18 | |
| v/c Ratio | | | 0.90 | | | | | 0.96 | | 0.02 | |
| Control Delay | | | 70.9 | | | | | 17.6 | | 30.7 | |
| Queue Delay | | | 0.0 | | | | | 3.0 | | 0.0 | |
| Total Delay | | | 70.9 | | | | | 20.6 | | 30.7 | |
| LOS | | | E | | | | | C | | C | |
| Approach Delay | 70.9 | | | | | | | 20.6 | | 30.7 | |
| Approach LOS | E | | | | | | | C | | C | |
| Queue Length 50th (ft) | | | 144 | | | | | 591 | | 4 | |
| Queue Length 95th (ft) | | | #285 | | | | | #850 | | m5 | |
| Internal Link Dist (ft) | 724 | | | | 781 | | | 130 | | 6 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 286 | | | | | 2464 | | 314 | |

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Starvation Cap Reductn | | | 0 | | | | | 0 | | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 59 | | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | | 0 | |
| Reduced v/c Ratio | | | 0.90 | | | | | 0.99 | | 0.02 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 88 (98%), Referenced to phase 6:SBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.96 | | | |
| Intersection Signal Delay: 25.6 | | Intersection LOS: C | |
| Intersection Capacity Utilization 81.9% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 143: SB US 321 & N. Highland Avenue Left-Over & N. Highland Avenue





| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 122 | 1628 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 122 | 1628 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 150 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1736 | 3471 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1736 | 3471 | 0 | 0 |
| Link Speed (mph) | 30 | | | 55 | 55 | |
| Link Distance (ft) | 46 | | | 926 | 2360 | |
| Travel Time (s) | 1.0 | | | 11.5 | 29.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 136 | 1809 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 136 | 1809 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

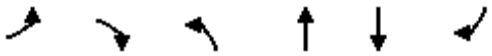
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 108.4% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 6 | 2138 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 6 | 2138 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 50 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1752 | 3471 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1752 | 3471 |
| Link Speed (mph) | 30 | | 30 | | | 55 |
| Link Distance (ft) | 66 | | 210 | | | 894 |
| Travel Time (s) | 1.5 | | 4.8 | | | 11.1 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 3% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 7 | 2376 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 7 | 2376 |
| Sign Control | Stop | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 71.0% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 6 | 1635 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 6 | 1635 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 50 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1770 | 3471 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1770 | 3471 | 0 | 0 |
| Link Speed (mph) | 30 | | | 55 | 55 | |
| Link Distance (ft) | 86 | | | 838 | 224 | |
| Travel Time (s) | 2.0 | | | 10.4 | 2.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 7 | 1817 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 7 | 1817 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 48.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 2022 | 0 | 1628 |
| Future Volume (vph) | 0 | 0 | 0 | 2022 | 0 | 1628 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 0.88 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 0 | 0 | 3471 | 0 | 2733 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 0 | 0 | 3471 | 0 | 2733 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 2338 | | | 158 | 2360 | |
| Travel Time (s) | 29.0 | | | 2.0 | 29.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 2% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 2247 | 0 | 1809 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 2247 | 0 | 1809 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 60.3% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 1459 | 0 | 0 | 0 | 2058 |
| Future Volume (vph) | 0 | 1459 | 0 | 0 | 0 | 2058 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 0.88 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 3471 | 0 | 0 | 0 | 2733 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 3471 | 0 | 0 | 0 | 2733 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 352 | 478 | | 536 | |
| Travel Time (s) | | 4.4 | 5.9 | | 6.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 4% | 2% | 2% | 2% | 4% |
| Adj. Flow (vph) | 0 | 1621 | 0 | 0 | 0 | 2287 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 1621 | 0 | 0 | 0 | 2287 |
| Sign Control | | Free | Stop | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 75.3% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

## Summary of All Intervals

| Start Time | 6:50 |
|---|---|
| End Time | 8:00 |
| Total Time (min) | 70 |
| Time Recorded (min) | 60 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 4821 |
| Vehs Exited | 4848 |
| Starting Vehs | 239 |
| Ending Vehs | 212 |
| Travel Distance (mi) | 7320 |
| Travel Time (hr) | 239.7 |
| Total Delay (hr) | 90.2 |
| Total Stops | 4845 |
| Fuel Used (gal) | 277.2 |

## Interval #0 Information Seeding

| Start Time | 6:50 |
|---|---|
| End Time | 7:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 7:00 |
|---|---|
| End Time | 8:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 4821 |
|---|---|
| Vehs Exited | 4848 |
| Starting Vehs | 239 |
| Ending Vehs | 212 |
| Travel Distance (mi) | 7320 |
| Travel Time (hr) | 239.7 |
| Total Delay (hr) | 90.2 |
| Total Stops | 4845 |
| Fuel Used (gal) | 277.2 |

## Intersection: 1: Dudley Shoals

| Movement | EB |
|---|---|
| Directions Served | LT |
| Maximum Queue (ft) | 31 |
| Average Queue (ft) | 4 |
| 95th Queue (ft) | 21 |
| Link Distance (ft) | 1029 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 2: Dudley Shoals

| Movement | EB | NB | SB |
|---|---|---|---|
| Directions Served | LR | LT | TR |
| Maximum Queue (ft) | 175 | 55 | 51 |
| Average Queue (ft) | 72 | 15 | 2 |
| 95th Queue (ft) | 119 | 45 | 19 |
| Link Distance (ft) | 582 | 694 | 380 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 7: US 321

| Movement | EB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 200 |
| Average Queue (ft) | 76 |
| 95th Queue (ft) | 150 |
| Link Distance (ft) | 970 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 131: NB US 321 & Pinewood Road & Pinewood Road Left-Over

| Movement | WB | WB | NB | NB | SE | SE |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | < | L |
| Maximum Queue (ft) | 159 | 156 | 184 | 180 | 176 | 96 |
| Average Queue (ft) | 76 | 70 | 135 | 142 | 102 | 57 |
| 95th Queue (ft) | 128 | 120 | 192 | 196 | 159 | 94 |
| Link Distance (ft) | 1112 | | 82 | 82 | 117 | 117 |
| Upstream Blk Time (%) | | | 16 | 19 | 10 | |
| Queuing Penalty (veh) | | | 74 | 91 | 17 | |
| Storage Bay Dist (ft) | | 200 | | | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 132: SB US 321 & Pinewood Road U-Turn

| Movement | SB | SB | NW |
|---|---|---|---|
| Directions Served | T | T | L |
| Maximum Queue (ft) | 309 | 397 | 79 |
| Average Queue (ft) | 120 | 135 | 75 |
| 95th Queue (ft) | 227 | 242 | 88 |
| Link Distance (ft) | 742 | 742 | 22 |
| Upstream Blk Time (%) | | | 78 |
| Queuing Penalty (veh) | | | 93 |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 133: SB US 321 & Pinewood Road Left-Over & Pinewood Road

| Movement | EB | EB | SB | SB | NW |
|---|---|---|---|---|---|
| Directions Served | > | > | T | T | L |
| Maximum Queue (ft) | 299 | 281 | 217 | 221 | 160 |
| Average Queue (ft) | 173 | 127 | 90 | 111 | 116 |
| 95th Queue (ft) | 268 | 250 | 171 | 196 | 162 |
| Link Distance (ft) | 696 | | 108 | 108 | 65 |
| Upstream Blk Time (%) | | | 3 | 7 | 33 |
| Queuing Penalty (veh) | | | 21 | 46 | 64 |
| Storage Bay Dist (ft) | | 300 | | | |
| Storage Blk Time (%) | 0 | 0 | | | |
| Queuing Penalty (veh) | 0 | 0 | | | |

## Intersection: 134: NB US 321 & Pinewood Road U-Turn

| Movement | EB | NB | NB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 100 | 222 | 225 |
| Average Queue (ft) | 67 | 86 | 89 |
| 95th Queue (ft) | 98 | 156 | 163 |
| Link Distance (ft) | 19 | 432 | 432 |
| Upstream Blk Time (%) | 64 | | |
| Queuing Penalty (veh) | 88 | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 135: NB US 321 & Pinewood Road U-Turn

| Movement | NB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 122 |
| Average Queue (ft) | 45 |
| 95th Queue (ft) | 111 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 150 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 136: SB US 321 & Pinewood Road Left-Over

| Movement | SB | SB |
|---|---|---|
| Directions Served | T | T |
| Maximum Queue (ft) | 133 | 40 |
| Average Queue (ft) | 5 | 3 |
| 95th Queue (ft) | 45 | 20 |
| Link Distance (ft) | 536 | 536 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 137: SB US 321 & Pinewood Road U-Turn

| Movement | SB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 137 |
| Average Queue (ft) | 44 |
| 95th Queue (ft) | 114 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 250 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 138: NB US 321 & Pinewood Road Left-Over

| Movement | NB | NB | NB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 94 | 146 | 151 |
| Average Queue (ft) | 9 | 29 | 34 |
| 95th Queue (ft) | 47 | 90 | 104 |
| Link Distance (ft) | | 545 | 545 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | 200 | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 141: NB US 321 & N. Highland Avenue & N. Highland Avenue Left-Over

| Movement | WB | NB | NB | SE |
|---|---|---|---|---|
| Directions Served | > | T | TR | L |
| Maximum Queue (ft) | 188 | 222 | 222 | 45 |
| Average Queue (ft) | 90 | 86 | 87 | 8 |
| 95th Queue (ft) | 155 | 180 | 180 | 29 |
| Link Distance (ft) | 452 | 163 | 163 | 6 |
| Upstream Blk Time (%) | | 1 | 1 | 8 |
| Queuing Penalty (veh) | | 6 | 7 | 0 |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 142: SB US 321 & N. Highland Avenue U-Turn

| Movement | SB | SB | NW |
|---|---|---|---|
| Directions Served | T | T | L |
| Maximum Queue (ft) | 220 | 222 | 71 |
| Average Queue (ft) | 116 | 116 | 49 |
| 95th Queue (ft) | 203 | 208 | 71 |
| Link Distance (ft) | 2297 | 2297 | 2 |
| Upstream Blk Time (%) | | | 51 |
| Queuing Penalty (veh) | | | 63 |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 143: SB US 321 & N. Highland Avenue Left-Over & N. Highland Avenue

| Movement | EB | SB | SB | NW |
|---|---|---|---|---|
| Directions Served | > | T | TR | L |
| Maximum Queue (ft) | 265 | 239 | 234 | 25 |
| Average Queue (ft) | 146 | 166 | 172 | 3 |
| 95th Queue (ft) | 232 | 252 | 256 | 16 |
| Link Distance (ft) | 716 | 157 | 157 | 22 |
| Upstream Blk Time (%) | | 11 | 11 | 4 |
| Queuing Penalty (veh) | | 122 | 120 | 0 |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 145: NB US 321 & N. Highland Avenue U-Turn

| Movement | NB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 112 |
| Average Queue (ft) | 34 |
| 95th Queue (ft) | 89 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 150 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 146: SB US 321 & N. Highland Avenue Left-Over

| Movement | SB | SB |
|---|---|---|
| Directions Served | T | T |
| Maximum Queue (ft) | 204 | 162 |
| Average Queue (ft) | 30 | 35 |
| 95th Queue (ft) | 118 | 122 |
| Link Distance (ft) | 851 | 851 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | 4 | |
| Queuing Penalty (veh) | 0 | |

## Intersection: 148: NB US 321 & N. Highland Avenue Left-Over

| Movement | NB | NB |
|---|---|---|
| Directions Served | T | T |
| Maximum Queue (ft) | 50 | 104 |
| Average Queue (ft) | 3 | 5 |
| 95th Queue (ft) | 23 | 37 |
| Link Distance (ft) | 795 | 795 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | 0 | |
| Queuing Penalty (veh) | 0 | |

## Intersection: 991: SB US 321/US 321 & NB US 321

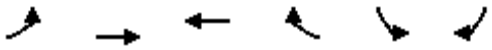
| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 992: US 321/NB US 321 & SB US 321

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

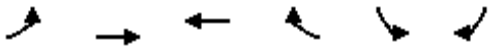
## Network Summary

Network wide Queuing Penalty: 813



| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 10 | 139 | 116 | 75 | 0 | 0 |
| Future Volume (vph) | 10 | 139 | 116 | 75 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.947 | | | |
| Flt Protected | | 0.997 | | | | |
| Satd. Flow (prot) | 0 | 1857 | 1764 | 0 | 0 | 0 |
| Flt Permitted | | 0.997 | | | | |
| Satd. Flow (perm) | 0 | 1857 | 1764 | 0 | 0 | 0 |
| Link Speed (mph) | | 35 | 35 | | 55 | |
| Link Distance (ft) | | 1050 | 1626 | | 1046 | |
| Travel Time (s) | | 20.5 | 31.7 | | 13.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 11 | 154 | 129 | 83 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 165 | 212 | 0 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |

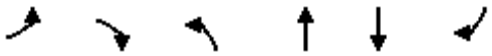
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 18.9% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 10 | 139 | 116 | 75 | 0 | 0 |
| Future Volume (Veh/h) | 10 | 139 | 116 | 75 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 11 | 154 | 129 | 83 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 212 | | | | 346 | 170 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 212 | | | | 346 | 170 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 99 | | | | 100 | 100 |
| cM capacity (veh/h) | 1358 | | | | 645 | 873 |

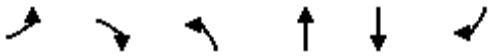
| Direction, Lane # | EB 1 | WB 1 |
|---|---|---|
| Volume Total | 165 | 212 |
| Volume Left | 11 | 0 |
| Volume Right | 0 | 83 |
| cSH | 1358 | 1700 |
| Volume to Capacity | 0.01 | 0.12 |
| Queue Length 95th (ft) | 1 | 0 |
| Control Delay (s) | 0.6 | 0.0 |
| Lane LOS | A | |
| Approach Delay (s) | 0.6 | 0.0 |
| Approach LOS | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.3 | | |
| Intersection Capacity Utilization | 18.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 273 | 85 | 68 | 71 | 106 | 163 |
| Future Volume (vph) | 273 | 85 | 68 | 71 | 106 | 163 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | 0.968 | | | | 0.918 | |
| Flt Protected | 0.963 | | | 0.976 | | |
| Satd. Flow (prot) | 1736 | 0 | 0 | 1818 | 1710 | 0 |
| Flt Permitted | 0.963 | | | 0.976 | | |
| Satd. Flow (perm) | 1736 | 0 | 0 | 1818 | 1710 | 0 |
| Link Speed (mph) | 45 | | | 45 | 45 | |
| Link Distance (ft) | 639 | | | 746 | 415 | |
| Travel Time (s) | 9.7 | | | 11.3 | 6.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 303 | 94 | 76 | 79 | 118 | 181 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 397 | 0 | 0 | 155 | 299 | 0 |
| Sign Control | Stop | | | Free | Free | |

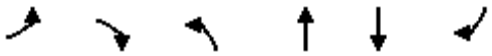
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 53.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 273 | 85 | 68 | 71 | 106 | 163 |
| Future Volume (Veh/h) | 273 | 85 | 68 | 71 | 106 | 163 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 303 | 94 | 76 | 79 | 118 | 181 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 440 | 208 | 299 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 440 | 208 | 299 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 44 | 89 | 94 | | | |
| cM capacity (veh/h) | 540 | 832 | 1262 | | | |

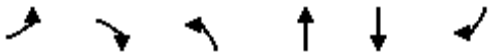
| Direction, Lane # | EB 1 | NB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 397 | 155 | 299 |
| Volume Left | 303 | 76 | 0 |
| Volume Right | 94 | 0 | 181 |
| cSH | 589 | 1262 | 1700 |
| Volume to Capacity | 0.67 | 0.06 | 0.18 |
| Queue Length 95th (ft) | 128 | 5 | 0 |
| Control Delay (s) | 22.8 | 4.2 | 0.0 |
| Lane LOS | C | A | |
| Approach Delay (s) | 22.8 | 4.2 | 0.0 |
| Approach LOS | C | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 11.4 | | |
| Intersection Capacity Utilization | 53.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 85 | 0 | 2170 | 1384 | 0 |
| Future Volume (vph) | 0 | 85 | 0 | 2170 | 1384 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 |
| Frt | | 0.865 | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1611 | 0 | 3539 | 3539 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1611 | 0 | 3539 | 3539 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 1046 | | | 2666 | 352 | |
| Travel Time (s) | 13.0 | | | 33.0 | 4.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Adj. Flow (vph) | 0 | 94 | 0 | 2411 | 1538 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 94 | 0 | 2411 | 1538 | 0 |
| Sign Control | Stop | | | Free | Free | |

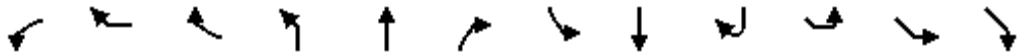
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 63.3% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 85 | 0 | 2170 | 1384 | 0 |
| Future Volume (Veh/h) | 0 | 85 | 0 | 2170 | 1384 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 94 | 0 | 2411 | 1538 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 2744 | 769 | 1538 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 2744 | 769 | 1538 | | | |
| tC, single (s) | 6.8 | 6.9 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 73 | 100 | | | |
| cM capacity (veh/h) | 16 | 344 | 428 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|---|
| Volume Total | 94 | 1206 | 1206 | 769 | 769 |
| Volume Left | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 94 | 0 | 0 | 0 | 0 |
| cSH | 344 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.27 | 0.71 | 0.71 | 0.45 | 0.45 |
| Queue Length 95th (ft) | 27 | 0 | 0 | 0 | 0 |
| Control Delay (s) | 19.4 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | C | | | | |
| Approach Delay (s) | 19.4 | 0.0 | | 0.0 | |
| Approach LOS | C | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 0.5 | | | |
| Intersection Capacity Utilization | 63.3% | ICU Level of Service | | B |
| Analysis Period (min) | 15 | | | |



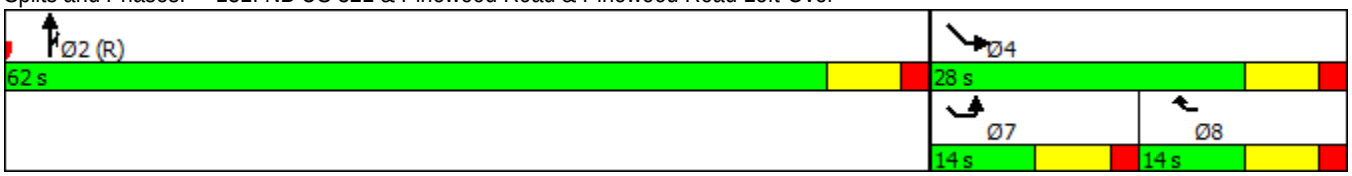
| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL2 | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 223 | 0 | 1957 | 230 | 0 | 0 | 0 | 35 | 138 | 0 |
| Future Volume (vph) | 0 | 0 | 223 | 0 | 1957 | 230 | 0 | 0 | 0 | 35 | 138 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 200 | | 0 | | 0 | 0 | | 0 | | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 1 | 0 | | 0 | | 2 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2787 | 0 | 3471 | 1583 | 0 | 0 | 0 | 1770 | 1770 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2787 | 0 | 3471 | 1583 | 0 | 0 | 0 | 1770 | 1770 | 0 |
| Right Turn on Red | | | No | | | No | | | No | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | | 25 | |
| Link Distance (ft) | 1199 | | | | 166 | | | 766 | | | 230 | |
| Travel Time (s) | 23.4 | | | | 2.1 | | | 9.5 | | | 6.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 4% | 2% | 2% | 2% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 248 | 0 | 2174 | 256 | 0 | 0 | 0 | 39 | 153 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 248 | 0 | 2174 | 256 | 0 | 0 | 0 | 39 | 153 | 0 |
| Turn Type | | | Prot | | NA | Prot | | | | Prot | Prot | |
| Protected Phases | | | 8 | | 2 | 2 | | | | 7 | 4 | |
| Permitted Phases | | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 14.0 | 14.0 | | | | 7.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 21.0 | 21.0 | | | | 14.0 | 14.0 | |
| Total Split (s) | | | 14.0 | | 62.0 | 62.0 | | | | 14.0 | 28.0 | |
| Total Split (%) | | | 15.6% | | 68.9% | 68.9% | | | | 15.6% | 31.1% | |
| Maximum Green (s) | | | 7.0 | | 55.0 | 55.0 | | | | 7.0 | 21.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | 5.0 | | | | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | 2.0 | | | | 2.0 | 2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | 5.0 | | | | 5.0 | 5.0 | |
| Lead/Lag | | | Lag | | | | | | | Lead | | |
| Lead-Lag Optimize? | | | Yes | | | | | | | Yes | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | 3.0 | | | | 3.0 | 3.0 | |
| Recall Mode | | | None | | C-Min | C-Min | | | | None | None | |
| Act Effct Green (s) | | | 10.9 | | 60.7 | 60.7 | | | | 9.0 | 19.3 | |
| Actuated g/C Ratio | | | 0.12 | | 0.67 | 0.67 | | | | 0.10 | 0.21 | |
| v/c Ratio | | | 0.73 | | 0.93 | 0.24 | | | | 0.22 | 0.40 | |
| Control Delay | | | 53.9 | | 12.1 | 2.9 | | | | 35.7 | 25.4 | |
| Queue Delay | | | 0.0 | | 0.0 | 0.0 | | | | 0.0 | 0.0 | |
| Total Delay | | | 53.9 | | 12.1 | 2.9 | | | | 35.7 | 25.4 | |
| LOS | | | D | | B | A | | | | D | C | |
| Approach Delay | 53.9 | | | | 11.1 | | | | | | 27.5 | |
| Approach LOS | D | | | | B | | | | | | C | |
| Queue Length 50th (ft) | | | 80 | | 527 | 27 | | | | 21 | 74 | |
| Queue Length 95th (ft) | | | #157 | | m#751 | m28 | | | | m34 | 101 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL2 | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 1119 | | | | 86 | | | 686 | | | 150 | |
| Turn Bay Length (ft) | | | 200 | | | | | | | | | |
| Base Capacity (vph) | | | 338 | | 2340 | 1067 | | | | 177 | 452 | |
| Starvation Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | 0 | |
| Reduced v/c Ratio | | | 0.73 | | 0.93 | 0.24 | | | | 0.22 | 0.34 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 86 (96%), Referenced to phase 2:NBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.93 | | | |
| Intersection Signal Delay: 15.9 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 131: NB US 321 & Pinewood Road & Pinewood Road Left-Over



| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 1425 | 79 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 1425 | 79 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 3471 | 1736 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 3471 | 1736 | 0 |
| Right Turn on Red | | No | | | No | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 30 | | | 55 | 25 | |
| Link Distance (ft) | 587 | | | 861 | 64 | |
| Travel Time (s) | 13.3 | | | 10.7 | 1.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 4% | 2% |
| Adj. Flow (vph) | 0 | 0 | 0 | 1583 | 88 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 1583 | 88 | 0 |
| Turn Type | | | | NA | Prot | |
| Protected Phases | | | | 6 | 8 | |
| Permitted Phases | | | | | | |
| Minimum Initial (s) | | | | 14.0 | 7.0 | |
| Minimum Split (s) | | | | 21.0 | 14.0 | |
| Total Split (s) | | | | 72.0 | 18.0 | |
| Total Split (%) | | | | 80.0% | 20.0% | |
| Maximum Green (s) | | | | 65.0 | 11.0 | |
| Yellow Time (s) | | | | 5.0 | 5.0 | |
| All-Red Time (s) | | | | 2.0 | 2.0 | |
| Total Lost Time (s) | | | | 5.0 | 5.0 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | |
| Recall Mode | | | | C-Min | None | |
| Act Effct Green (s) | | | | 71.8 | 12.0 | |
| Actuated g/C Ratio | | | | 0.80 | 0.13 | |
| v/c Ratio | | | | 0.57 | 0.38 | |
| Control Delay | | | | 3.2 | 42.7 | |
| Queue Delay | | | | 0.0 | 0.0 | |
| Total Delay | | | | 3.2 | 42.7 | |
| LOS | | | | A | D | |
| Approach Delay | | | | 3.2 | 42.7 | |
| Approach LOS | | | | A | D | |
| Queue Length 50th (ft) | | | | 74 | 53 | |
| Queue Length 95th (ft) | | | | 157 | m50 | |
| Internal Link Dist (ft) | 507 | | | 781 | 1 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | | | 2790 | 262 | |

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Starvation Cap Reductn | | | | 0 | 0 | |
| Spillback Cap Reductn | | | | 0 | 0 | |
| Storage Cap Reductn | | | | 0 | 0 | |
| Reduced v/c Ratio | | | | 0.57 | 0.34 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 32 (36%), Referenced to phase 6:SBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.57 | | | |
| Intersection Signal Delay: 5.3 | | Intersection LOS: A | |
| Intersection Capacity Utilization 105.9% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 132: SB US 321 & Pinewood Road U-Turn

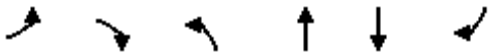
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 403 | 0 | 0 | 0 | 0 | 1192 | 139 | 194 | 0 |
| Future Volume (vph) | 0 | 0 | 403 | 0 | 0 | 0 | 0 | 1192 | 139 | 194 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 300 | | 0 | | 0 | 0 | | 0 | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 0 | 0 | | 1 | 1 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | | | | 0.850 | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2733 | 0 | 0 | 0 | 0 | 3471 | 1553 | 1736 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2733 | 0 | 0 | 0 | 0 | 3471 | 1553 | 1736 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 30 | | | 55 | | 25 | |
| Link Distance (ft) | 770 | | | | 688 | | | 243 | | 154 | |
| Travel Time (s) | 15.0 | | | | 15.6 | | | 3.0 | | 4.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 2% | 2% | 2% | 2% | 4% | 4% | 4% | 2% |
| Adj. Flow (vph) | 0 | 0 | 448 | 0 | 0 | 0 | 0 | 1324 | 154 | 216 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 448 | 0 | 0 | 0 | 0 | 1324 | 154 | 216 | 0 |
| Turn Type | | | Prot | | | | | NA | Perm | Prot | |
| Protected Phases | | | 4 | | | | | 6 | | 8 | |
| Permitted Phases | | | | | | | | | 6 | | |
| Minimum Initial (s) | | | 7.0 | | | | | 14.0 | 14.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 21.0 | 21.0 | 14.0 | |
| Total Split (s) | | | 31.0 | | | | | 59.0 | 59.0 | 31.0 | |
| Total Split (%) | | | 34.4% | | | | | 65.6% | 65.6% | 34.4% | |
| Maximum Green (s) | | | 24.0 | | | | | 52.0 | 52.0 | 24.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | 2.0 | 2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | |
| Recall Mode | | | None | | | | | C-Min | C-Min | None | |
| Act Effct Green (s) | | | 21.6 | | | | | 58.4 | 58.4 | 21.6 | |
| Actuated g/C Ratio | | | 0.24 | | | | | 0.65 | 0.65 | 0.24 | |
| v/c Ratio | | | 0.68 | | | | | 0.59 | 0.15 | 0.52 | |
| Control Delay | | | 36.3 | | | | | 5.5 | 3.2 | 33.4 | |
| Queue Delay | | | 0.0 | | | | | 0.0 | 0.0 | 0.0 | |
| Total Delay | | | 36.3 | | | | | 5.5 | 3.2 | 33.4 | |
| LOS | | | D | | | | | A | A | C | |
| Approach Delay | 36.3 | | | | | | | 5.2 | | 33.4 | |
| Approach LOS | D | | | | | | | A | | C | |
| Queue Length 50th (ft) | | | 131 | | | | | 102 | 12 | 98 | |
| Queue Length 95th (ft) | | | 176 | | | | | 36 | 12 | m96 | |

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 690 | | | | 608 | | | 163 | | 74 | |
| Turn Bay Length (ft) | | | 300 | | | | | | | | |
| Base Capacity (vph) | | | 790 | | | | | 2251 | 1007 | 501 | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Reduced v/c Ratio | | | 0.57 | | | | | 0.59 | 0.15 | 0.43 | |

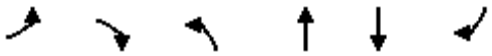
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 36 (40%), Referenced to phase 6:SBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.68 | | | |
| Intersection Signal Delay: 14.6 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 133: SB US 321 & Pinewood Road Left-Over & Pinewood Road



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 211 | 0 | 0 | 2170 | 0 | 0 |
| Future Volume (vph) | 211 | 0 | 0 | 2170 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 0 | 0 | 3471 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 0 | 0 | 3471 | 0 | 0 |
| Right Turn on Red | No | No | | | | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | | 55 | 55 | |
| Link Distance (ft) | 71 | | | 478 | 600 | |
| Travel Time (s) | 1.9 | | | 5.9 | 7.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 4% | 2% | 2% |
| Adj. Flow (vph) | 234 | 0 | 0 | 2411 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 234 | 0 | 0 | 2411 | 0 | 0 |
| Turn Type | Prot | | | NA | | |
| Protected Phases | 4 | | | 2 | | |
| Permitted Phases | | | | | | |
| Minimum Initial (s) | 7.0 | | | 14.0 | | |
| Minimum Split (s) | 14.0 | | | 21.0 | | |
| Total Split (s) | 19.0 | | | 71.0 | | |
| Total Split (%) | 21.1% | | | 78.9% | | |
| Maximum Green (s) | 12.0 | | | 64.0 | | |
| Yellow Time (s) | 5.0 | | | 5.0 | | |
| All-Red Time (s) | 2.0 | | | 2.0 | | |
| Total Lost Time (s) | 5.0 | | | 5.0 | | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | | |
| Recall Mode | None | | | C-Min | | |
| Act Effct Green (s) | 14.0 | | | 66.0 | | |
| Actuated g/C Ratio | 0.16 | | | 0.73 | | |
| v/c Ratio | 0.87 | | | 0.95 | | |
| Control Delay | 61.3 | | | 20.8 | | |
| Queue Delay | 0.0 | | | 0.0 | | |
| Total Delay | 61.3 | | | 20.8 | | |
| LOS | E | | | C | | |
| Approach Delay | 61.3 | | | 20.8 | | |
| Approach LOS | E | | | C | | |
| Queue Length 50th (ft) | 137 | | | 520 | | |
| Queue Length 95th (ft) | #259 | | | #853 | | |
| Internal Link Dist (ft) | 1 | | | 398 | 520 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | 270 | | | 2545 | | |

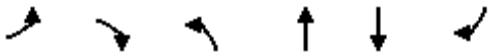


| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Starvation Cap Reductn | 0 | | | 0 | | |
| Spillback Cap Reductn | 0 | | | 0 | | |
| Storage Cap Reductn | 0 | | | 0 | | |
| Reduced v/c Ratio | 0.87 | | | 0.95 | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 68 (76%), Referenced to phase 2:NBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.95 | | | |
| Intersection Signal Delay: 24.3 | | Intersection LOS: C | |
| Intersection Capacity Utilization 80.0% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 134: NB US 321 & Pinewood Road U-Turn



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 79 | 2136 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 79 | 2136 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 150 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1736 | 3471 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1736 | 3471 | 0 | 0 |
| Link Speed (mph) | 30 | | | 55 | 55 | |
| Link Distance (ft) | 64 | | | 766 | 838 | |
| Travel Time (s) | 1.5 | | | 9.5 | 10.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 88 | 2373 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 88 | 2373 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

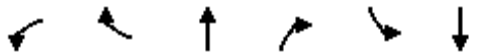
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 105.9% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 173 | 1331 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 173 | 1331 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 100 | | 0 | 0 |
| Storage Lanes | | 0 | 2 | | 0 | 0 |
| Taper Length (ft) | | | 100 | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 3433 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 3433 | 4988 | 0 | 0 |
| Link Speed (mph) | 30 | | | 55 | 55 | |
| Link Distance (ft) | 243 | | | 587 | 230 | |
| Travel Time (s) | 5.5 | | | 7.3 | 2.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 192 | 1479 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 192 | 1479 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 53.6% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

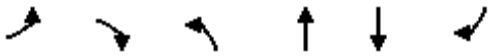
Intersection Sign configuration not allowed in HCM analysis.



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 211 | 1384 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 211 | 1384 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 250 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1736 | 3471 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1736 | 3471 |
| Link Speed (mph) | 30 | | 30 | | | 55 |
| Link Distance (ft) | 71 | | 536 | | | 688 |
| Travel Time (s) | 1.6 | | 12.2 | | | 8.5 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 234 | 1538 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 234 | 1538 |
| Sign Control | Stop | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 78.3% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 194 | 2187 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 194 | 2187 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 200 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 154 | | | 600 | 166 | |
| Travel Time (s) | 1.9 | | | 7.4 | 2.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 216 | 2430 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 216 | 2430 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 125.6% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

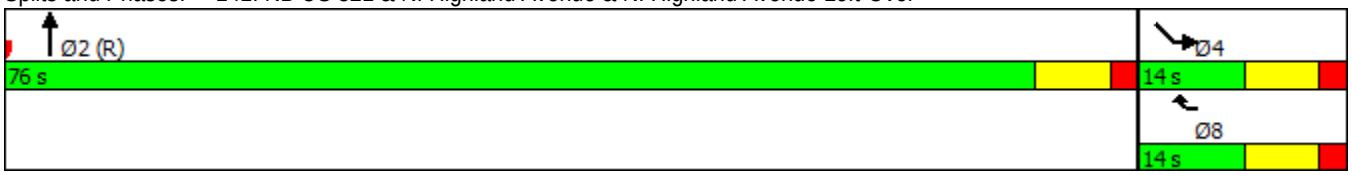
| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 35 | 0 | 2017 | 123 | 0 | 0 | 0 | 22 | 0 |
| Future Volume (vph) | 0 | 0 | 35 | 0 | 2017 | 123 | 0 | 0 | 0 | 22 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 200 | | 0 | 200 | | 300 | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 0 | 0 | | 0 | 1 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.865 | | 0.991 | | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 1596 | 0 | 3442 | 0 | 0 | 0 | 0 | 1752 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 1596 | 0 | 3442 | 0 | 0 | 0 | 0 | 1752 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 499 | | | | 224 | | | 926 | | 66 | |
| Travel Time (s) | 9.7 | | | | 2.8 | | | 11.5 | | 1.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 2% | 4% | 3% | 2% | 4% | 2% | 3% | 2% |
| Adj. Flow (vph) | 0 | 0 | 39 | 0 | 2241 | 137 | 0 | 0 | 0 | 24 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 39 | 0 | 2378 | 0 | 0 | 0 | 0 | 24 | 0 |
| Turn Type | | | Prot | | NA | | | | | Prot | |
| Protected Phases | | | 8 | | 2 | | | | | 4 | |
| Permitted Phases | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 14.0 | | | | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 21.0 | | | | | 14.0 | |
| Total Split (s) | | | 14.0 | | 76.0 | | | | | 14.0 | |
| Total Split (%) | | | 15.6% | | 84.4% | | | | | 15.6% | |
| Maximum Green (s) | | | 7.0 | | 69.0 | | | | | 7.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | | | | | 2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | | | | | 3.0 | |
| Recall Mode | | | Min | | C-Min | | | | | None | |
| Act Effct Green (s) | | | 9.0 | | 71.0 | | | | | 9.0 | |
| Actuated g/C Ratio | | | 0.10 | | 0.79 | | | | | 0.10 | |
| v/c Ratio | | | 0.25 | | 0.88 | | | | | 0.14 | |
| Control Delay | | | 41.6 | | 4.8 | | | | | 43.5 | |
| Queue Delay | | | 0.0 | | 0.0 | | | | | 0.0 | |
| Total Delay | | | 41.6 | | 4.8 | | | | | 43.5 | |
| LOS | | | D | | A | | | | | D | |
| Approach Delay | 41.6 | | | | 4.8 | | | | | 43.5 | |
| Approach LOS | D | | | | A | | | | | D | |
| Queue Length 50th (ft) | | | 21 | | 32 | | | | | 13 | |
| Queue Length 95th (ft) | | | 52 | | m36 | | | | | m23 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 419 | | | | 144 | | | 846 | | 1 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 159 | | 2715 | | | | | 175 | |
| Starvation Cap Reductn | | | 0 | | 0 | | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | | | | | 0 | |
| Reduced v/c Ratio | | | 0.25 | | 0.88 | | | | | 0.14 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 10 (11%), Referenced to phase 2:NBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.88 | | | |
| Intersection Signal Delay: 5.8 | | Intersection LOS: A | |
| Intersection Capacity Utilization 73.8% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 141: NB US 321 & N. Highland Avenue & N. Highland Avenue Left-Over



| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 1626 | 30 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 1626 | 30 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 3471 | 1736 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 3471 | 1736 | 0 |
| Right Turn on Red | | No | | | No | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 30 | | | 55 | 25 | |
| Link Distance (ft) | 894 | | | 2338 | 46 | |
| Travel Time (s) | 20.3 | | | 29.0 | 1.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 4% | 2% |
| Adj. Flow (vph) | 0 | 0 | 0 | 1807 | 33 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 1807 | 33 | 0 |
| Turn Type | | | | NA | Prot | |
| Protected Phases | | | | 6 | 8 | |
| Permitted Phases | | | | | | |
| Minimum Initial (s) | | | | 14.0 | 7.0 | |
| Minimum Split (s) | | | | 21.0 | 14.0 | |
| Total Split (s) | | | | 76.0 | 14.0 | |
| Total Split (%) | | | | 84.4% | 15.6% | |
| Maximum Green (s) | | | | 69.0 | 7.0 | |
| Yellow Time (s) | | | | 5.0 | 5.0 | |
| All-Red Time (s) | | | | 2.0 | 2.0 | |
| Total Lost Time (s) | | | | 5.0 | 5.0 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | |
| Recall Mode | | | | C-Min | None | |
| Act Effct Green (s) | | | | 77.9 | 9.7 | |
| Actuated g/C Ratio | | | | 0.87 | 0.11 | |
| v/c Ratio | | | | 0.60 | 0.18 | |
| Control Delay | | | | 4.5 | 31.2 | |
| Queue Delay | | | | 0.0 | 0.0 | |
| Total Delay | | | | 4.5 | 31.2 | |
| LOS | | | | A | C | |
| Approach Delay | | | | 4.5 | 31.2 | |
| Approach LOS | | | | A | C | |
| Queue Length 50th (ft) | | | | 181 | 16 | |
| Queue Length 95th (ft) | | | | 275 | m19 | |
| Internal Link Dist (ft) | 814 | | | 2258 | 1 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | | | 3031 | 187 | |

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Starvation Cap Reductn | | | | 0 | 0 | |
| Spillback Cap Reductn | | | | 0 | 0 | |
| Storage Cap Reductn | | | | 0 | 0 | |
| Reduced v/c Ratio | | | | 0.60 | 0.18 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 12 (13%), Referenced to phase 6:SBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.60 | | | |
| Intersection Signal Delay: 4.9 | | Intersection LOS: A | |
| Intersection Capacity Utilization 108.3% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

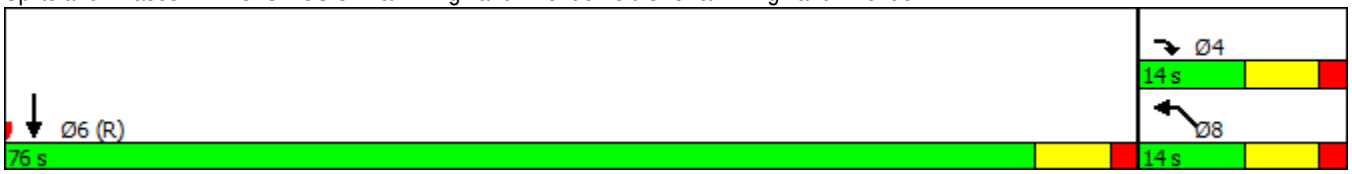
Splits and Phases: 142: SB US 321 & N. Highland Avenue U-Turn

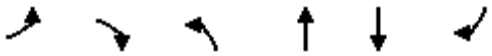
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 1453 | 181 | 51 | 0 |
| Future Volume (vph) | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 1453 | 181 | 51 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 0.95 | 1.00 | 1.00 |
| Frt | | | 0.865 | | | | | 0.983 | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 1611 | 0 | 0 | 0 | 0 | 3419 | 0 | 1770 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 1611 | 0 | 0 | 0 | 0 | 3419 | 0 | 1770 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 30 | | | 55 | | 25 | |
| Link Distance (ft) | 804 | | | | 861 | | | 210 | | 86 | |
| Travel Time (s) | 15.7 | | | | 19.6 | | | 2.6 | | 2.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 4% | 4% | 2% | 4% | 2% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 46 | 0 | 0 | 0 | 0 | 1614 | 201 | 57 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 46 | 0 | 0 | 0 | 0 | 1815 | 0 | 57 | 0 |
| Turn Type | | | Prot | | | | | NA | | Prot | |
| Protected Phases | | | 4 | | | | | 6 | | 8 | |
| Permitted Phases | | | 4 | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | | | | 14.0 | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 21.0 | | 14.0 | |
| Total Split (s) | | | 14.0 | | | | | 76.0 | | 14.0 | |
| Total Split (%) | | | 15.6% | | | | | 84.4% | | 15.6% | |
| Maximum Green (s) | | | 7.0 | | | | | 69.0 | | 7.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | | 2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | | 3.0 | |
| Recall Mode | | | None | | | | | C-Max | | Min | |
| Act Effct Green (s) | | | 9.0 | | | | | 71.0 | | 9.0 | |
| Actuated g/C Ratio | | | 0.10 | | | | | 0.79 | | 0.10 | |
| v/c Ratio | | | 0.29 | | | | | 0.67 | | 0.32 | |
| Control Delay | | | 42.6 | | | | | 3.7 | | 36.2 | |
| Queue Delay | | | 0.0 | | | | | 0.0 | | 0.0 | |
| Total Delay | | | 42.6 | | | | | 3.7 | | 36.2 | |
| LOS | | | D | | | | | A | | D | |
| Approach Delay | 42.6 | | | | | | | 3.7 | | 36.2 | |
| Approach LOS | D | | | | | | | A | | D | |
| Queue Length 50th (ft) | | | 25 | | | | | 11 | | 33 | |
| Queue Length 95th (ft) | | | 59 | | | | | 165 | | m39 | |
| Internal Link Dist (ft) | 724 | | | | 781 | | | 130 | | 6 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 161 | | | | | 2697 | | 177 | |

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Starvation Cap Reductn | | | 0 | | | | | 0 | | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | | 0 | |
| Reduced v/c Ratio | | | 0.29 | | | | | 0.67 | | 0.32 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 88 (98%), Referenced to phase 6:SBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.67 | | | |
| Intersection Signal Delay: 5.6 | | Intersection LOS: A | |
| Intersection Capacity Utilization 60.1% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 143: SB US 321 & N. Highland Avenue Left-Over & N. Highland Avenue





| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 30 | 2022 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 30 | 2022 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 150 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1736 | 3471 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1736 | 3471 | 0 | 0 |
| Link Speed (mph) | 30 | | | 55 | 55 | |
| Link Distance (ft) | 46 | | | 926 | 2360 | |
| Travel Time (s) | 1.0 | | | 11.5 | 29.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 33 | 2247 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 33 | 2247 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

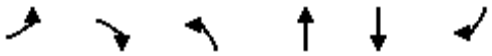
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 108.3% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 22 | 1634 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 22 | 1634 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 50 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1752 | 3471 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1752 | 3471 |
| Link Speed (mph) | 30 | | 30 | | | 55 |
| Link Distance (ft) | 66 | | 210 | | | 894 |
| Travel Time (s) | 1.5 | | 4.8 | | | 11.1 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 3% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 24 | 1816 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 24 | 1816 |
| Sign Control | Stop | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 59.1% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 51 | 2140 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 51 | 2140 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 50 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1770 | 3471 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1770 | 3471 | 0 | 0 |
| Link Speed (mph) | 30 | | | 55 | 55 | |
| Link Distance (ft) | 86 | | | 838 | 224 | |
| Travel Time (s) | 2.0 | | | 10.4 | 2.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 57 | 2378 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 57 | 2378 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 62.5% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 1626 | 0 | 2022 |
| Future Volume (vph) | 0 | 0 | 0 | 1626 | 0 | 2022 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 0.88 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 0 | 0 | 3471 | 0 | 2733 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 0 | 0 | 3471 | 0 | 2733 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 2338 | | | 158 | 2360 | |
| Travel Time (s) | 29.0 | | | 2.0 | 29.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 4% | 2% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 1807 | 0 | 2247 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 1807 | 0 | 2247 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 74.1% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 2170 | 0 | 0 | 0 | 1384 |
| Future Volume (vph) | 0 | 2170 | 0 | 0 | 0 | 1384 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 0.88 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 3471 | 0 | 0 | 0 | 2733 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 3471 | 0 | 0 | 0 | 2733 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 352 | 478 | | 536 | |
| Travel Time (s) | | 4.4 | 5.9 | | 6.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 4% | 2% | 2% | 2% | 4% |
| Adj. Flow (vph) | 0 | 2411 | 0 | 0 | 0 | 1538 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 2411 | 0 | 0 | 0 | 1538 |
| Sign Control | | Free | Stop | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 63.3% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

## Summary of All Intervals

| Start Time | 4:50 |
|---|---|
| End Time | 6:00 |
| Total Time (min) | 70 |
| Time Recorded (min) | 60 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 4814 |
| Vehs Exited | 4820 |
| Starting Vehs | 205 |
| Ending Vehs | 199 |
| Travel Distance (mi) | 7189 |
| Travel Time (hr) | 216.0 |
| Total Delay (hr) | 70.7 |
| Total Stops | 3862 |
| Fuel Used (gal) | 266.5 |

## Interval #0 Information Seeding

| Start Time | 4:50 |
|---|---|
| End Time | 5:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 5:00 |
|---|---|
| End Time | 6:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 4814 |
|---|---|
| Vehs Exited | 4820 |
| Starting Vehs | 205 |
| Ending Vehs | 199 |
| Travel Distance (mi) | 7189 |
| Travel Time (hr) | 216.0 |
| Total Delay (hr) | 70.7 |
| Total Stops | 3862 |
| Fuel Used (gal) | 266.5 |

## Intersection: 1: Dudley Shoals

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 2: Dudley Shoals

| Movement | EB | NB | SB |
|---|---|---|---|
| Directions Served | LR | LT | TR |
| Maximum Queue (ft) | 146 | 54 | 22 |
| Average Queue (ft) | 76 | 16 | 1 |
| 95th Queue (ft) | 132 | 46 | 7 |
| Link Distance (ft) | 582 | 694 | 380 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 7: US 321

| Movement | EB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 94 |
| Average Queue (ft) | 29 |
| 95th Queue (ft) | 57 |
| Link Distance (ft) | 970 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 131: NB US 321 & Pinewood Road & Pinewood Road Left-Over

| Movement | WB | WB | NB | NB | SE | SE |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | < | L |
| Maximum Queue (ft) | 139 | 126 | 177 | 161 | 94 | 156 |
| Average Queue (ft) | 64 | 68 | 104 | 112 | 33 | 80 |
| 95th Queue (ft) | 105 | 108 | 165 | 171 | 77 | 147 |
| Link Distance (ft) | 1112 | | 82 | 82 | 117 | 117 |
| Upstream Blk Time (%) | | | 9 | 13 | | 3 |
| Queuing Penalty (veh) | | | 65 | 92 | | 3 |
| Storage Bay Dist (ft) | | 200 | | | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 132: SB US 321 & Pinewood Road U-Turn

| Movement | SB | SB | NW |
|---|---|---|---|
| Directions Served | T | T | L |
| Maximum Queue (ft) | 150 | 157 | 103 |
| Average Queue (ft) | 40 | 47 | 55 |
| 95th Queue (ft) | 103 | 109 | 98 |
| Link Distance (ft) | 742 | 742 | 22 |
| Upstream Blk Time (%) | | | 37 |
| Queuing Penalty (veh) | | | 29 |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 133: SB US 321 & Pinewood Road Left-Over & Pinewood Road

| Movement | EB | EB | SB | SB | NW |
|---|---|---|---|---|---|
| Directions Served | > | > | T | T | L |
| Maximum Queue (ft) | 256 | 224 | 222 | 223 | 188 |
| Average Queue (ft) | 171 | 115 | 103 | 110 | 110 |
| 95th Queue (ft) | 259 | 241 | 189 | 187 | 158 |
| Link Distance (ft) | 696 | | 108 | 108 | 65 |
| Upstream Blk Time (%) | | | 6 | 6 | 36 |
| Queuing Penalty (veh) | | | 26 | 28 | 70 |
| Storage Bay Dist (ft) | | 300 | | | |
| Storage Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |

## Intersection: 134: NB US 321 & Pinewood Road U-Turn

| Movement | EB | NB | NB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 100 | 312 | 342 |
| Average Queue (ft) | 77 | 170 | 192 |
| 95th Queue (ft) | 86 | 277 | 311 |
| Link Distance (ft) | 19 | 432 | 432 |
| Upstream Blk Time (%) | 71 | | |
| Queuing Penalty (veh) | 151 | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 135: NB US 321 & Pinewood Road U-Turn

| Movement | NB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 54 |
| Average Queue (ft) | 8 |
| 95th Queue (ft) | 35 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 150 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 136: SB US 321 & Pinewood Road Left-Over

| Movement | SB | SB | SB |
|---|---|---|---|
| Directions Served | T | T | T |
| Maximum Queue (ft) | 46 | 40 | 68 |
| Average Queue (ft) | 2 | 1 | 9 |
| 95th Queue (ft) | 18 | 13 | 40 |
| Link Distance (ft) | 536 | 536 | 536 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 137: SB US 321 & Pinewood Road U-Turn

| Movement | SB | SB |
|---|---|---|
| Directions Served | L | T |
| Maximum Queue (ft) | 246 | 235 |
| Average Queue (ft) | 78 | 8 |
| 95th Queue (ft) | 180 | 78 |
| Link Distance (ft) | | 653 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | 250 | |
| Storage Blk Time (%) | 0 | 0 |
| Queuing Penalty (veh) | 1 | 0 |

## Intersection: 138: NB US 321 & Pinewood Road Left-Over

| Movement | NB | NB | NB | NB |
|---|---|---|---|---|
| Directions Served | L | T | T | T |
| Maximum Queue (ft) | 45 | 35 | 56 | 21 |
| Average Queue (ft) | 6 | 2 | 6 | 1 |
| 95th Queue (ft) | 28 | 13 | 32 | 7 |
| Link Distance (ft) | | 545 | 545 | 545 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | 200 | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 141: NB US 321 & N. Highland Avenue & N. Highland Avenue Left-Over

| Movement | WB | NB | NB | SE |
|---|---|---|---|---|
| Directions Served | > | T | TR | L |
| Maximum Queue (ft) | 72 | 204 | 222 | 44 |
| Average Queue (ft) | 25 | 121 | 118 | 18 |
| 95th Queue (ft) | 62 | 191 | 202 | 38 |
| Link Distance (ft) | 452 | 163 | 163 | 6 |
| Upstream Blk Time (%) | | 1 | 2 | 23 |
| Queuing Penalty (veh) | | 11 | 17 | 5 |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 142: SB US 321 & N. Highland Avenue U-Turn

| Movement | SB | SB | NW |
|---|---|---|---|
| Directions Served | T | T | L |
| Maximum Queue (ft) | 151 | 115 | 51 |
| Average Queue (ft) | 40 | 41 | 20 |
| 95th Queue (ft) | 109 | 107 | 45 |
| Link Distance (ft) | 2297 | 2297 | 2 |
| Upstream Blk Time (%) | | | 18 |
| Queuing Penalty (veh) | | | 5 |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 143: SB US 321 & N. Highland Avenue Left-Over & N. Highland Avenue

| Movement | EB | SB | SB | NW |
|---|---|---|---|---|
| Directions Served | > | T | TR | L |
| Maximum Queue (ft) | 84 | 151 | 156 | 94 |
| Average Queue (ft) | 24 | 78 | 81 | 41 |
| 95th Queue (ft) | 61 | 145 | 144 | 86 |
| Link Distance (ft) | 716 | 157 | 157 | 22 |
| Upstream Blk Time (%) | | 0 | 0 | 34 |
| Queuing Penalty (veh) | | 1 | 1 | 18 |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 145: NB US 321 & N. Highland Avenue U-Turn

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 146: SB US 321 & N. Highland Avenue Left-Over

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 148: NB US 321 & N. Highland Avenue Left-Over

| Movement | NB | NB |
|---|---|---|
| Directions Served | L | T |
| Maximum Queue (ft) | 58 | 116 |
| Average Queue (ft) | 4 | 4 |
| 95th Queue (ft) | 25 | 38 |
| Link Distance (ft) | | 795 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | 50 | |
| Storage Blk Time (%) | 1 | |
| Queuing Penalty (veh) | 9 | |

## Intersection: 991: SB US 321/US 321 & NB US 321

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 992: US 321/NB US 321 & SB US 321

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Network Summary

Network wide Queuing Penalty: 531

APPENDIX M

# 2040 Build Alternative Dudley Shoals Road – Freeway Ramp Reports

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 SB |
| Agency or Company | AECOM | Junction | 201 - Dudley Shoals Ramp |
| Date Performed | 3/27/2017 | Jurisdiction | NCDOT |
| Analysis Time Period | AM Peak Hour | Analysis Year | 2040 |

Project Description U-4700 US 321

## Inputs

| Upstream Adj Ramp | | Freeway Number of Lanes, N | 2 | Downstream Adj Ramp | |
|---|---|---|---|---|---|
| ☐ Yes | ☐ On | Ramp Number of Lanes, N | 1 | ☐ Yes | ☐ On |
| ☑ No | ☐ Off | Acceleration Lane Length, $L_A$ | 500 | ☑ No | ☐ Off |
| $L_{up}$ = | ft | Deceleration Lane Length $L_D$ | | $L_{down}$ = | ft |
| $V_u$ = | veh/h | Freeway Volume, $V_F$ | 2058 | $V_D$ = | veh/h |
| | | Ramp Volume, $V_R$ | 122 | | |
| | | Freeway Free-Flow Speed, $S_{FF}$ | 55.0 | | |
| | | Ramp Free-Flow Speed, $S_{FR}$ | 25.0 | | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 2058 | 0.90 | Rolling | 4 | 0 | 0.943 | 1.00 | 2424 |
| Ramp | 122 | 0.90 | Rolling | 4 | 0 | 0.943 | 1.00 | 144 |
| UpStream | | | | | | | | |
| DownStream | | | | | | | | |

### Merge Areas

#### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = 1.000 using Equation (Exhibit 13-6)

$V_{12}$ = 2424 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

#### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 2568 | Exhibit 13-8 | | No |

#### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 2568 | Exhibit 13-8 | 4600:All | No |

#### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = 22.3 (pc/mi/ln)

LOS = C (Exhibit 13-2)

#### Speed Determination

$M_S$ = 0.347 (Exibit 13-11)

$S_R$= 50.5 mph (Exhibit 13-11)

$S_0$= N/A mph (Exhibit 13-11)

S = 50.5 mph (Exhibit 13-13)

### Diverge Areas

#### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = using Equation (Exhibit 13-7)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

#### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 13-8 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 13-8 | | |
| $V_R$ | | Exhibit 13-10 | | |

#### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 13-8 | | |

#### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

#### Speed Determination

$D_s$ = (Exhibit 13-12)

$S_R$= mph (Exhibit 13-12)

$S_0$= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

# RAMPS AND RAMP JUNCTIONS WORKSHEET

## General Information

| | | | |
|---|---|---|---|
| Analyst | AECOM | Freeway/Dir of Travel | US 321 SB |
| Agency or Company | AECOM | Junction | 201 - Dudley Shoals Ramp |
| Date Performed | 3/27/2017 | Jurisdiction | NCDOT |
| Analysis Time Period | PM Peak Hour | Analysis Year | 2040 |

Project Description U-4700 US 321

## Inputs

| Upstream Adj Ramp | | Freeway Number of Lanes, N | 2 | Downstream Adj Ramp | |
|---|---|---|---|---|---|
| ☐ Yes | ☐ On | Ramp Number of Lanes, N | 1 | ☐ Yes | ☐ On |
| ☑ No | ☐ Off | Acceleration Lane Length, $L_A$ | 500 | ☑ No | ☐ Off |
| $L_{up}$ = | ft | Deceleration Lane Length $L_D$ | | $L_{down}$ = | ft |
| $V_u$ = | veh/h | Freeway Volume, $V_F$ | 1384 | $V_D$ = | veh/h |
| | | Ramp Volume, $V_R$ | 85 | | |
| | | Freeway Free-Flow Speed, $S_{FF}$ | 55.0 | | |
| | | Ramp Free-Flow Speed, $S_{FR}$ | 25.0 | | |

## Conversion to pc/h Under Base Conditions

| (pc/h) | V (Veh/hr) | PHF | Terrain | %Truck | %Rv | $f_{HV}$ | $f_p$ | v = V/PHF x $f_{HV}$ x $f_p$ |
|---|---|---|---|---|---|---|---|---|
| Freeway | 1384 | 0.90 | Rolling | 4 | 0 | 0.943 | 1.00 | 1630 |
| Ramp | 85 | 0.90 | Rolling | 4 | 0 | 0.943 | 1.00 | 100 |
| UpStream | | | | | | | | |
| DownStream | | | | | | | | |

### Merge Areas

#### Estimation of $v_{12}$

$V_{12} = V_F ( P_{FM} )$

$L_{EQ}$ = (Equation 13-6 or 13-7)

$P_{FM}$ = 1.000 using Equation (Exhibit 13-6)

$V_{12}$ = 1630 pc/h

$V_3$ or $V_{av34}$ 0 pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☑ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☑ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

#### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_{FO}$ | 1730 | Exhibit 13-8 | | No |

#### Flow Entering Merge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{R12}$ | 1730 | Exhibit 13-8 | 4600:All | No |

#### Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ V_{12} - 0.00627\ L_A$

$D_R$ = 15.8 (pc/mi/ln)

LOS = B (Exhibit 13-2)

#### Speed Determination

$M_S$ = 0.318 (Exibit 13-11)

$S_R$= 50.9 mph (Exhibit 13-11)

$S_0$= N/A mph (Exhibit 13-11)

S = 50.9 mph (Exhibit 13-13)

### Diverge Areas

#### Estimation of $v_{12}$

$V_{12} = V_R + (V_F - V_R)P_{FD}$

$L_{EQ}$ = (Equation 13-12 or 13-13)

$P_{FD}$ = using Equation (Exhibit 13-7)

$V_{12}$ = pc/h

$V_3$ or $V_{av34}$ pc/h (Equation 13-14 or 13-17)

Is $V_3$ or $V_{av34}$ > 2,700 pc/h? ☐ Yes ☐ No

Is $V_3$ or $V_{av34}$ > 1.5 * $V_{12}$/2 ☐ Yes ☐ No

If Yes,$V_{12a}$ = pc/h (Equation 13-16, 13-18, or 13-19)

#### Capacity Checks

| | Actual | Capacity | | LOS F? |
|---|---|---|---|---|
| $V_F$ | | Exhibit 13-8 | | |
| $V_{FO} = V_F - V_R$ | | Exhibit 13-8 | | |
| $V_R$ | | Exhibit 13-10 | | |

#### Flow Entering Diverge Influence Area

| | Actual | Max Desirable | | Violation? |
|---|---|---|---|---|
| $V_{12}$ | | Exhibit 13-8 | | |

#### Level of Service Determination (if not F)

$D_R = 4.252 + 0.0086\ V_{12} - 0.009\ L_D$

$D_R$ = (pc/mi/ln)

LOS = (Exhibit 13-2)

#### Speed Determination

$D_s$ = (Exhibit 13-12)

$S_R$= mph (Exhibit 13-12)

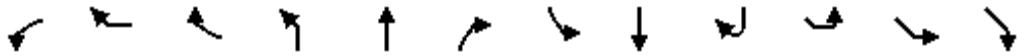
$S_0$= mph (Exhibit 13-12)

S = mph (Exhibit 13-13)

APPENDIX N

# 2040 Build Alternative Lower Cedar Valley Road & Pine Mountain Road Synchro & SimTraffic Reports

## 161: NB US 321 & Lower Cedar Valley Road & Lower Cedar Valley Road Left-Over



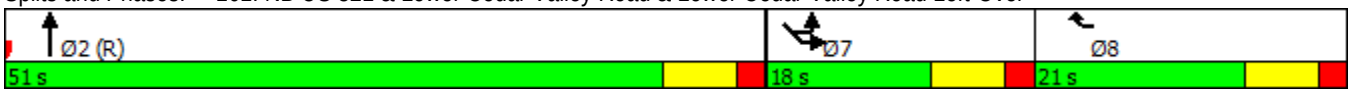
| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL2 | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 254 | 0 | 1556 | 52 | 0 | 0 | 0 | 17 | 82 | 0 |
| Future Volume (vph) | 0 | 0 | 254 | 0 | 1556 | 52 | 0 | 0 | 0 | 17 | 82 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 150 | | 0 | | 0 | 0 | | 0 | | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 0 | 0 | | 0 | | 1 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.995 | | | | | | | |
| Flt Protected | | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2787 | 0 | 4963 | 0 | 0 | 0 | 0 | 0 | 1752 | 0 |
| Flt Permitted | | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2787 | 0 | 4963 | 0 | 0 | 0 | 0 | 0 | 1752 | 0 |
| Right Turn on Red | | | No | | | No | | | No | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | | 25 | |
| Link Distance (ft) | 760 | | | | 118 | | | 761 | | | 116 | |
| Travel Time (s) | 14.8 | | | | 1.5 | | | 9.4 | | | 3.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 3% | 4% | 4% | 2% | 2% | 2% | 3% | 3% | 3% |
| Adj. Flow (vph) | 0 | 0 | 282 | 0 | 1729 | 58 | 0 | 0 | 0 | 19 | 91 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 282 | 0 | 1787 | 0 | 0 | 0 | 0 | 0 | 110 | 0 |
| Turn Type | | | Prot | | NA | | | | | Prot | Prot | |
| Protected Phases | | | 8 | | 2 | | | | | 7 | 7 | |
| Permitted Phases | | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 14.0 | | | | | 7.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 21.0 | | | | | 14.0 | 14.0 | |
| Total Split (s) | | | 21.0 | | 51.0 | | | | | 18.0 | 18.0 | |
| Total Split (%) | | | 23.3% | | 56.7% | | | | | 20.0% | 20.0% | |
| Maximum Green (s) | | | 14.0 | | 44.0 | | | | | 11.0 | 11.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | | | | | 2.0 | 2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | | | | | | 5.0 | |
| Lead/Lag | | | Lag | | | | | | | Lead | Lead | |
| Lead-Lag Optimize? | | | Yes | | | | | | | Yes | Yes | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | |
| Recall Mode | | | None | | C-Min | | | | | None | None | |
| Act Effct Green (s) | | | 15.0 | | 51.0 | | | | | | 11.8 | |
| Actuated g/C Ratio | | | 0.17 | | 0.57 | | | | | | 0.13 | |
| v/c Ratio | | | 0.61 | | 0.64 | | | | | | 0.48 | |
| Control Delay | | | 40.7 | | 11.7 | | | | | | 43.4 | |
| Queue Delay | | | 0.0 | | 0.0 | | | | | | 0.0 | |
| Total Delay | | | 40.7 | | 11.7 | | | | | | 43.4 | |
| LOS | | | D | | B | | | | | | D | |
| Approach Delay | 40.7 | | | | 11.7 | | | | | | 43.4 | |
| Approach LOS | D | | | | B | | | | | | D | |
| Queue Length 50th (ft) | | | 83 | | 196 | | | | | | 54 | |
| Queue Length 95th (ft) | | | 129 | | 182 | | | | | | m62 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL2 | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 680 | | | | 38 | | | 681 | | | 36 | |
| Turn Bay Length (ft) | | | 150 | | | | | | | | | |
| Base Capacity (vph) | | | 497 | | 2815 | | | | | | 253 | |
| Starvation Cap Reductn | | | 0 | | 0 | | | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | | | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | | | | | | 0 | |
| Reduced v/c Ratio | | | 0.57 | | 0.63 | | | | | | 0.43 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 30 (33%), Referenced to phase 2:NBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.64 | | | |
| Intersection Signal Delay: 17.1 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 161: NB US 321 & Lower Cedar Valley Road & Lower Cedar Valley Road Left-Over



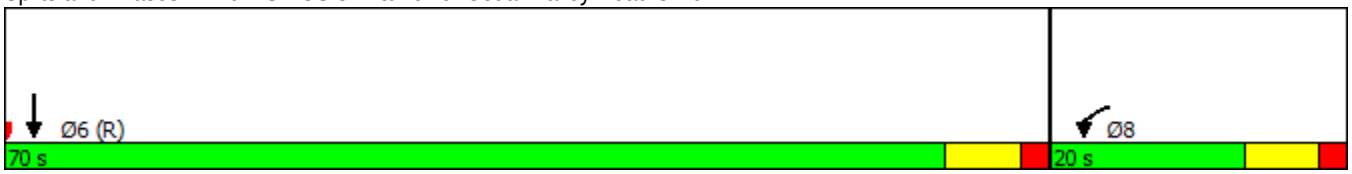
| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 204 | 0 | 0 | 0 | 0 | 2087 |
| Future Volume (vph) | 204 | 0 | 0 | 0 | 0 | 2087 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1752 | 0 | 0 | 0 | 0 | 3505 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1752 | 0 | 0 | 0 | 0 | 3505 |
| Right Turn on Red | No | No | | No | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 30 | | | 55 |
| Link Distance (ft) | 69 | | 391 | | | 709 |
| Travel Time (s) | 1.9 | | 8.9 | | | 8.8 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 2% | 2% | 3% |
| Adj. Flow (vph) | 227 | 0 | 0 | 0 | 0 | 2319 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 227 | 0 | 0 | 0 | 0 | 2319 |
| Turn Type | Prot | | | | | NA |
| Protected Phases | 8 | | | | | 6 |
| Permitted Phases | | | | | | |
| Minimum Initial (s) | 7.0 | | | | | 14.0 |
| Minimum Split (s) | 14.0 | | | | | 21.0 |
| Total Split (s) | 20.0 | | | | | 70.0 |
| Total Split (%) | 22.2% | | | | | 77.8% |
| Maximum Green (s) | 13.0 | | | | | 63.0 |
| Yellow Time (s) | 5.0 | | | | | 5.0 |
| All-Red Time (s) | 2.0 | | | | | 2.0 |
| Total Lost Time (s) | 5.0 | | | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | | | | 3.0 |
| Recall Mode | None | | | | | C-Min |
| Act Effct Green (s) | 14.7 | | | | | 65.3 |
| Actuated g/C Ratio | 0.16 | | | | | 0.73 |
| v/c Ratio | 0.79 | | | | | 0.91 |
| Control Delay | 58.2 | | | | | 10.0 |
| Queue Delay | 0.0 | | | | | 0.0 |
| Total Delay | 58.2 | | | | | 10.0 |
| LOS | E | | | | | A |
| Approach Delay | 58.2 | | | | | 10.0 |
| Approach LOS | E | | | | | A |
| Queue Length 50th (ft) | 108 | | | | | 180 |
| Queue Length 95th (ft) | #232 | | | | | #373 |
| Internal Link Dist (ft) | 1 | | 311 | | | 629 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | 292 | | | | | 2543 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Starvation Cap Reductn | 0 | | | | | 0 |
| Spillback Cap Reductn | 0 | | | | | 0 |
| Storage Cap Reductn | 0 | | | | | 0 |
| Reduced v/c Ratio | 0.78 | | | | | 0.91 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 58 (64%), Referenced to phase 6:SBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.91 | | | |
| Intersection Signal Delay: 14.3 | | Intersection LOS: B | |
| Intersection Capacity Utilization 111.0% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 162: SB US 321 & Lower Cedar Valley Road U-Turn



| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 265 | 0 | 0 | 0 | 0 | 1826 | 320 | 164 | 0 |
| Future Volume (vph) | 0 | 0 | 265 | 0 | 0 | 0 | 0 | 1826 | 320 | 164 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 250 | | 0 | | 0 | 0 | | 0 | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 0 | 0 | | 1 | 1 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | | | | 0.850 | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2760 | 0 | 0 | 0 | 0 | 3505 | 1568 | 1736 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2760 | 0 | 0 | 0 | 0 | 3505 | 1568 | 1736 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 661 | | | | 1107 | | | 120 | | 112 | |
| Travel Time (s) | 12.9 | | | | 13.7 | | | 1.5 | | 3.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 2% | 2% | 2% | 2% | 3% | 3% | 4% | 3% |
| Adj. Flow (vph) | 0 | 0 | 294 | 0 | 0 | 0 | 0 | 2029 | 356 | 182 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 294 | 0 | 0 | 0 | 0 | 2029 | 356 | 182 | 0 |
| Turn Type | | | Perm | | | | | NA | Perm | Prot | |
| Protected Phases | | | | | | | | 6 | | 8 | |
| Permitted Phases | | | 4 | | | | | | 6 | | |
| Minimum Initial (s) | | | 7.0 | | | | | 14.0 | 14.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 21.0 | 21.0 | 14.0 | |
| Total Split (s) | | | 21.0 | | | | | 69.0 | 69.0 | 21.0 | |
| Total Split (%) | | | 23.3% | | | | | 76.7% | 76.7% | 23.3% | |
| Maximum Green (s) | | | 14.0 | | | | | 62.0 | 62.0 | 14.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | 2.0 | 2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | |
| Recall Mode | | | None | | | | | C-Min | C-Min | None | |
| Act Effct Green (s) | | | 15.1 | | | | | 64.9 | 64.9 | 15.1 | |
| Actuated g/C Ratio | | | 0.17 | | | | | 0.72 | 0.72 | 0.17 | |
| v/c Ratio | | | 0.64 | | | | | 0.80 | 0.31 | 0.63 | |
| Control Delay | | | 41.6 | | | | | 4.1 | 2.0 | 40.2 | |
| Queue Delay | | | 0.0 | | | | | 0.0 | 0.0 | 0.0 | |
| Total Delay | | | 41.6 | | | | | 4.1 | 2.0 | 40.2 | |
| LOS | | | D | | | | | A | A | D | |
| Approach Delay | 41.6 | | | | | | | 3.8 | | 40.2 | |
| Approach LOS | D | | | | | | | A | | D | |
| Queue Length 50th (ft) | | | 88 | | | | | 65 | 22 | 89 | |
| Queue Length 95th (ft) | | | 134 | | | | | m77 | m25 | m132 | |

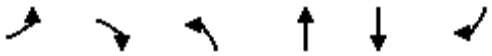
## 163: SB US 321 & Lower Cedar Valley Road Left-Over & Lower Cedar Valley Road

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 581 | | | | 1027 | | | 40 | | 32 | |
| Turn Bay Length (ft) | | | 250 | | | | | | | | |
| Base Capacity (vph) | | | 490 | | | | | 2529 | 1131 | 308 | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Reduced v/c Ratio | | | 0.60 | | | | | 0.80 | 0.31 | 0.59 | |

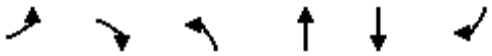
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 72 (80%), Referenced to phase 6:SBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.80 | | | |
| Intersection Signal Delay: 10.0 | | Intersection LOS: A | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 163: SB US 321 & Lower Cedar Valley Road Left-Over & Lower Cedar Valley Road



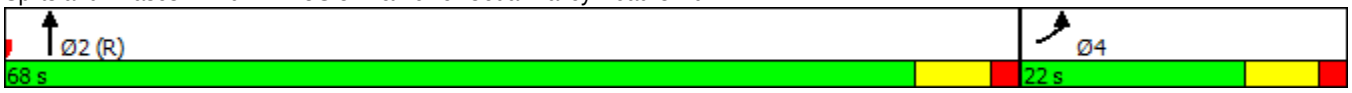
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 157 | 0 | 0 | 1615 | 0 | 0 |
| Future Volume (vph) | 157 | 0 | 0 | 1615 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 0 | 0 | 3471 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 0 | 0 | 3471 | 0 | 0 |
| Right Turn on Red | No | No | | | | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | | 55 | 55 | |
| Link Distance (ft) | 56 | | | 1125 | 1035 | |
| Travel Time (s) | 1.5 | | | 13.9 | 12.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 4% | 2% | 2% |
| Adj. Flow (vph) | 174 | 0 | 0 | 1794 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 174 | 0 | 0 | 1794 | 0 | 0 |
| Turn Type | Prot | | | NA | | |
| Protected Phases | 4 | | | 2 | | |
| Permitted Phases | | | | | | |
| Minimum Initial (s) | 7.0 | | | 14.0 | | |
| Minimum Split (s) | 14.0 | | | 21.0 | | |
| Total Split (s) | 22.0 | | | 68.0 | | |
| Total Split (%) | 24.4% | | | 75.6% | | |
| Maximum Green (s) | 15.0 | | | 61.0 | | |
| Yellow Time (s) | 5.0 | | | 5.0 | | |
| All-Red Time (s) | 2.0 | | | 2.0 | | |
| Total Lost Time (s) | 5.0 | | | 5.0 | | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | | |
| Recall Mode | None | | | C-Min | | |
| Act Effct Green (s) | 15.3 | | | 64.7 | | |
| Actuated g/C Ratio | 0.17 | | | 0.72 | | |
| v/c Ratio | 0.59 | | | 0.72 | | |
| Control Delay | 43.0 | | | 5.4 | | |
| Queue Delay | 0.0 | | | 0.0 | | |
| Total Delay | 43.0 | | | 5.4 | | |
| LOS | D | | | A | | |
| Approach Delay | 43.0 | | | 5.4 | | |
| Approach LOS | D | | | A | | |
| Queue Length 50th (ft) | 92 | | | 149 | | |
| Queue Length 95th (ft) | m113 | | | 143 | | |
| Internal Link Dist (ft) | 1 | | | 1045 | 955 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | 332 | | | 2506 | | |

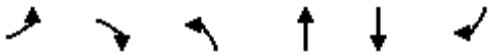


| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Starvation Cap Reductn | 0 | | | 0 | | |
| Spillback Cap Reductn | 0 | | | 0 | | |
| Storage Cap Reductn | 0 | | | 0 | | |
| Reduced v/c Ratio | 0.52 | | | 0.72 | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 25 (28%), Referenced to phase 2:NBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.72 | | | |
| Intersection Signal Delay: 8.8 | | Intersection LOS: A | |
| Intersection Capacity Utilization 61.7% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 164: NB US 321 & Lower Cedar Valley Road U-Turn





| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 204 | 1659 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 204 | 1659 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1752 | 3505 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1752 | 3505 | 0 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 69 | | | 282 | 760 | |
| Travel Time (s) | 0.9 | | | 3.5 | 9.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 3% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 227 | 1843 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 227 | 1843 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 111.0% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 99 | 2146 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 99 | 2146 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 150 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1752 | 5036 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1752 | 5036 |
| Link Speed (mph) | 25 | | 55 | | | 55 |
| Link Distance (ft) | 116 | | 120 | | | 594 |
| Travel Time (s) | 3.2 | | 1.5 | | | 7.4 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 3% | 3% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 110 | 2384 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 110 | 2384 |
| Sign Control | Stop | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 44.8% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 0 | 99 | 2146 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 0 | 99 | 2146 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 0 | 110 | 2384 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | 120 | | | 985 |
| pX, platoon unblocked | 0.55 | | | | | |
| vC, conflicting volume | 1015 | 0 | | | 0 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 0 | 0 | | | 0 | |
| tC, single (s) | 6.8 | 6.9 | | | 4.2 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 100 | 100 | | | 93 | |
| cM capacity (veh/h) | 529 | 1084 | | | 1614 | |

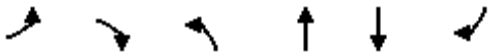
| Direction, Lane # | SB 1 | SB 2 | SB 3 | SB 4 |
|---|---|---|---|---|
| Volume Total | 110 | 795 | 795 | 795 |
| Volume Left | 110 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 |
| cSH | 1614 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.07 | 0.47 | 0.47 | 0.47 |
| Queue Length 95th (ft) | 5 | 0 | 0 | 0 |
| Control Delay (s) | 7.4 | 0.0 | 0.0 | 0.0 |
| Lane LOS | A | | | |
| Approach Delay (s) | 0.3 | | | |
| Approach LOS | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.3 | | |
| Intersection Capacity Utilization | 44.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 157 | 1934 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 157 | 1934 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 300 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1736 | 3471 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1736 | 3471 |
| Link Speed (mph) | 55 | | 55 | | | 55 |
| Link Distance (ft) | 56 | | 1159 | | | 1107 |
| Travel Time (s) | 0.7 | | 14.4 | | | 13.7 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 174 | 2149 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 174 | 2149 |
| Sign Control | Stop | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 61.7% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

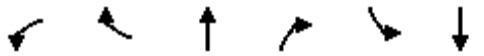
Intersection Sign configuration not allowed in HCM analysis.



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 164 | 1608 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 164 | 1608 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 200 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 112 | | | 1035 | 118 | |
| Travel Time (s) | 1.4 | | | 12.8 | 1.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 182 | 1787 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 182 | 1787 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

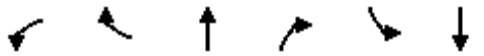
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 96.1% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 63 | 1800 | 27 | 0 | 0 |
| Future Volume (vph) | 0 | 63 | 1800 | 27 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 |
| Frt | | 0.865 | 0.998 | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1611 | 5026 | 0 | 0 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1611 | 5026 | 0 | 0 | 0 |
| Link Speed (mph) | 35 | | 55 | | | 55 |
| Link Distance (ft) | 468 | | 761 | | | 282 |
| Travel Time (s) | 9.1 | | 9.4 | | | 3.5 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 3% | 4% | 4% |
| Adj. Flow (vph) | 0 | 70 | 2000 | 30 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 70 | 2030 | 0 | 0 | 0 |
| Sign Control | Stop | | Free | | | Free |

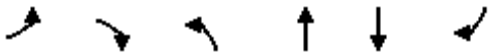
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 45.9% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 63 | 1800 | 27 | 0 | 0 |
| Future Volume (Veh/h) | 0 | 63 | 1800 | 27 | 0 | 0 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 70 | 2000 | 30 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | 761 | | | |
| pX, platoon unblocked | 0.75 | 0.75 | | | 0.75 | |
| vC, conflicting volume | 2015 | 682 | | | 2030 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1189 | 0 | | | 1209 | |
| tC, single (s) | 6.8 | 6.9 | | | 4.2 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 100 | 91 | | | 100 | |
| cM capacity (veh/h) | 136 | 814 | | | 422 | |

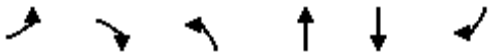
| Direction, Lane # | WB 1 | NB 1 | NB 2 | NB 3 |
|---|---|---|---|---|
| Volume Total | 70 | 800 | 800 | 430 |
| Volume Left | 0 | 0 | 0 | 0 |
| Volume Right | 70 | 0 | 0 | 30 |
| cSH | 814 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.09 | 0.47 | 0.47 | 0.25 |
| Queue Length 95th (ft) | 7 | 0 | 0 | 0 |
| Control Delay (s) | 9.8 | 0.0 | 0.0 | 0.0 |
| Lane LOS | A | | | |
| Approach Delay (s) | 9.8 | 0.0 | | |
| Approach LOS | A | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.3 | | |
| Intersection Capacity Utilization | 45.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 15 | 0 | 0 | 2230 | 61 |
| Future Volume (vph) | 0 | 15 | 0 | 0 | 2230 | 61 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 0 | | | 250 |
| Storage Lanes | 0 | 1 | 0 | | | 1 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.91 |
| Frt | | 0.865 | | | 0.996 | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1580 | 0 | 0 | 5016 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1580 | 0 | 0 | 5016 | 0 |
| Link Speed (mph) | 35 | | | 55 | 55 | |
| Link Distance (ft) | 724 | | | 594 | 391 | |
| Travel Time (s) | 14.1 | | | 7.4 | 4.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 4% | 2% | 2% | 3% | 3% |
| Adj. Flow (vph) | 0 | 17 | 0 | 0 | 2478 | 68 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 17 | 0 | 0 | 2546 | 0 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 54.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 15 | 0 | 0 | 2230 | 61 |
| Future Volume (Veh/h) | 0 | 15 | 0 | 0 | 2230 | 61 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 17 | 0 | 0 | 2478 | 68 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | 714 | 391 | |
| pX, platoon unblocked | 0.49 | 0.49 | 0.49 | | | |
| vC, conflicting volume | 2512 | 860 | 2546 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 438 | 0 | 508 | | | |
| tC, single (s) | 6.8 | 7.0 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 97 | 100 | | | |
| cM capacity (veh/h) | 268 | 528 | 516 | | | |

| Direction, Lane # | EB 1 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|
| Volume Total | 17 | 991 | 991 | 564 |
| Volume Left | 0 | 0 | 0 | 0 |
| Volume Right | 17 | 0 | 0 | 68 |
| cSH | 528 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.03 | 0.58 | 0.58 | 0.33 |
| Queue Length 95th (ft) | 2 | 0 | 0 | 0 |
| Control Delay (s) | 12.1 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | |
| Approach Delay (s) | 12.1 | 0.0 | | |
| Approach LOS | B | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.1 | | |
| Intersection Capacity Utilization | 54.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

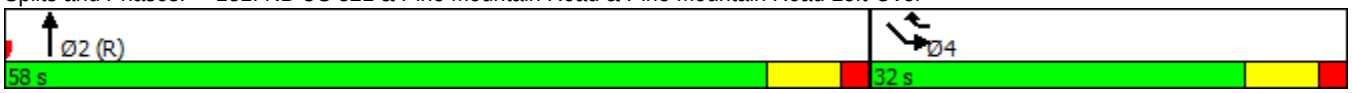
| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 515 | 0 | 1487 | 250 | 0 | 0 | 0 | 194 | 0 |
| Future Volume (vph) | 0 | 0 | 515 | 0 | 1487 | 250 | 0 | 0 | 0 | 194 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 400 | | 0 | | 0 | 400 | | 0 | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 1 | 0 | | 0 | 1 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2787 | 0 | 3505 | 1568 | 0 | 0 | 0 | 1752 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2787 | 0 | 3505 | 1568 | 0 | 0 | 0 | 1752 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 1087 | | | | 138 | | | 816 | | 103 | |
| Travel Time (s) | 21.2 | | | | 1.7 | | | 10.1 | | 2.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 3% | 3% | 3% | 4% | 4% | 2% | 3% | 2% |
| Adj. Flow (vph) | 0 | 0 | 572 | 0 | 1652 | 278 | 0 | 0 | 0 | 216 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 572 | 0 | 1652 | 278 | 0 | 0 | 0 | 216 | 0 |
| Turn Type | | | Prot | | NA | Free | | | | Prot | |
| Protected Phases | | | 4 | | 2 | | | | | 4 | |
| Permitted Phases | | | | | | Free | | | | | |
| Minimum Initial (s) | | | 7.0 | | 14.0 | | | | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 21.0 | | | | | 14.0 | |
| Total Split (s) | | | 32.0 | | 58.0 | | | | | 32.0 | |
| Total Split (%) | | | 35.6% | | 64.4% | | | | | 35.6% | |
| Maximum Green (s) | | | 25.0 | | 51.0 | | | | | 25.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | | | | | 2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | | | | | 3.0 | |
| Recall Mode | | | None | | C-Min | | | | | None | |
| Act Effct Green (s) | | | 24.5 | | 55.5 | 90.0 | | | | 24.5 | |
| Actuated g/C Ratio | | | 0.27 | | 0.62 | 1.00 | | | | 0.27 | |
| v/c Ratio | | | 0.75 | | 0.76 | 0.18 | | | | 0.45 | |
| Control Delay | | | 36.6 | | 7.0 | 0.2 | | | | 29.1 | |
| Queue Delay | | | 0.0 | | 0.0 | 0.0 | | | | 0.0 | |
| Total Delay | | | 36.6 | | 7.0 | 0.2 | | | | 29.1 | |
| LOS | | | D | | A | A | | | | C | |
| Approach Delay | 36.6 | | | | 6.1 | | | | | 29.1 | |
| Approach LOS | D | | | | A | | | | | C | |
| Queue Length 50th (ft) | | | 164 | | 142 | 0 | | | | 116 | |
| Queue Length 95th (ft) | | | 226 | | 148 | m0 | | | | m130 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 1007 | | | | 58 | | | 736 | | 23 | |
| Turn Bay Length (ft) | | | 400 | | | | | | | | |
| Base Capacity (vph) | | | 836 | | 2160 | 1568 | | | | 525 | |
| Starvation Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Reduced v/c Ratio | | | 0.68 | | 0.76 | 0.18 | | | | 0.41 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 8 (9%), Referenced to phase 2:NBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.76 | | | |
| Intersection Signal Delay: 14.3 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 181: NB US 321 & Pine Mountain Road & Pine Mountain Road Left-Over



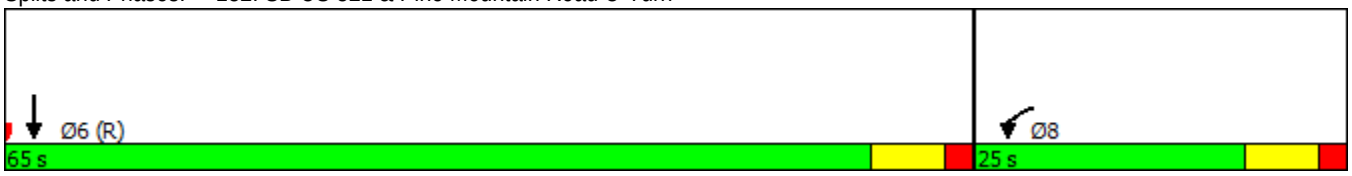
| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 287 | 0 | 0 | 0 | 0 | 1990 |
| Future Volume (vph) | 287 | 0 | 0 | 0 | 0 | 1990 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1752 | 0 | 0 | 0 | 0 | 3505 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1752 | 0 | 0 | 0 | 0 | 3505 |
| Right Turn on Red | No | No | | No | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 55 | | | 55 |
| Link Distance (ft) | 63 | | 255 | | | 1015 |
| Travel Time (s) | 1.7 | | 3.2 | | | 12.6 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 2% | 2% | 3% |
| Adj. Flow (vph) | 319 | 0 | 0 | 0 | 0 | 2211 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 319 | 0 | 0 | 0 | 0 | 2211 |
| Turn Type | Prot | | | | | NA |
| Protected Phases | 8 | | | | | 6 |
| Permitted Phases | | | | | | |
| Minimum Initial (s) | 7.0 | | | | | 14.0 |
| Minimum Split (s) | 14.0 | | | | | 21.0 |
| Total Split (s) | 25.0 | | | | | 65.0 |
| Total Split (%) | 27.8% | | | | | 72.2% |
| Maximum Green (s) | 18.0 | | | | | 58.0 |
| Yellow Time (s) | 5.0 | | | | | 5.0 |
| All-Red Time (s) | 2.0 | | | | | 2.0 |
| Total Lost Time (s) | 5.0 | | | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | | | | 3.0 |
| Recall Mode | None | | | | | C-Min |
| Act Effct Green (s) | 19.4 | | | | | 60.6 |
| Actuated g/C Ratio | 0.22 | | | | | 0.67 |
| v/c Ratio | 0.84 | | | | | 0.94 |
| Control Delay | 49.9 | | | | | 23.0 |
| Queue Delay | 0.0 | | | | | 0.0 |
| Total Delay | 49.9 | | | | | 23.0 |
| LOS | D | | | | | C |
| Approach Delay | 49.9 | | | | | 23.0 |
| Approach LOS | D | | | | | C |
| Queue Length 50th (ft) | 178 | | | | | 525 |
| Queue Length 95th (ft) | m#279 | | | | | #793 |
| Internal Link Dist (ft) | 1 | | 175 | | | 935 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | 389 | | | | | 2358 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Starvation Cap Reductn | 0 | | | | | 0 |
| Spillback Cap Reductn | 0 | | | | | 0 |
| Storage Cap Reductn | 0 | | | | | 0 |
| Reduced v/c Ratio | 0.82 | | | | | 0.94 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 89 (99%), Referenced to phase 6:SBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.94 | | | |
| Intersection Signal Delay: 26.4 | | Intersection LOS: C | |
| Intersection Capacity Utilization 109.9% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 182: SB US 321 & Pine Mountain Road U-Turn



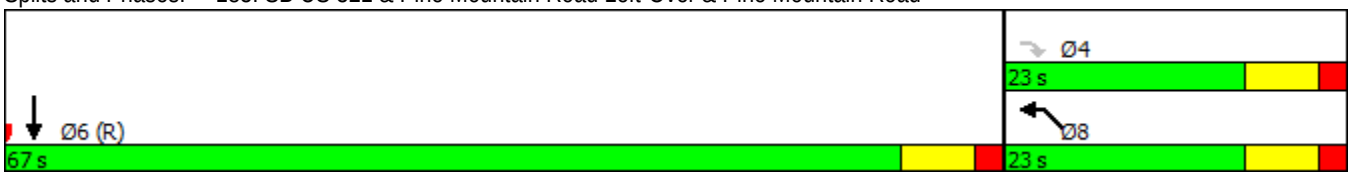
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 400 | 0 | 0 | 0 | 0 | 1904 | 0 | 102 | 0 |
| Future Volume (vph) | 0 | 0 | 400 | 0 | 0 | 0 | 0 | 1904 | 0 | 102 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 200 | | 0 | | 0 | 0 | | 0 | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 0 | 0 | | 0 | 1 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2787 | 0 | 0 | 0 | 0 | 3505 | 0 | 1752 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2787 | 0 | 0 | 0 | 0 | 3505 | 0 | 1752 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 538 | | | | 984 | | | 106 | | 137 | |
| Travel Time (s) | 10.5 | | | | 12.2 | | | 1.3 | | 3.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 3% | 2% | 3% | 2% |
| Adj. Flow (vph) | 0 | 0 | 444 | 0 | 0 | 0 | 0 | 2116 | 0 | 113 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 444 | 0 | 0 | 0 | 0 | 2116 | 0 | 113 | 0 |
| Turn Type | | | Perm | | | | | NA | | Prot | |
| Protected Phases | | | | | | | | 6 | | 8 | |
| Permitted Phases | | | 4 | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | | | | 14.0 | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 21.0 | | 14.0 | |
| Total Split (s) | | | 23.0 | | | | | 67.0 | | 23.0 | |
| Total Split (%) | | | 25.6% | | | | | 74.4% | | 25.6% | |
| Maximum Green (s) | | | 16.0 | | | | | 60.0 | | 16.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | | 2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | | 3.0 | |
| Recall Mode | | | None | | | | | C-Min | | None | |
| Act Effct Green (s) | | | 17.7 | | | | | 62.3 | | 17.7 | |
| Actuated g/C Ratio | | | 0.20 | | | | | 0.69 | | 0.20 | |
| v/c Ratio | | | 0.81 | | | | | 0.87 | | 0.33 | |
| Control Delay | | | 47.6 | | | | | 6.2 | | 39.6 | |
| Queue Delay | | | 0.0 | | | | | 0.0 | | 0.0 | |
| Total Delay | | | 47.6 | | | | | 6.2 | | 39.6 | |
| LOS | | | D | | | | | A | | D | |
| Approach Delay | 47.6 | | | | | | | 6.2 | | 39.6 | |
| Approach LOS | D | | | | | | | A | | D | |
| Queue Length 50th (ft) | | | 137 | | | | | 92 | | 66 | |
| Queue Length 95th (ft) | | | #215 | | | | | m101 | | m87 | |

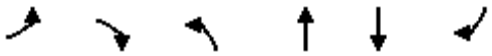
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 458 | | | | 904 | | | 26 | | 57 | |
| Turn Bay Length (ft) | | | 200 | | | | | | | | |
| Base Capacity (vph) | | | 557 | | | | | 2426 | | 350 | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | | 0 | |
| Reduced v/c Ratio | | | 0.80 | | | | | 0.87 | | 0.32 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 7 (8%), Referenced to phase 6:SBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.87 | | | |
| Intersection Signal Delay: 14.5 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

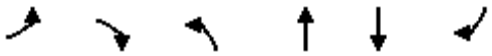
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 183: SB US 321 & Pine Mountain Road Left-Over & Pine Mountain Road





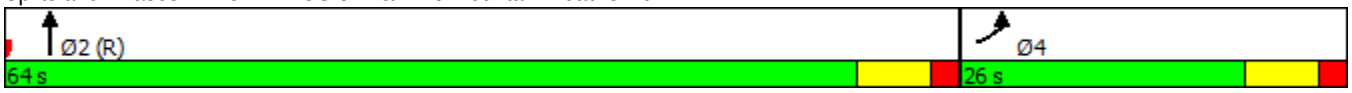
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 225 | 0 | 0 | 1614 | 0 | 0 |
| Future Volume (vph) | 225 | 0 | 0 | 1614 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1752 | 0 | 0 | 3505 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1752 | 0 | 0 | 3505 | 0 | 0 |
| Right Turn on Red | No | No | | | | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | | 55 | 55 | |
| Link Distance (ft) | 70 | | | 834 | 917 | |
| Travel Time (s) | 1.9 | | | 10.3 | 11.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 3% | 2% | 2% |
| Adj. Flow (vph) | 250 | 0 | 0 | 1793 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 250 | 0 | 0 | 1793 | 0 | 0 |
| Turn Type | Prot | | | NA | | |
| Protected Phases | 4 | | | 2 | | |
| Permitted Phases | | | | | | |
| Minimum Initial (s) | 7.0 | | | 14.0 | | |
| Minimum Split (s) | 14.0 | | | 21.0 | | |
| Total Split (s) | 26.0 | | | 64.0 | | |
| Total Split (%) | 28.9% | | | 71.1% | | |
| Maximum Green (s) | 19.0 | | | 57.0 | | |
| Yellow Time (s) | 5.0 | | | 5.0 | | |
| All-Red Time (s) | 2.0 | | | 2.0 | | |
| Total Lost Time (s) | 5.0 | | | 5.0 | | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | | |
| Recall Mode | None | | | C-Min | | |
| Act Effct Green (s) | 18.6 | | | 61.4 | | |
| Actuated g/C Ratio | 0.21 | | | 0.68 | | |
| v/c Ratio | 0.69 | | | 0.75 | | |
| Control Delay | 32.9 | | | 5.0 | | |
| Queue Delay | 0.0 | | | 0.0 | | |
| Total Delay | 32.9 | | | 5.0 | | |
| LOS | C | | | A | | |
| Approach Delay | 32.9 | | | 5.0 | | |
| Approach LOS | C | | | A | | |
| Queue Length 50th (ft) | 125 | | | 57 | | |
| Queue Length 95th (ft) | m145 | | | 97 | | |
| Internal Link Dist (ft) | 1 | | | 754 | 837 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | 408 | | | 2391 | | |

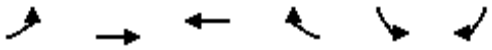


| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Starvation Cap Reductn | 0 | | | 0 | | |
| Spillback Cap Reductn | 0 | | | 0 | | |
| Storage Cap Reductn | 0 | | | 0 | | |
| Reduced v/c Ratio | 0.61 | | | 0.75 | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 84 (93%), Referenced to phase 2:NBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.75 | | | |
| Intersection Signal Delay: 8.4 | | Intersection LOS: A | |
| Intersection Capacity Utilization 65.4% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

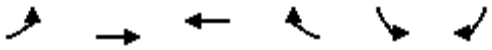
Splits and Phases: 184: NB US 321 & Pine Mountain Road U-Turn





| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 400 | 102 | 0 | 0 | 179 |
| Future Volume (vph) | 0 | 400 | 102 | 0 | 0 | 179 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.865 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1863 | 1863 | 0 | 0 | 1596 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1863 | 1863 | 0 | 0 | 1596 |
| Link Speed (mph) | | 35 | 35 | | 35 | |
| Link Distance (ft) | | 566 | 538 | | 146 | |
| Travel Time (s) | | 11.0 | 10.5 | | 2.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 3% |
| Adj. Flow (vph) | 0 | 444 | 113 | 0 | 0 | 199 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 444 | 113 | 0 | 0 | 199 |
| Sign Control | | Free | Free | | Yield | |

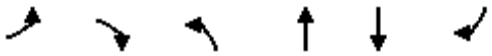
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 24.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑ | ↑ | | | ↱ |
| Traffic Volume (veh/h) | 0 | 400 | 102 | 0 | 0 | 179 |
| Future Volume (Veh/h) | 0 | 400 | 102 | 0 | 0 | 179 |
| Sign Control | | Free | Free | | Yield | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 444 | 113 | 0 | 0 | 199 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | 538 | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 113 | | | | 557 | 113 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 113 | | | | 557 | 113 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 100 | | | | 100 | 79 |
| cM capacity (veh/h) | 1476 | | | | 491 | 937 |

| Direction, Lane # | EB 1 | WB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 444 | 113 | 199 |
| Volume Left | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 199 |
| cSH | 1700 | 1700 | 937 |
| Volume to Capacity | 0.26 | 0.07 | 0.21 |
| Queue Length 95th (ft) | 0 | 0 | 20 |
| Control Delay (s) | 0.0 | 0.0 | 9.9 |
| Lane LOS | | | A |
| Approach Delay (s) | 0.0 | 0.0 | 9.9 |
| Approach LOS | | | A |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.6 | | |
| Intersection Capacity Utilization | 24.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 287 | 1715 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 287 | 1715 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 300 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1752 | 3505 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1752 | 3505 | 0 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 63 | | | 816 | 983 | |
| Travel Time (s) | 0.8 | | | 10.1 | 12.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 3% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 319 | 1906 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 319 | 1906 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 109.9% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 194 | 1904 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 194 | 1904 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 200 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1752 | 3505 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1752 | 3505 |
| Link Speed (mph) | 55 | | 55 | | | 55 |
| Link Distance (ft) | 103 | | 106 | | | 502 |
| Travel Time (s) | 1.3 | | 1.3 | | | 6.2 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 3% | 3% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 216 | 2116 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 216 | 2116 |
| Sign Control | Stop | | Stop | | | Free |

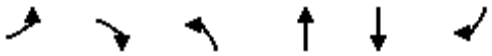
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 61.3% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 225 | 2079 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 225 | 2079 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 200 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1752 | 3505 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1752 | 3505 |
| Link Speed (mph) | 55 | | 55 | | | 55 |
| Link Distance (ft) | 70 | | 894 | | | 984 |
| Travel Time (s) | 0.9 | | 11.1 | | | 12.2 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 3% | 3% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 250 | 2310 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 250 | 2310 |
| Sign Control | Stop | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 65.4% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 102 | 1737 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 102 | 1737 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 150 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1752 | 5036 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1752 | 5036 | 0 | 0 |
| Link Speed (mph) | 25 | | | 55 | 55 | |
| Link Distance (ft) | 137 | | | 917 | 138 | |
| Travel Time (s) | 3.7 | | | 11.4 | 1.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 3% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 113 | 1930 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 113 | 1930 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 102.3% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | NEL | NER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 2098 | 179 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 2098 | 179 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | | | 0.850 | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 0 | 3505 | 1568 | 0 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 0 | 3505 | 1568 | 0 | 0 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 502 | 255 | | 146 | |
| Travel Time (s) | | 6.2 | 3.2 | | 1.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 3% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 2331 | 199 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 2331 | 199 | 0 | 0 |
| Sign Control | | Stop | Free | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 61.3% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 1614 | 0 | 0 | 0 | 2079 |
| Future Volume (vph) | 0 | 1614 | 0 | 0 | 0 | 2079 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 0.88 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 3505 | 0 | 0 | 0 | 2760 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 3505 | 0 | 0 | 0 | 2760 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 2395 | 834 | | 894 | |
| Travel Time (s) | | 29.7 | 10.3 | | 11.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 3% | 2% | 2% | 2% | 3% |
| Adj. Flow (vph) | 0 | 1793 | 0 | 0 | 0 | 2310 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 1793 | 0 | 0 | 0 | 2310 |
| Sign Control | | Free | Stop | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 76.1% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | NEL | NER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 1659 | 0 | 2087 | 0 | 0 |
| Future Volume (vph) | 0 | 1659 | 0 | 2087 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 0.88 | 1.00 | 1.00 |
| Frt | | | | 0.850 | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 3505 | 0 | 2760 | 0 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 3505 | 0 | 2760 | 0 | 0 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 760 | 2395 | | 709 | |
| Travel Time (s) | | 9.4 | 29.7 | | 8.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 3% | 2% | 3% | 2% | 2% |
| Adj. Flow (vph) | 0 | 1843 | 0 | 2319 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 1843 | 0 | 2319 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 76.3% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

| Movement | NBL | NBT | SBT | SBR | NEL | NER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 1659 | 0 | 2087 | 0 | 0 |
| Future Volume (Veh/h) | 0 | 1659 | 0 | 2087 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 1843 | 0 | 2319 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 2319 | | | | 922 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 2319 | | | | 922 | 0 |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 100 | | | | 100 | 100 |
| cM capacity (veh/h) | 212 | | | | 269 | 1084 |

| Direction, Lane # | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|
| Volume Total | 922 | 922 | 1160 | 1160 |
| Volume Left | 0 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 1160 | 1160 |
| cSH | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.54 | 0.54 | 0.68 | 0.68 |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | | | | |
| Approach Delay (s) | 0.0 | | 0.0 | |
| Approach LOS | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 76.3% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

## Summary of All Intervals

| Start Time | 6:50 |
|---|---|
| End Time | 8:00 |
| Total Time (min) | 70 |
| Time Recorded (min) | 60 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 3679 |
| Vehs Exited | 3659 |
| Starting Vehs | 269 |
| Ending Vehs | 289 |
| Travel Distance (mi) | 8163 |
| Travel Time (hr) | 293.6 |
| Total Delay (hr) | 126.8 |
| Total Stops | 7411 |
| Fuel Used (gal) | 316.0 |

## Interval #0 Information Seeding

| Start Time | 6:50 |
|---|---|
| End Time | 7:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 7:00 |
|---|---|
| End Time | 8:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 3679 |
|---|---|
| Vehs Exited | 3659 |
| Starting Vehs | 269 |
| Ending Vehs | 289 |
| Travel Distance (mi) | 8163 |
| Travel Time (hr) | 293.6 |
| Total Delay (hr) | 126.8 |
| Total Stops | 7411 |
| Fuel Used (gal) | 316.0 |

## Intersection: 161: NB US 321 & Lower Cedar Valley Road & Lower Cedar Valley Road Left-Over

| Movement | WB | WB | NB | NB | NB | SE |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | TR | <L |
| Maximum Queue (ft) | 203 | 177 | 134 | 155 | 165 | 118 |
| Average Queue (ft) | 121 | 71 | 84 | 111 | 114 | 69 |
| 95th Queue (ft) | 182 | 160 | 139 | 146 | 148 | 125 |
| Link Distance (ft) | 697 | | 42 | 42 | 42 | 46 |
| Upstream Blk Time (%) | | | 18 | 32 | 34 | 25 |
| Queuing Penalty (veh) | | | 97 | 169 | 183 | 25 |
| Storage Bay Dist (ft) | | 150 | | | | |
| Storage Blk Time (%) | 3 | 0 | | | | |
| Queuing Penalty (veh) | 4 | 0 | | | | |

## Intersection: 162: SB US 321 & Lower Cedar Valley Road U-Turn

| Movement | WB | SB | SB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 97 | 269 | 372 |
| Average Queue (ft) | 63 | 153 | 173 |
| 95th Queue (ft) | 79 | 241 | 278 |
| Link Distance (ft) | 4 | 669 | 669 |
| Upstream Blk Time (%) | 70 | | |
| Queuing Penalty (veh) | 143 | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 163: SB US 321 & Lower Cedar Valley Road Left-Over & Lower Cedar Valley Road

| Movement | EB | EB | SB | SB | SB | NW |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | R | L |
| Maximum Queue (ft) | 249 | 226 | 133 | 132 | 116 | 140 |
| Average Queue (ft) | 166 | 108 | 76 | 90 | 56 | 107 |
| 95th Queue (ft) | 233 | 222 | 137 | 142 | 110 | 140 |
| Link Distance (ft) | 601 | | 58 | 58 | 58 | 43 |
| Upstream Blk Time (%) | | | 11 | 14 | 10 | 56 |
| Queuing Penalty (veh) | | | 79 | 99 | 69 | 91 |
| Storage Bay Dist (ft) | | 250 | | | | |
| Storage Blk Time (%) | 0 | | | | | |
| Queuing Penalty (veh) | 0 | | | | | |

## Intersection: 164: NB US 321 & Lower Cedar Valley Road U-Turn

| Movement | EB | NB | NB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 86 | 175 | 146 |
| Average Queue (ft) | 61 | 84 | 88 |
| 95th Queue (ft) | 76 | 163 | 151 |
| Link Distance (ft) | 6 | 1083 | 1083 |
| Upstream Blk Time (%) | 62 | | |
| Queuing Penalty (veh) | 97 | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 165: NB US 321 & Lower Cedar Valley Road U-Turn

| Movement | NB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 235 |
| Average Queue (ft) | 100 |
| 95th Queue (ft) | 180 |
| Link Distance (ft) | 248 |
| Upstream Blk Time (%) | 0 |
| Queuing Penalty (veh) | 0 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 166: Lower Cedar Valley Road Left-Over

| Movement | SB | SB | SB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 30 | 97 | 115 |
| Average Queue (ft) | 3 | 7 | 13 |
| 95th Queue (ft) | 16 | 39 | 56 |
| Link Distance (ft) | | 550 | 550 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | 150 | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 167: SB US 321 & Lower Cedar Valley Road U-Turn

| Movement | SB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 136 |
| Average Queue (ft) | 45 |
| 95th Queue (ft) | 103 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 300 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 168: NB US 321 & Lower Cedar Valley Road Left-Over

| Movement | NB | NB | NB | NB |
|---|---|---|---|---|
| Directions Served | L | T | T | T |
| Maximum Queue (ft) | 98 | 110 | 143 | 206 |
| Average Queue (ft) | 24 | 25 | 60 | 77 |
| 95th Queue (ft) | 74 | 86 | 142 | 167 |
| Link Distance (ft) | | 978 | 978 | 978 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | 200 | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 171: NB US 321 & Quarry Estates Road

| Movement | WB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 67 |
| Average Queue (ft) | 24 |
| 95th Queue (ft) | 53 |
| Link Distance (ft) | 403 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 172: Quarry Estates Road & SB US 321

| Movement | EB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 36 |
| Average Queue (ft) | 8 |
| 95th Queue (ft) | 24 |
| Link Distance (ft) | 651 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 181: NB US 321 & Pine Mountain Road & Pine Mountain Road Left-Over

| Movement | WB | WB | NB | NB | NB | SE |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | R | L |
| Maximum Queue (ft) | 282 | 249 | 186 | 191 | 56 | 119 |
| Average Queue (ft) | 184 | 127 | 139 | 146 | 20 | 80 |
| 95th Queue (ft) | 277 | 241 | 195 | 183 | 64 | 114 |
| Link Distance (ft) | 1036 | | 79 | 79 | 79 | 34 |
| Upstream Blk Time (%) | | | 19 | 24 | | 50 |
| Queuing Penalty (veh) | | | 112 | 139 | | 98 |
| Storage Bay Dist (ft) | | 400 | | | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 182: SB US 321 & Pine Mountain Road U-Turn

| Movement | WB | SB | SB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 96 | 610 | 571 |
| Average Queue (ft) | 64 | 300 | 253 |
| 95th Queue (ft) | 83 | 513 | 483 |
| Link Distance (ft) | 4 | 993 | 993 |
| Upstream Blk Time (%) | 64 | | |
| Queuing Penalty (veh) | 183 | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 183: SB US 321 & Pine Mountain Road Left-Over & Pine Mountain Road

| Movement | EB | EB | SB | SB | NW |
|---|---|---|---|---|---|
| Directions Served | > | > | T | T | L |
| Maximum Queue (ft) | 255 | 183 | 84 | 93 | 116 |
| Average Queue (ft) | 146 | 117 | 82 | 84 | 57 |
| 95th Queue (ft) | 215 | 177 | 92 | 88 | 105 |
| Link Distance (ft) | 451 | | 23 | 23 | 48 |
| Upstream Blk Time (%) | | | 28 | 28 | 24 |
| Queuing Penalty (veh) | | | 270 | 270 | 24 |
| Storage Bay Dist (ft) | | 200 | | | |
| Storage Blk Time (%) | 1 | 0 | | | |
| Queuing Penalty (veh) | 3 | 0 | | | |

## Intersection: 184: NB US 321 & Pine Mountain Road U-Turn

| Movement | EB | NB | NB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 112 | 288 | 298 |
| Average Queue (ft) | 72 | 111 | 127 |
| 95th Queue (ft) | 91 | 231 | 230 |
| Link Distance (ft) | 15 | 784 | 784 |
| Upstream Blk Time (%) | 59 | | |
| Queuing Penalty (veh) | 133 | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 185: Pine Mountain Road & Ramp to Pine Mountain Road

| Movement | SB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 78 |
| Average Queue (ft) | 13 |
| 95th Queue (ft) | 47 |
| Link Distance (ft) | 78 |
| Upstream Blk Time (%) | 0 |
| Queuing Penalty (veh) | 1 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 186: NB US 321 & Pine Mountain Road U-Turn

| Movement | NB | NB |
|---|---|---|
| Directions Served | L | T |
| Maximum Queue (ft) | 243 | 216 |
| Average Queue (ft) | 115 | 7 |
| 95th Queue (ft) | 196 | 71 |
| Link Distance (ft) | | 754 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | 300 | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 187: SB US 321 & Pine Mountain Road Left-Over

| Movement | SB | SB | SB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 147 | 361 | 324 |
| Average Queue (ft) | 29 | 99 | 130 |
| 95th Queue (ft) | 88 | 248 | 263 |
| Link Distance (ft) | | 447 | 447 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | 200 | | |
| Storage Blk Time (%) | | 2 | |
| Queuing Penalty (veh) | | 4 | |

## Intersection: 188: SB US 321 & Pine Mountain Road U-Turn

| Movement | SB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 167 |
| Average Queue (ft) | 67 |
| 95th Queue (ft) | 144 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 200 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 189: NB US 321 & Pine Mountain Road Left-Over

| Movement | NB | NB |
|---|---|---|
| Directions Served | T | T |
| Maximum Queue (ft) | 228 | 214 |
| Average Queue (ft) | 59 | 72 |
| 95th Queue (ft) | 163 | 176 |
| Link Distance (ft) | 862 | 862 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | 1 | |
| Queuing Penalty (veh) | 1 | |

## Intersection: 950: Ramp to Pine Mountain Road & SB US 321

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 988: US 321/NB US 321 & SB US 321

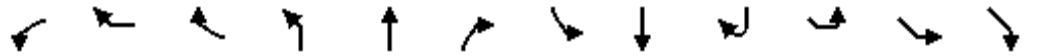
| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 989: SB US 321 & NB US 321/US 321

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

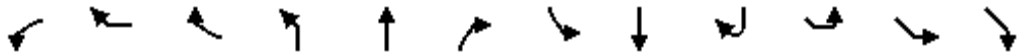
## Network Summary

Network wide Queuing Penalty: 2294



| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL2 | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 134 | 0 | 2021 | 125 | 0 | 0 | 0 | 43 | 129 | 0 |
| Future Volume (vph) | 0 | 0 | 134 | 0 | 2021 | 125 | 0 | 0 | 0 | 43 | 129 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 150 | | 0 | | 0 | 0 | | 0 | | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 0 | 0 | | 0 | | 1 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.991 | | | | | | | |
| Flt Protected | | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2787 | 0 | 4943 | 0 | 0 | 0 | 0 | 0 | 1752 | 0 |
| Flt Permitted | | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2787 | 0 | 4943 | 0 | 0 | 0 | 0 | 0 | 1752 | 0 |
| Right Turn on Red | | | No | | | No | | | No | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | | 25 | |
| Link Distance (ft) | 760 | | | | 118 | | | 761 | | | 116 | |
| Travel Time (s) | 14.8 | | | | 1.5 | | | 9.4 | | | 3.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 3% | 4% | 4% | 2% | 2% | 2% | 3% | 3% | 3% |
| Adj. Flow (vph) | 0 | 0 | 149 | 0 | 2246 | 139 | 0 | 0 | 0 | 48 | 143 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 149 | 0 | 2385 | 0 | 0 | 0 | 0 | 0 | 191 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Right | Left | Left | Right | Left | Left | Right | Left | Left | Right |
| Median Width(ft) | 0 | | | | 0 | | | 0 | | | 12 | |
| Link Offset(ft) | 0 | | | | 0 | | | 0 | | | 0 | |
| Crosswalk Width(ft) | 16 | | | | 16 | | | 16 | | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | | |
| Headway 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 |
| Turning Speed (mph) | 15 | 9 | 9 | 15 | | 9 | 15 | | 9 | 15 | 15 | 9 |
| Turn Type | | | Prot | | NA | | | | | Prot | Prot | |
| Protected Phases | | | 8 | | 2 | | | | | 7 | 7 | |
| Permitted Phases | | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 14.0 | | | | | 7.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 21.0 | | | | | 14.0 | 14.0 | |
| Total Split (s) | | | 14.0 | | 56.0 | | | | | 20.0 | 20.0 | |
| Total Split (%) | | | 15.6% | | 62.2% | | | | | 22.2% | 22.2% | |
| Maximum Green (s) | | | 7.0 | | 49.0 | | | | | 13.0 | 13.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | | | | | 2.0 | 2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | | | | | | 5.0 | |
| Lead/Lag | | | Lag | | | | | | | Lead | Lead | |
| Lead-Lag Optimize? | | | Yes | | | | | | | Yes | Yes | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | |
| Recall Mode | | | None | | C-Min | | | | | None | None | |
| Act Effct Green (s) | | | 9.0 | | 51.7 | | | | | | 14.3 | |
| Actuated g/C Ratio | | | 0.10 | | 0.57 | | | | | | 0.16 | |
| v/c Ratio | | | 0.53 | | 0.84 | | | | | | 0.69 | |

## 161: NB US 321 & Lower Cedar Valley Road & Lower Cedar Valley Road Left-Over



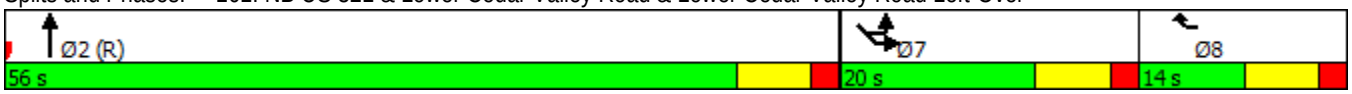
| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL2 | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Control Delay | | | 46.1 | | 9.5 | | | | | | 44.9 | |
| Queue Delay | | | 0.0 | | 0.0 | | | | | | 0.0 | |
| Total Delay | | | 46.1 | | 9.5 | | | | | | 44.9 | |
| LOS | | | D | | A | | | | | | D | |
| Approach Delay | 46.1 | | | | 9.5 | | | | | | 44.9 | |
| Approach LOS | D | | | | A | | | | | | D | |
| Queue Length 50th (ft) | | | 46 | | 203 | | | | | | 97 | |
| Queue Length 95th (ft) | | | 80 | | m258 | | | | | | m#159 | |
| Internal Link Dist (ft) | 680 | | | | 38 | | | 681 | | | 36 | |
| Turn Bay Length (ft) | | | 150 | | | | | | | | | |
| Base Capacity (vph) | | | 279 | | 2839 | | | | | | 292 | |
| Starvation Cap Reductn | | | 0 | | 0 | | | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | | | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | | | | | | 0 | |
| Reduced v/c Ratio | | | 0.53 | | 0.84 | | | | | | 0.65 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 33 (37%), Referenced to phase 2:NBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.84 | | | |
| Intersection Signal Delay: 14.0 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

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

Splits and Phases: 161: NB US 321 & Lower Cedar Valley Road & Lower Cedar Valley Road Left-Over



## 162: SB US 321 & Lower Cedar Valley Road U-Turn

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 79 | 0 | 0 | 0 | 0 | 1685 |
| Future Volume (vph) | 79 | 0 | 0 | 0 | 0 | 1685 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1752 | 0 | 0 | 0 | 0 | 3505 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1752 | 0 | 0 | 0 | 0 | 3505 |
| Right Turn on Red | No | No | | No | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 30 | | | 55 |
| Link Distance (ft) | 69 | | 391 | | | 709 |
| Travel Time (s) | 1.9 | | 8.9 | | | 8.8 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 2% | 2% | 3% |
| Adj. Flow (vph) | 88 | 0 | 0 | 0 | 0 | 1872 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 88 | 0 | 0 | 0 | 0 | 1872 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 12 | | 0 | | | 0 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 16 | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Turn Type | Prot | | | | | NA |
| Protected Phases | 8 | | | | | 6 |
| Permitted Phases | | | | | | |
| Minimum Initial (s) | 7.0 | | | | | 14.0 |
| Minimum Split (s) | 14.0 | | | | | 21.0 |
| Total Split (s) | 16.0 | | | | | 74.0 |
| Total Split (%) | 17.8% | | | | | 82.2% |
| Maximum Green (s) | 9.0 | | | | | 67.0 |
| Yellow Time (s) | 5.0 | | | | | 5.0 |
| All-Red Time (s) | 2.0 | | | | | 2.0 |
| Total Lost Time (s) | 5.0 | | | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | | | | 3.0 |
| Recall Mode | None | | | | | C-Min |
| Act Effct Green (s) | 11.1 | | | | | 72.7 |
| Actuated g/C Ratio | 0.12 | | | | | 0.81 |
| v/c Ratio | 0.41 | | | | | 0.66 |
| Control Delay | 49.4 | | | | | 3.2 |
| Queue Delay | 0.0 | | | | | 0.0 |
| Total Delay | 49.4 | | | | | 3.2 |

## 162: SB US 321 & Lower Cedar Valley Road U-Turn

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| LOS | D | | | | | A |
| Approach Delay | 49.4 | | | | | 3.2 |
| Approach LOS | D | | | | | A |
| Queue Length 50th (ft) | 52 | | | | | 115 |
| Queue Length 95th (ft) | m54 | | | | | 110 |
| Internal Link Dist (ft) | 1 | | 311 | | | 629 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | 226 | | | | | 2856 |
| Starvation Cap Reductn | 0 | | | | | 0 |
| Spillback Cap Reductn | 0 | | | | | 0 |
| Storage Cap Reductn | 0 | | | | | 0 |
| Reduced v/c Ratio | 0.39 | | | | | 0.66 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 66 (73%), Referenced to phase 6:SBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.66 | | | |
| Intersection Signal Delay: 5.3 | | Intersection LOS: A | |
| Intersection Capacity Utilization 112.2% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 162: SB US 321 & Lower Cedar Valley Road U-Turn

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 484 | 0 | 0 | 0 | 0 | 1451 | 157 | 108 | 0 |
| Future Volume (vph) | 0 | 0 | 484 | 0 | 0 | 0 | 0 | 1451 | 157 | 108 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 250 | | 0 | | 0 | 0 | | 0 | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 0 | 0 | | 1 | 1 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | | | | 0.850 | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2760 | 0 | 0 | 0 | 0 | 3505 | 1568 | 1736 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2760 | 0 | 0 | 0 | 0 | 3505 | 1568 | 1736 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 661 | | | | 1107 | | | 120 | | 112 | |
| Travel Time (s) | 12.9 | | | | 13.7 | | | 1.5 | | 3.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 2% | 2% | 2% | 2% | 3% | 3% | 4% | 3% |
| Adj. Flow (vph) | 0 | 0 | 538 | 0 | 0 | 0 | 0 | 1612 | 174 | 120 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 538 | 0 | 0 | 0 | 0 | 1612 | 174 | 120 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Right | Left | Left | Right | Left | Left | Right | Left | Right |
| Median Width(ft) | 0 | | | | 12 | | | 12 | | 12 | |
| Link Offset(ft) | 0 | | | | 0 | | | 0 | | 0 | |
| Crosswalk Width(ft) | 16 | | | | 16 | | | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | 9 | 15 | | 9 | 15 | | 9 | 15 | 9 |
| Turn Type | | | Perm | | | | | NA | Perm | Prot | |
| Protected Phases | | | | | | | | 6 | | 8 | |
| Permitted Phases | | | 4 | | | | | | 6 | | |
| Minimum Initial (s) | | | 7.0 | | | | | 14.0 | 14.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 21.0 | 21.0 | 14.0 | |
| Total Split (s) | | | 31.0 | | | | | 59.0 | 59.0 | 31.0 | |
| Total Split (%) | | | 34.4% | | | | | 65.6% | 65.6% | 34.4% | |
| Maximum Green (s) | | | 24.0 | | | | | 52.0 | 52.0 | 24.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | 2.0 | 2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | |
| Recall Mode | | | None | | | | | C-Min | C-Min | None | |
| Act Effct Green (s) | | | 23.4 | | | | | 56.6 | 56.6 | 23.4 | |
| Actuated g/C Ratio | | | 0.26 | | | | | 0.63 | 0.63 | 0.26 | |
| v/c Ratio | | | 0.75 | | | | | 0.73 | 0.18 | 0.27 | |

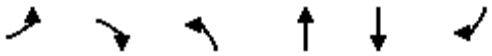
## 163: SB US 321 & Lower Cedar Valley Road Left-Over & Lower Cedar Valley Road

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Control Delay | | | 37.5 | | | | | 8.7 | 4.2 | 23.5 | |
| Queue Delay | | | 0.0 | | | | | 0.0 | 0.0 | 0.0 | |
| Total Delay | | | 37.5 | | | | | 8.7 | 4.2 | 23.5 | |
| LOS | | | D | | | | | A | A | C | |
| Approach Delay | 37.5 | | | | | | | 8.3 | | 23.5 | |
| Approach LOS | D | | | | | | | A | | C | |
| Queue Length 50th (ft) | | | 156 | | | | | 233 | 27 | 44 | |
| Queue Length 95th (ft) | | | 215 | | | | | 184 | m30 | m46 | |
| Internal Link Dist (ft) | 581 | | | | 1027 | | | 40 | | 32 | |
| Turn Bay Length (ft) | | | 250 | | | | | | | | |
| Base Capacity (vph) | | | 797 | | | | | 2202 | 985 | 501 | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Reduced v/c Ratio | | | 0.68 | | | | | 0.73 | 0.18 | 0.24 | |

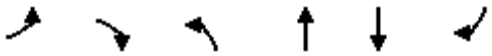
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 79 (88%), Referenced to phase 6:SBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.75 | | | |
| Intersection Signal Delay: 15.4 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 163: SB US 321 & Lower Cedar Valley Road Left-Over & Lower Cedar Valley Road



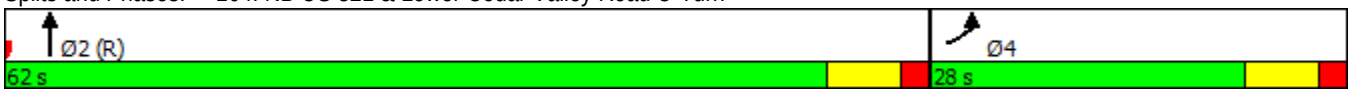
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 320 | 0 | 0 | 1934 | 0 | 0 |
| Future Volume (vph) | 320 | 0 | 0 | 1934 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 0 | 0 | 3471 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 0 | 0 | 3471 | 0 | 0 |
| Right Turn on Red | No | No | | | | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | | 55 | 55 | |
| Link Distance (ft) | 56 | | | 1125 | 1035 | |
| Travel Time (s) | 1.5 | | | 13.9 | 12.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 4% | 2% | 2% |
| Adj. Flow (vph) | 356 | 0 | 0 | 2149 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 356 | 0 | 0 | 2149 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Right |
| Median Width(ft) | 12 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | 15 | | | 9 |
| Turn Type | Prot | | | NA | | |
| Protected Phases | 4 | | | 2 | | |
| Permitted Phases | | | | | | |
| Minimum Initial (s) | 7.0 | | | 14.0 | | |
| Minimum Split (s) | 14.0 | | | 21.0 | | |
| Total Split (s) | 28.0 | | | 62.0 | | |
| Total Split (%) | 31.1% | | | 68.9% | | |
| Maximum Green (s) | 21.0 | | | 55.0 | | |
| Yellow Time (s) | 5.0 | | | 5.0 | | |
| All-Red Time (s) | 2.0 | | | 2.0 | | |
| Total Lost Time (s) | 5.0 | | | 5.0 | | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | | |
| Recall Mode | None | | | C-Min | | |
| Act Effct Green (s) | 22.1 | | | 57.9 | | |
| Actuated g/C Ratio | 0.25 | | | 0.64 | | |
| v/c Ratio | 0.84 | | | 0.96 | | |
| Control Delay | 48.0 | | | 24.5 | | |
| Queue Delay | 0.0 | | | 0.0 | | |
| Total Delay | 48.0 | | | 24.5 | | |

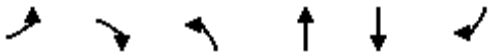


| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| LOS | D | | | C | | |
| Approach Delay | 48.0 | | | 24.5 | | |
| Approach LOS | D | | | C | | |
| Queue Length 50th (ft) | 178 | | | 572 | | |
| Queue Length 95th (ft) | m#316 | | | #790 | | |
| Internal Link Dist (ft) | 1 | | | 1045 | 955 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | 443 | | | 2232 | | |
| Starvation Cap Reductn | 0 | | | 0 | | |
| Spillback Cap Reductn | 0 | | | 0 | | |
| Storage Cap Reductn | 0 | | | 0 | | |
| Reduced v/c Ratio | 0.80 | | | 0.96 | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 15 (17%), Referenced to phase 2:NBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.96 | | | |
| Intersection Signal Delay: 27.8 | | Intersection LOS: C | |
| Intersection Capacity Utilization 79.5% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 164: NB US 321 & Lower Cedar Valley Road U-Turn





| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 79 | 2103 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 79 | 2103 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1752 | 3505 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1752 | 3505 | 0 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 69 | | | 282 | 760 | |
| Travel Time (s) | 0.9 | | | 3.5 | 9.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 3% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 88 | 2337 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 88 | 2337 | 0 | 0 |
| Enter Blocked Intersection | No | No | Yes | Yes | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 0 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | 25 | | | 9 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 112.2% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 172 | 1608 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 172 | 1608 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 150 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1752 | 5036 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1752 | 5036 |
| Link Speed (mph) | 25 | | 55 | | | 55 |
| Link Distance (ft) | 116 | | 120 | | | 594 |
| Travel Time (s) | 3.2 | | 1.5 | | | 7.4 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 3% | 3% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 191 | 1787 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 191 | 1787 |
| Enter Blocked Intersection | No | No | No | No | Yes | Yes |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 0 | | 12 | | | 12 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 16 | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | | 9 | 25 | |
| Sign Control | Stop | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 34.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 0 | 172 | 1608 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 0 | 172 | 1608 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 0 | 191 | 1787 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | 120 | | | 985 |
| pX, platoon unblocked | 0.89 | | | | | |
| vC, conflicting volume | 978 | 0 | | | 0 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 547 | 0 | | | 0 | |
| tC, single (s) | 6.8 | 6.9 | | | 4.2 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 100 | 100 | | | 88 | |
| cM capacity (veh/h) | 367 | 1084 | | | 1614 | |

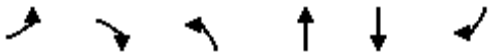
| Direction, Lane # | SB 1 | SB 2 | SB 3 | SB 4 |
|---|---|---|---|---|
| Volume Total | 191 | 596 | 596 | 596 |
| Volume Left | 191 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 |
| cSH | 1614 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.12 | 0.35 | 0.35 | 0.35 |
| Queue Length 95th (ft) | 10 | 0 | 0 | 0 |
| Control Delay (s) | 7.5 | 0.0 | 0.0 | 0.0 |
| Lane LOS | A | | | |
| Approach Delay (s) | 0.7 | | | |
| Approach LOS | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.7 | | |
| Intersection Capacity Utilization | 34.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 320 | 1615 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 320 | 1615 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 300 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1736 | 3471 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1736 | 3471 |
| Link Speed (mph) | 55 | | 55 | | | 55 |
| Link Distance (ft) | 56 | | 1159 | | | 1107 |
| Travel Time (s) | 0.7 | | 14.4 | | | 13.7 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 356 | 1794 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 356 | 1794 |
| Enter Blocked Intersection | No | No | No | No | Yes | Yes |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 0 | | 12 | | | 12 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 16 | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | | 9 | 25 | |
| Sign Control | Stop | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 79.5% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

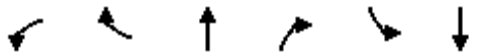
Intersection Sign configuration not allowed in HCM analysis.



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 108 | 2146 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 108 | 2146 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 200 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 112 | | | 1035 | 118 | |
| Travel Time (s) | 1.4 | | | 12.8 | 1.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 120 | 2384 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 120 | 2384 | 0 | 0 |
| Enter Blocked Intersection | No | No | Yes | Yes | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 0 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | 25 | | | 9 |
| Sign Control | Stop | | | Free | Stop | |

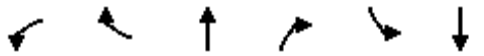
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 124.3% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 27 | 2155 | 63 | 0 | 0 |
| Future Volume (vph) | 0 | 27 | 2155 | 63 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 |
| Frt | | 0.865 | 0.996 | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1611 | 5016 | 0 | 0 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1611 | 5016 | 0 | 0 | 0 |
| Link Speed (mph) | 35 | | 55 | | | 55 |
| Link Distance (ft) | 468 | | 761 | | | 282 |
| Travel Time (s) | 9.1 | | 9.4 | | | 3.5 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 3% | 4% | 4% |
| Adj. Flow (vph) | 0 | 30 | 2394 | 70 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 30 | 2464 | 0 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 0 | | 0 | | | 0 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 16 | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Sign Control | Stop | | Free | | | Free |

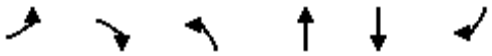
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 53.0% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 27 | 2155 | 63 | 0 | 0 |
| Future Volume (Veh/h) | 0 | 27 | 2155 | 63 | 0 | 0 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 30 | 2394 | 70 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | 761 | | | |
| pX, platoon unblocked | 0.60 | 0.60 | | | 0.60 | |
| vC, conflicting volume | 2429 | 833 | | | 2464 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1043 | 0 | | | 1102 | |
| tC, single (s) | 6.8 | 6.9 | | | 4.2 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 100 | 95 | | | 100 | |
| cM capacity (veh/h) | 135 | 650 | | | 370 | |

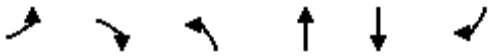
| Direction, Lane # | WB 1 | NB 1 | NB 2 | NB 3 |
|---|---|---|---|---|
| Volume Total | 30 | 958 | 958 | 549 |
| Volume Left | 0 | 0 | 0 | 0 |
| Volume Right | 30 | 0 | 0 | 70 |
| cSH | 650 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.05 | 0.56 | 0.56 | 0.32 |
| Queue Length 95th (ft) | 4 | 0 | 0 | 0 |
| Control Delay (s) | 10.8 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | |
| Approach Delay (s) | 10.8 | 0.0 | | |
| Approach LOS | B | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.1 | | |
| Intersection Capacity Utilization | 53.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 61 | 0 | 0 | 1737 | 16 |
| Future Volume (vph) | 0 | 61 | 0 | 0 | 1737 | 16 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 0 | | | 250 |
| Storage Lanes | 0 | 1 | 0 | | | 1 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.91 |
| Frt | | 0.865 | | | 0.999 | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1580 | 0 | 0 | 5031 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1580 | 0 | 0 | 5031 | 0 |
| Link Speed (mph) | 35 | | | 55 | 55 | |
| Link Distance (ft) | 724 | | | 594 | 391 | |
| Travel Time (s) | 14.1 | | | 7.4 | 4.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 4% | 2% | 2% | 3% | 3% |
| Adj. Flow (vph) | 0 | 68 | 0 | 0 | 1930 | 18 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 68 | 0 | 0 | 1948 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 0 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | 15 | | | 9 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 44.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 61 | 0 | 0 | 1737 | 16 |
| Future Volume (Veh/h) | 0 | 61 | 0 | 0 | 1737 | 16 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 68 | 0 | 0 | 1930 | 18 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | 714 | 391 | |
| pX, platoon unblocked | 0.78 | 0.78 | 0.78 | | | |
| vC, conflicting volume | 1939 | 652 | 1948 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1215 | 0 | 1227 | | | |
| tC, single (s) | 6.8 | 7.0 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 92 | 100 | | | |
| cM capacity (veh/h) | 135 | 840 | 440 | | | |

| Direction, Lane # | EB 1 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|
| Volume Total | 68 | 772 | 772 | 404 |
| Volume Left | 0 | 0 | 0 | 0 |
| Volume Right | 68 | 0 | 0 | 18 |
| cSH | 840 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.08 | 0.45 | 0.45 | 0.24 |
| Queue Length 95th (ft) | 7 | 0 | 0 | 0 |
| Control Delay (s) | 9.7 | 0.0 | 0.0 | 0.0 |
| Lane LOS | A | | | |
| Approach Delay (s) | 9.7 | 0.0 | | |
| Approach LOS | A | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.3 | | |
| Intersection Capacity Utilization | 44.4% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

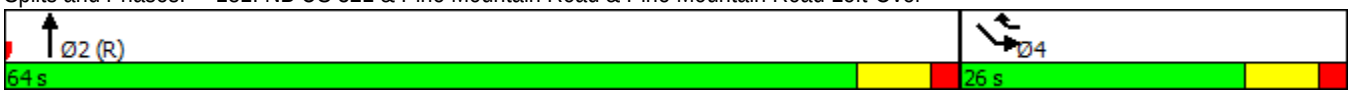
| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 444 | 0 | 1796 | 287 | 0 | 0 | 0 | 228 | 0 |
| Future Volume (vph) | 0 | 0 | 444 | 0 | 1796 | 287 | 0 | 0 | 0 | 228 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 400 | | 0 | | 0 | 400 | | 0 | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 1 | 0 | | 0 | 1 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2787 | 0 | 3505 | 1568 | 0 | 0 | 0 | 1752 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2787 | 0 | 3505 | 1568 | 0 | 0 | 0 | 1752 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 1087 | | | | 138 | | | 816 | | 103 | |
| Travel Time (s) | 21.2 | | | | 1.7 | | | 10.1 | | 2.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 3% | 3% | 3% | 4% | 4% | 2% | 3% | 2% |
| Adj. Flow (vph) | 0 | 0 | 493 | 0 | 1996 | 319 | 0 | 0 | 0 | 253 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 493 | 0 | 1996 | 319 | 0 | 0 | 0 | 253 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Right | Left | Left | Right | Left | Left | Right | Left | Right |
| Median Width(ft) | 0 | | | | 12 | | | 12 | | 12 | |
| Link Offset(ft) | 0 | | | | 0 | | | 0 | | 0 | |
| Crosswalk Width(ft) | 16 | | | | 16 | | | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | 9 | 15 | | 9 | 15 | | 9 | 15 | 9 |
| Turn Type | | | Prot | | NA | Free | | | | Prot | |
| Protected Phases | | | 4 | | 2 | | | | | 4 | |
| Permitted Phases | | | | | | Free | | | | | |
| Minimum Initial (s) | | | 7.0 | | 14.0 | | | | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 21.0 | | | | | 14.0 | |
| Total Split (s) | | | 26.0 | | 64.0 | | | | | 26.0 | |
| Total Split (%) | | | 28.9% | | 71.1% | | | | | 28.9% | |
| Maximum Green (s) | | | 19.0 | | 57.0 | | | | | 19.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | | | | | 2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | | | | | 3.0 | |
| Recall Mode | | | None | | C-Min | | | | | None | |
| Act Effct Green (s) | | | 20.2 | | 59.8 | 90.0 | | | | 20.2 | |
| Actuated g/C Ratio | | | 0.22 | | 0.66 | 1.00 | | | | 0.22 | |
| v/c Ratio | | | 0.79 | | 0.86 | 0.20 | | | | 0.64 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Control Delay | | | 42.9 | | 7.0 | 0.1 | | | | 45.7 | |
| Queue Delay | | | 0.0 | | 0.0 | 0.0 | | | | 0.0 | |
| Total Delay | | | 42.9 | | 7.0 | 0.1 | | | | 45.7 | |
| LOS | | | D | | A | A | | | | D | |
| Approach Delay | 42.9 | | | | 6.0 | | | | | 45.7 | |
| Approach LOS | D | | | | A | | | | | D | |
| Queue Length 50th (ft) | | | 148 | | 60 | 0 | | | | 151 | |
| Queue Length 95th (ft) | | | #212 | | 360 | m0 | | | | m190 | |
| Internal Link Dist (ft) | 1007 | | | | 58 | | | 736 | | 23 | |
| Turn Bay Length (ft) | | | 400 | | | | | | | | |
| Base Capacity (vph) | | | 650 | | 2327 | 1568 | | | | 408 | |
| Starvation Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Reduced v/c Ratio | | | 0.76 | | 0.86 | 0.20 | | | | 0.62 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 14 (16%), Referenced to phase 2:NBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.86 | | | |
| Intersection Signal Delay: 15.2 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 181: NB US 321 & Pine Mountain Road & Pine Mountain Road Left-Over

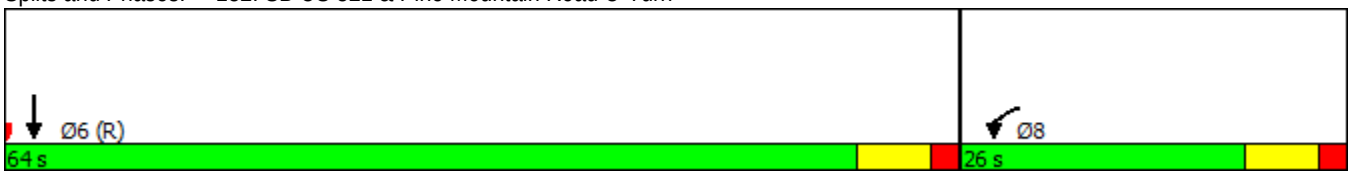


| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 250 | 0 | 0 | 0 | 0 | 1715 |
| Future Volume (vph) | 250 | 0 | 0 | 0 | 0 | 1715 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1752 | 0 | 0 | 0 | 0 | 3505 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1752 | 0 | 0 | 0 | 0 | 3505 |
| Right Turn on Red | No | No | | No | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 55 | | | 55 |
| Link Distance (ft) | 63 | | 255 | | | 1015 |
| Travel Time (s) | 1.7 | | 3.2 | | | 12.6 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 2% | 2% | 3% |
| Adj. Flow (vph) | 278 | 0 | 0 | 0 | 0 | 1906 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 278 | 0 | 0 | 0 | 0 | 1906 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 12 | | 0 | | | 0 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 16 | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Turn Type | Prot | | | | | NA |
| Protected Phases | 8 | | | | | 6 |
| Permitted Phases | | | | | | |
| Minimum Initial (s) | 7.0 | | | | | 14.0 |
| Minimum Split (s) | 14.0 | | | | | 21.0 |
| Total Split (s) | 26.0 | | | | | 64.0 |
| Total Split (%) | 28.9% | | | | | 71.1% |
| Maximum Green (s) | 19.0 | | | | | 57.0 |
| Yellow Time (s) | 5.0 | | | | | 5.0 |
| All-Red Time (s) | 2.0 | | | | | 2.0 |
| Total Lost Time (s) | 5.0 | | | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | | | | 3.0 |
| Recall Mode | None | | | | | C-Min |
| Act Effct Green (s) | 19.3 | | | | | 60.7 |
| Actuated g/C Ratio | 0.21 | | | | | 0.67 |
| v/c Ratio | 0.74 | | | | | 0.81 |
| Control Delay | 34.4 | | | | | 14.4 |
| Queue Delay | 0.0 | | | | | 0.0 |
| Total Delay | 34.4 | | | | | 14.4 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| LOS | C | | | | | B |
| Approach Delay | 34.4 | | | | | 14.4 |
| Approach LOS | C | | | | | B |
| Queue Length 50th (ft) | 140 | | | | | 382 |
| Queue Length 95th (ft) | m172 | | | | | 493 |
| Internal Link Dist (ft) | 1 | | 175 | | | 935 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | 408 | | | | | 2364 |
| Starvation Cap Reductn | 0 | | | | | 0 |
| Spillback Cap Reductn | 0 | | | | | 0 |
| Storage Cap Reductn | 0 | | | | | 0 |
| Reduced v/c Ratio | 0.68 | | | | | 0.81 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 89 (99%), Referenced to phase 6:SBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.81 | | | |
| Intersection Signal Delay: 17.0 | | Intersection LOS: B | |
| Intersection Capacity Utilization 109.9% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 182: SB US 321 & Pine Mountain Road U-Turn



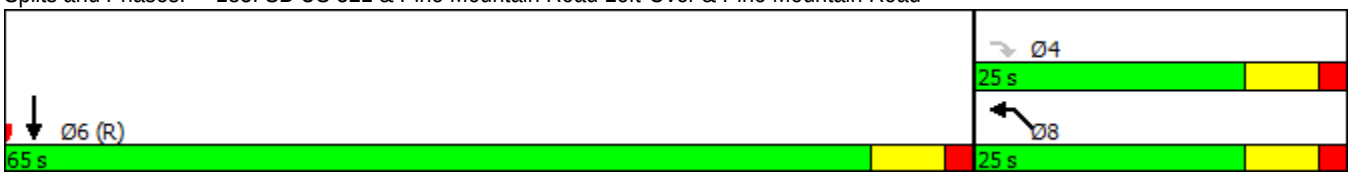
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 281 | 0 | 0 | 0 | 0 | 1512 | 0 | 175 | 0 |
| Future Volume (vph) | 0 | 0 | 281 | 0 | 0 | 0 | 0 | 1512 | 0 | 175 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 200 | | 0 | | 0 | 0 | | 0 | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 0 | 0 | | 0 | 1 | 0 |
| Taper Length (ft) | 100 | | | 100 | | | 100 | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2787 | 0 | 0 | 0 | 0 | 3505 | 0 | 1752 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2787 | 0 | 0 | 0 | 0 | 3505 | 0 | 1752 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 538 | | | | 984 | | | 106 | | 137 | |
| Travel Time (s) | 10.5 | | | | 12.2 | | | 1.3 | | 3.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 2% | 2% | 3% | 2% | 3% | 2% |
| Adj. Flow (vph) | 0 | 0 | 312 | 0 | 0 | 0 | 0 | 1680 | 0 | 194 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 312 | 0 | 0 | 0 | 0 | 1680 | 0 | 194 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Right | Left | Left | Right | Left | Left | Right | Left | Right |
| Median Width(ft) | 0 | | | | 12 | | | 12 | | 12 | |
| Link Offset(ft) | 0 | | | | 0 | | | 0 | | 0 | |
| Crosswalk Width(ft) | 16 | | | | 16 | | | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | 9 | 15 | | 9 | 15 | | 9 | 15 | 9 |
| Turn Type | | | Perm | | | | | NA | | Prot | |
| Protected Phases | | | | | | | | 6 | | 8 | |
| Permitted Phases | | | 4 | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | | | | 14.0 | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 21.0 | | 14.0 | |
| Total Split (s) | | | 25.0 | | | | | 65.0 | | 25.0 | |
| Total Split (%) | | | 27.8% | | | | | 72.2% | | 27.8% | |
| Maximum Green (s) | | | 18.0 | | | | | 58.0 | | 18.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | | 2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | | 3.0 | |
| Recall Mode | | | None | | | | | C-Min | | None | |
| Act Effct Green (s) | | | 17.0 | | | | | 63.0 | | 17.0 | |
| Actuated g/C Ratio | | | 0.19 | | | | | 0.70 | | 0.19 | |
| v/c Ratio | | | 0.59 | | | | | 0.68 | | 0.59 | |

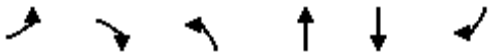
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Control Delay | | | 37.9 | | | | | 4.8 | | 32.3 | |
| Queue Delay | | | 0.0 | | | | | 0.0 | | 0.0 | |
| Total Delay | | | 37.9 | | | | | 4.8 | | 32.3 | |
| LOS | | | D | | | | | A | | C | |
| Approach Delay | 37.9 | | | | | | | 4.8 | | 32.3 | |
| Approach LOS | D | | | | | | | A | | C | |
| Queue Length 50th (ft) | | | 92 | | | | | 131 | | 100 | |
| Queue Length 95th (ft) | | | 134 | | | | | 167 | | m130 | |
| Internal Link Dist (ft) | 458 | | | | 904 | | | 26 | | 57 | |
| Turn Bay Length (ft) | | | 200 | | | | | | | | |
| Base Capacity (vph) | | | 619 | | | | | 2455 | | 389 | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | | 0 | |
| Reduced v/c Ratio | | | 0.50 | | | | | 0.68 | | 0.50 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 12 (13%), Referenced to phase 6:SBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.68 | | | |
| Intersection Signal Delay: 12.0 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

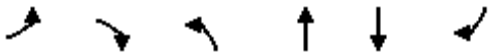
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 183: SB US 321 & Pine Mountain Road Left-Over & Pine Mountain Road





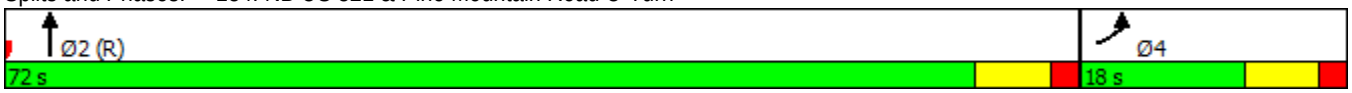
| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 179 | 0 | 0 | 2079 | 0 | 0 |
| Future Volume (vph) | 179 | 0 | 0 | 2079 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1752 | 0 | 0 | 3505 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1752 | 0 | 0 | 3505 | 0 | 0 |
| Right Turn on Red | No | No | | | | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | | 55 | 55 | |
| Link Distance (ft) | 70 | | | 834 | 917 | |
| Travel Time (s) | 1.9 | | | 10.3 | 11.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 2% | 2% | 3% | 2% | 2% |
| Adj. Flow (vph) | 199 | 0 | 0 | 2310 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 199 | 0 | 0 | 2310 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 12 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | 15 | | | 9 |
| Turn Type | Prot | | | NA | | |
| Protected Phases | 4 | | | 2 | | |
| Permitted Phases | | | | | | |
| Minimum Initial (s) | 7.0 | | | 14.0 | | |
| Minimum Split (s) | 14.0 | | | 21.0 | | |
| Total Split (s) | 18.0 | | | 72.0 | | |
| Total Split (%) | 20.0% | | | 80.0% | | |
| Maximum Green (s) | 11.0 | | | 65.0 | | |
| Yellow Time (s) | 5.0 | | | 5.0 | | |
| All-Red Time (s) | 2.0 | | | 2.0 | | |
| Total Lost Time (s) | 5.0 | | | 5.0 | | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | | 3.0 | | |
| Recall Mode | None | | | C-Min | | |
| Act Effct Green (s) | 12.9 | | | 67.1 | | |
| Actuated g/C Ratio | 0.14 | | | 0.75 | | |
| v/c Ratio | 0.79 | | | 0.88 | | |
| Control Delay | 55.5 | | | 8.0 | | |
| Queue Delay | 0.0 | | | 0.0 | | |
| Total Delay | 55.5 | | | 8.0 | | |

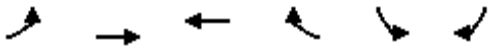


| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| LOS | E | | | A | | |
| Approach Delay | 55.5 | | | 8.0 | | |
| Approach LOS | E | | | A | | |
| Queue Length 50th (ft) | 107 | | | 150 | | |
| Queue Length 95th (ft) | m#207 | | | 125 | | |
| Internal Link Dist (ft) | 1 | | | 754 | 837 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | 253 | | | 2612 | | |
| Starvation Cap Reductn | 0 | | | 0 | | |
| Spillback Cap Reductn | 0 | | | 0 | | |
| Storage Cap Reductn | 0 | | | 0 | | |
| Reduced v/c Ratio | 0.79 | | | 0.88 | | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.88 | | | |
| Intersection Signal Delay: 11.8 | | Intersection LOS: B | |
| Intersection Capacity Utilization 75.7% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

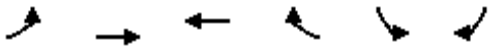
Splits and Phases: 184: NB US 321 & Pine Mountain Road U-Turn





| Lane Group | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 281 | 175 | 0 | 0 | 225 |
| Future Volume (vph) | 0 | 281 | 175 | 0 | 0 | 225 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | 0.865 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1863 | 1863 | 0 | 0 | 1596 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1863 | 1863 | 0 | 0 | 1596 |
| Link Speed (mph) | | 35 | 35 | | 35 | |
| Link Distance (ft) | | 566 | 538 | | 146 | |
| Travel Time (s) | | 11.0 | 10.5 | | 2.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 2% | 3% |
| Adj. Flow (vph) | 0 | 312 | 194 | 0 | 0 | 250 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 312 | 194 | 0 | 0 | 250 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 0 | 0 | | 0 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 9 |
| Sign Control | | Free | Free | | Stop | |

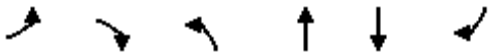
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 29.8% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | ↑ | ↑ | | | ↱ |
| Traffic Volume (veh/h) | 0 | 281 | 175 | 0 | 0 | 225 |
| Future Volume (Veh/h) | 0 | 281 | 175 | 0 | 0 | 225 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 312 | 194 | 0 | 0 | 250 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | 538 | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 194 | | | | 506 | 194 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 194 | | | | 506 | 194 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 100 | | | | 100 | 70 |
| cM capacity (veh/h) | 1379 | | | | 526 | 845 |

| Direction, Lane # | EB 1 | WB 1 | SB 1 |
|---|---|---|---|
| Volume Total | 312 | 194 | 250 |
| Volume Left | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 250 |
| cSH | 1700 | 1700 | 845 |
| Volume to Capacity | 0.18 | 0.11 | 0.30 |
| Queue Length 95th (ft) | 0 | 0 | 31 |
| Control Delay (s) | 0.0 | 0.0 | 11.0 |
| Lane LOS | | | B |
| Approach Delay (s) | 0.0 | 0.0 | 11.0 |
| Approach LOS | | | B |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 3.7 | | |
| Intersection Capacity Utilization | 29.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 250 | 1990 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 250 | 1990 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 300 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1752 | 3505 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1752 | 3505 | 0 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 63 | | | 816 | 983 | |
| Travel Time (s) | 0.8 | | | 10.1 | 12.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 3% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 278 | 2211 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 278 | 2211 | 0 | 0 |
| Enter Blocked Intersection | No | No | Yes | Yes | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 0 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | 25 | | | 9 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 109.9% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 228 | 1512 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 228 | 1512 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 200 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1752 | 3505 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1752 | 3505 |
| Link Speed (mph) | 55 | | 55 | | | 55 |
| Link Distance (ft) | 103 | | 106 | | | 502 |
| Travel Time (s) | 1.3 | | 1.3 | | | 6.2 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 3% | 3% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 253 | 1680 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 253 | 1680 |
| Enter Blocked Intersection | No | No | No | No | Yes | Yes |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 0 | | 12 | | | 12 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 16 | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | | 9 | 25 | |
| Sign Control | Stop | | Stop | | | Free |

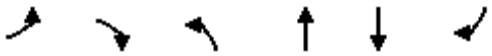
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 51.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 179 | 1614 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 179 | 1614 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 200 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 100 | | | | 100 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1752 | 3505 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1752 | 3505 |
| Link Speed (mph) | 55 | | 55 | | | 55 |
| Link Distance (ft) | 70 | | 894 | | | 984 |
| Travel Time (s) | 0.9 | | 11.1 | | | 12.2 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 3% | 3% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 199 | 1793 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 199 | 1793 |
| Enter Blocked Intersection | No | No | No | No | Yes | Yes |
| Lane Alignment | Left | Right | Left | Right | Left | Left |
| Median Width(ft) | 0 | | 12 | | | 12 |
| Link Offset(ft) | 0 | | 0 | | | 0 |
| Crosswalk Width(ft) | 16 | | 16 | | | 16 |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | | 9 | 15 | |
| Sign Control | Stop | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 75.7% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 175 | 2083 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 175 | 2083 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 150 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 100 | | 100 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1752 | 5036 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1752 | 5036 | 0 | 0 |
| Link Speed (mph) | 25 | | | 55 | 55 | |
| Link Distance (ft) | 137 | | | 917 | 138 | |
| Travel Time (s) | 3.7 | | | 11.4 | 1.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 3% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 194 | 2314 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 194 | 2314 | 0 | 0 |
| Enter Blocked Intersection | No | No | Yes | Yes | No | No |
| Lane Alignment | Left | Right | Left | Left | Left | Right |
| Median Width(ft) | 0 | | | 12 | 12 | |
| Link Offset(ft) | 0 | | | 0 | 0 | |
| Crosswalk Width(ft) | 16 | | | 16 | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | 9 | 25 | | | 9 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 119.3% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | NEL | NER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 1740 | 225 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 1740 | 225 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | | | 0.850 | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 0 | 3505 | 1568 | 0 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 0 | 3505 | 1568 | 0 | 0 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 502 | 255 | | 146 | |
| Travel Time (s) | | 6.2 | 3.2 | | 1.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 3% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 1933 | 250 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 1933 | 250 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 12 | 12 | | 0 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 25 | 15 | 9 |
| Sign Control | | Stop | Free | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 51.4% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 2079 | 0 | 0 | 0 | 1614 |
| Future Volume (vph) | 0 | 2079 | 0 | 0 | 0 | 1614 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 0.88 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 3505 | 0 | 0 | 0 | 2760 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 3505 | 0 | 0 | 0 | 2760 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 2395 | 834 | | 894 | |
| Travel Time (s) | | 29.7 | 10.3 | | 11.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 3% | 2% | 2% | 2% | 3% |
| Adj. Flow (vph) | 0 | 2310 | 0 | 0 | 0 | 1793 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 2310 | 0 | 0 | 0 | 1793 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 0 | 0 | | 0 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 9 | 15 | 60 |
| Sign Control | | Free | Stop | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 60.8% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | NEL | NER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 2103 | 0 | 1685 | 0 | 0 |
| Future Volume (vph) | 0 | 2103 | 0 | 1685 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 0.88 | 1.00 | 1.00 |
| Frt | | | | 0.850 | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 3505 | 0 | 2760 | 0 | 0 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 3505 | 0 | 2760 | 0 | 0 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 760 | 2395 | | 709 | |
| Travel Time (s) | | 9.4 | 29.7 | | 8.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 3% | 2% | 3% | 2% | 2% |
| Adj. Flow (vph) | 0 | 2337 | 0 | 1872 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 2337 | 0 | 1872 | 0 | 0 |
| Enter Blocked Intersection | No | No | No | No | No | No |
| Lane Alignment | Left | Left | Left | Right | Left | Right |
| Median Width(ft) | | 0 | 0 | | 0 | |
| Link Offset(ft) | | 0 | 0 | | 0 | |
| Crosswalk Width(ft) | | 16 | 16 | | 16 | |
| Two way Left Turn Lane | | | | | | |
| Headway Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Turning Speed (mph) | 15 | | | 55 | 15 | 9 |
| Sign Control | | Free | Free | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 62.3% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

| Movement | NBL | NBT | SBT | SBR | NEL | NER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 2103 | 0 | 1685 | 0 | 0 |
| Future Volume (Veh/h) | 0 | 2103 | 0 | 1685 | 0 | 0 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 2337 | 0 | 1872 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1872 | | | | 1168 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1872 | | | | 1168 | 0 |
| tC, single (s) | 4.1 | | | | 6.8 | 6.9 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 100 | | | | 100 | 100 |
| cM capacity (veh/h) | 318 | | | | 186 | 1084 |

| Direction, Lane # | NB 1 | NB 2 | SB 1 | SB 2 |
|---|---|---|---|---|
| Volume Total | 1168 | 1168 | 936 | 936 |
| Volume Left | 0 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 936 | 936 |
| cSH | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.69 | 0.69 | 0.55 | 0.55 |
| Queue Length 95th (ft) | 0 | 0 | 0 | 0 |
| Control Delay (s) | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | | | | |
| Approach Delay (s) | 0.0 | | 0.0 | |
| Approach LOS | | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 62.3% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

## Summary of All Intervals

| Start Time | 4:50 |
|---|---|
| End Time | 6:00 |
| Total Time (min) | 70 |
| Time Recorded (min) | 60 |
| # of Intervals | 2 |
| # of Recorded Intervals | 1 |
| Vehs Entered | 3601 |
| Vehs Exited | 3631 |
| Starting Vehs | 271 |
| Ending Vehs | 241 |
| Travel Distance (mi) | 7843 |
| Travel Time (hr) | 280.8 |
| Total Delay (hr) | 121.0 |
| Total Stops | 7115 |
| Fuel Used (gal) | 304.6 |

## Interval #0 Information Seeding

| Start Time | 4:50 |
|---|---|
| End Time | 5:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| Start Time | 5:00 |
|---|---|
| End Time | 6:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Vehs Entered | 3601 |
|---|---|
| Vehs Exited | 3631 |
| Starting Vehs | 271 |
| Ending Vehs | 241 |
| Travel Distance (mi) | 7843 |
| Travel Time (hr) | 280.8 |
| Total Delay (hr) | 121.0 |
| Total Stops | 7115 |
| Fuel Used (gal) | 304.6 |

## Intersection: 161: NB US 321 & Lower Cedar Valley Road & Lower Cedar Valley Road Left-Over

| Movement | WB | WB | NB | NB | NB | SE |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | TR | <L |
| Maximum Queue (ft) | 131 | 41 | 166 | 165 | 141 | 154 |
| Average Queue (ft) | 59 | 18 | 97 | 124 | 122 | 104 |
| 95th Queue (ft) | 112 | 40 | 153 | 144 | 135 | 137 |
| Link Distance (ft) | 697 | | 42 | 42 | 42 | 46 |
| Upstream Blk Time (%) | | | 18 | 33 | 36 | 46 |
| Queuing Penalty (veh) | | | 126 | 236 | 256 | 80 |
| Storage Bay Dist (ft) | | 150 | | | | |
| Storage Blk Time (%) | 0 | | | | | |
| Queuing Penalty (veh) | 0 | | | | | |

## Intersection: 162: SB US 321 & Lower Cedar Valley Road U-Turn

| Movement | WB | SB | SB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 64 | 137 | 149 |
| Average Queue (ft) | 33 | 56 | 59 |
| 95th Queue (ft) | 65 | 119 | 124 |
| Link Distance (ft) | 4 | 669 | 669 |
| Upstream Blk Time (%) | 36 | | |
| Queuing Penalty (veh) | 28 | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 163: SB US 321 & Lower Cedar Valley Road Left-Over & Lower Cedar Valley Road

| Movement | EB | EB | SB | SB | SB | NW |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | R | L |
| Maximum Queue (ft) | 285 | 266 | 157 | 150 | 131 | 136 |
| Average Queue (ft) | 188 | 136 | 112 | 120 | 44 | 58 |
| 95th Queue (ft) | 254 | 238 | 166 | 153 | 92 | 110 |
| Link Distance (ft) | 601 | | 58 | 58 | 58 | 43 |
| Upstream Blk Time (%) | | | 21 | 26 | 7 | 24 |
| Queuing Penalty (veh) | | | 115 | 139 | 38 | 26 |
| Storage Bay Dist (ft) | | 250 | | | | |
| Storage Blk Time (%) | 1 | 0 | | | | |
| Queuing Penalty (veh) | 1 | 0 | | | | |

## Intersection: 164: NB US 321 & Lower Cedar Valley Road U-Turn

| Movement | EB | NB | NB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 86 | 356 | 377 |
| Average Queue (ft) | 65 | 200 | 197 |
| 95th Queue (ft) | 78 | 327 | 328 |
| Link Distance (ft) | 6 | 1083 | 1083 |
| Upstream Blk Time (%) | 64 | | |
| Queuing Penalty (veh) | 204 | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 165: NB US 321 & Lower Cedar Valley Road U-Turn

| Movement | NB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 64 |
| Average Queue (ft) | 6 |
| 95th Queue (ft) | 31 |
| Link Distance (ft) | 248 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 166: Lower Cedar Valley Road Left-Over

| Movement | SB | SB | SB | SB |
|---|---|---|---|---|
| Directions Served | L | T | T | T |
| Maximum Queue (ft) | 80 | 206 | 218 | 24 |
| Average Queue (ft) | 17 | 65 | 72 | 1 |
| 95th Queue (ft) | 57 | 182 | 182 | 8 |
| Link Distance (ft) | | 550 | 550 | 550 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | 150 | | | |
| Storage Blk Time (%) | | 2 | | |
| Queuing Penalty (veh) | | 4 | | |

## Intersection: 167: SB US 321 & Lower Cedar Valley Road U-Turn

| Movement | SB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 241 |
| Average Queue (ft) | 114 |
| 95th Queue (ft) | 197 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 300 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 168: NB US 321 & Lower Cedar Valley Road Left-Over

| Movement | NB | NB | NB | NB |
|---|---|---|---|---|
| Directions Served | L | T | T | T |
| Maximum Queue (ft) | 56 | 274 | 324 | 309 |
| Average Queue (ft) | 2 | 110 | 161 | 191 |
| 95th Queue (ft) | 18 | 224 | 279 | 283 |
| Link Distance (ft) | | 978 | 978 | 978 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | 200 | | | |
| Storage Blk Time (%) | | 0 | | |
| Queuing Penalty (veh) | | 0 | | |

## Intersection: 171: NB US 321 & Quarry Estates Road

| Movement | WB | NB | NB |
|---|---|---|---|
| Directions Served | R | T | TR |
| Maximum Queue (ft) | 63 | 556 | 20 |
| Average Queue (ft) | 17 | 19 | 1 |
| 95th Queue (ft) | 46 | 183 | 6 |
| Link Distance (ft) | 403 | 675 | 675 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 172: Quarry Estates Road & SB US 321

| Movement | EB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 106 |
| Average Queue (ft) | 24 |
| 95th Queue (ft) | 59 |
| Link Distance (ft) | 651 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 181: NB US 321 & Pine Mountain Road & Pine Mountain Road Left-Over

| Movement | WB | WB | NB | NB | NB | SE |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | R | L |
| Maximum Queue (ft) | 304 | 254 | 155 | 154 | 56 | 132 |
| Average Queue (ft) | 174 | 139 | 87 | 110 | 13 | 92 |
| 95th Queue (ft) | 259 | 239 | 143 | 157 | 51 | 117 |
| Link Distance (ft) | 1036 | | 79 | 79 | 79 | 34 |
| Upstream Blk Time (%) | | | 9 | 12 | | 64 |
| Queuing Penalty (veh) | | | 60 | 80 | | 146 |
| Storage Bay Dist (ft) | | 400 | | | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 182: SB US 321 & Pine Mountain Road U-Turn

| Movement | WB | SB | SB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 78 | 333 | 346 |
| Average Queue (ft) | 60 | 191 | 145 |
| 95th Queue (ft) | 70 | 297 | 255 |
| Link Distance (ft) | 4 | 993 | 993 |
| Upstream Blk Time (%) | 60 | | |
| Queuing Penalty (veh) | 151 | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 183: SB US 321 & Pine Mountain Road Left-Over & Pine Mountain Road

| Movement | EB | EB | SB | SB | NW |
|---|---|---|---|---|---|
| Directions Served | > | > | T | T | L |
| Maximum Queue (ft) | 194 | 108 | 108 | 103 | 138 |
| Average Queue (ft) | 92 | 53 | 78 | 79 | 75 |
| 95th Queue (ft) | 145 | 108 | 112 | 104 | 135 |
| Link Distance (ft) | 451 | | 23 | 23 | 48 |
| Upstream Blk Time (%) | | | 25 | 26 | 26 |
| Queuing Penalty (veh) | | | 187 | 195 | 46 |
| Storage Bay Dist (ft) | | 200 | | | |
| Storage Blk Time (%) | 0 | | | | |
| Queuing Penalty (veh) | 0 | | | | |

## Intersection: 184: NB US 321 & Pine Mountain Road U-Turn

| Movement | EB | NB | NB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 99 | 184 | 186 |
| Average Queue (ft) | 75 | 112 | 123 |
| 95th Queue (ft) | 93 | 165 | 182 |
| Link Distance (ft) | 15 | 784 | 784 |
| Upstream Blk Time (%) | 71 | | |
| Queuing Penalty (veh) | 127 | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 185: Pine Mountain Road & Ramp to Pine Mountain Road

| Movement | SB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 136 |
| Average Queue (ft) | 40 |
| 95th Queue (ft) | 102 |
| Link Distance (ft) | 78 |
| Upstream Blk Time (%) | 3 |
| Queuing Penalty (veh) | 6 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 186: NB US 321 & Pine Mountain Road U-Turn

| Movement | NB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 195 |
| Average Queue (ft) | 93 |
| 95th Queue (ft) | 166 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 300 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 187: SB US 321 & Pine Mountain Road Left-Over

| Movement | SB | SB | SB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 125 | 174 | 168 |
| Average Queue (ft) | 46 | 64 | 70 |
| 95th Queue (ft) | 118 | 150 | 162 |
| Link Distance (ft) | | 447 | 447 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | 200 | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 188: SB US 321 & Pine Mountain Road U-Turn

| Movement | SB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 187 |
| Average Queue (ft) | 81 |
| 95th Queue (ft) | 182 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 200 |
| Storage Blk Time (%) | 0 |
| Queuing Penalty (veh) | 0 |

## Intersection: 189: NB US 321 & Pine Mountain Road Left-Over

| Movement | NB | NB | NB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 56 | 46 | 27 |
| Average Queue (ft) | 10 | 2 | 3 |
| 95th Queue (ft) | 42 | 15 | 17 |
| Link Distance (ft) | | 862 | 862 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | 150 | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 950: Ramp to Pine Mountain Road & SB US 321

| Movement | SB |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 50 |
| Average Queue (ft) | 2 |
| 95th Queue (ft) | 16 |
| Link Distance (ft) | 224 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 988: US 321/NB US 321 & SB US 321

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 989: SB US 321 & NB US 321/US 321

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Network Summary

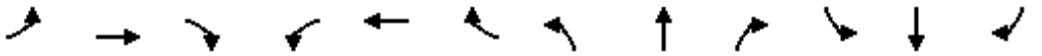
Network wide Queuing Penalty: 2251

APPENDIX O

# 2040 Build Alternative Mount Herman Road & Caldwell Community College and Technical Institute Synchro & SimTraffic Reports

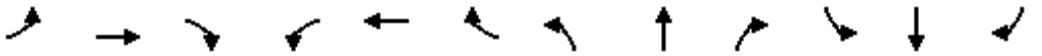
APPENDIX P

# 2040 Build Alternative MDI Simulation Analysis Synchro & SimTraffic Reports



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 136 | 0 | 0 | 243 | 0 | 1521 | 126 | 0 | 1917 | 194 |
| Future Volume (vph) | 0 | 0 | 136 | 0 | 0 | 243 | 0 | 1521 | 126 | 0 | 1917 | 194 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 200 | 0 | | 200 |
| Storage Lanes | 0 | | 1 | 0 | | 1 | 0 | | 1 | 0 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 50 | | | 50 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.865 | | | 0.865 | | | 0.850 | | | 0.850 |
| Flt Protected | | | | | | | | | | | | |
| Satd. Flow (prot) | 0 | 0 | 1565 | 0 | 0 | 1565 | 0 | 3438 | 1538 | 0 | 3438 | 1538 |
| Flt Permitted | | | | | | | | | | | | |
| Satd. Flow (perm) | 0 | 0 | 1565 | 0 | 0 | 1565 | 0 | 3438 | 1538 | 0 | 3438 | 1538 |
| Link Speed (mph) | | 35 | | | 35 | | | 45 | | | 45 | |
| Link Distance (ft) | | 468 | | | 369 | | | 2914 | | | 1118 | |
| Travel Time (s) | | 9.1 | | | 7.2 | | | 44.2 | | | 16.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 0 | 0 | 151 | 0 | 0 | 270 | 0 | 1690 | 140 | 0 | 2130 | 216 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 151 | 0 | 0 | 270 | 0 | 1690 | 140 | 0 | 2130 | 216 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 68.1% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 136 | 0 | 0 | 243 | 0 | 1521 | 126 | 0 | 1917 | 194 |
| Future Volume (Veh/h) | 0 | 0 | 136 | 0 | 0 | 243 | 0 | 1521 | 126 | 0 | 1917 | 194 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 151 | 0 | 0 | 270 | 0 | 1690 | 140 | 0 | 2130 | 216 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 2975 | 3820 | 1065 | 2755 | 3820 | 845 | 2130 | | | 1690 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 2975 | 3820 | 1065 | 2755 | 3820 | 845 | 2130 | | | 1690 | | |
| tC, single (s) | 7.6 | 6.6 | 7.0 | 7.6 | 6.6 | 7.0 | 4.2 | | | 4.2 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 100 | 100 | 29 | 100 | 100 | 10 | 100 | | | 100 | | |
| cM capacity (veh/h) | 1 | 4 | 214 | 3 | 4 | 300 | 241 | | | 361 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 151 | 270 | 845 | 845 | 140 | 1065 | 1065 | 216 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 151 | 270 | 0 | 0 | 140 | 0 | 0 | 216 |
| cSH | 214 | 300 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.71 | 0.90 | 0.50 | 0.50 | 0.08 | 0.63 | 0.63 | 0.13 |
| Queue Length 95th (ft) | 114 | 209 | 0 | 0 | 0 | 0 | 0 | 0 |
| Control Delay (s) | 54.5 | 67.7 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | F | F | | | | | | |
| Approach Delay (s) | 54.5 | 67.7 | 0.0 | | | 0.0 | | |
| Approach LOS | F | F | | | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 5.8 | | | |
| Intersection Capacity Utilization | 68.1% | ICU Level of Service | C | |
| Analysis Period (min) | 15 | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 136 | 0 | 0 | 243 | 0 | 1521 | 126 | 0 | 1917 | 194 |
| Future Vol, veh/h | 0 | 0 | 136 | 0 | 0 | 243 | 0 | 1521 | 126 | 0 | 1917 | 194 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | Free | - | - | Free | - | - | Free | - | - | Free |
| Storage Length | - | - | 0 | - | - | 0 | - | - | 200 | - | - | 200 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Mvmt Flow | 0 | 0 | 151 | 0 | 0 | 270 | 0 | 1690 | 140 | 0 | 2130 | 216 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | - | - | - | - | - | 0 | - | - | - | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | - | - | - | - | - | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | - | 0 |
| Stage 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | - | 0 |
| Stage 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | - | 0 |
| Platoon blocked, % | | | | | | | | - | | | - | |
| Mov Cap-1 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

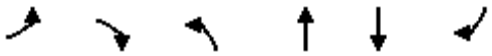
| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 0 | 0 |
| HCM LOS | A | A | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | WBLn1 | SBT |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | - |
| HCM Lane V/C Ratio | - | - | - | - |
| HCM Control Delay (s) | - | 0 | 0 | - |
| HCM Lane LOS | - | A | A | - |
| HCM 95th %tile Q(veh) | - | - | - | - |

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 1764 | 0 | 0 | 0 | 2111 |
| Future Volume (vph) | 0 | 1764 | 0 | 0 | 0 | 2111 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 0.88 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 4940 | 0 | 0 | 0 | 2707 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 4940 | 0 | 0 | 0 | 2707 |
| Link Speed (mph) | | 45 | 45 | | 45 | |
| Link Distance (ft) | | 1118 | 1025 | | 856 | |
| Travel Time (s) | | 16.9 | 15.5 | | 13.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 0 | 1960 | 0 | 0 | 0 | 2346 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 1960 | 0 | 0 | 0 | 2346 |
| Sign Control | | Free | Stop | | Free | |

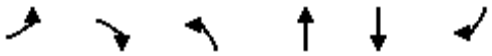
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 77.2% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 68 | 0 | 0 | 2043 | 51 |
| Future Volume (vph) | 0 | 68 | 0 | 0 | 2043 | 51 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | 0.865 | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1596 | 0 | 0 | 3438 | 1538 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1596 | 0 | 0 | 3438 | 1538 |
| Link Speed (mph) | 25 | | | 45 | 45 | |
| Link Distance (ft) | 869 | | | 856 | 251 | |
| Travel Time (s) | 23.7 | | | 13.0 | 3.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 0% | 3% | 2% | 2% | 5% | 5% |
| Adj. Flow (vph) | 0 | 76 | 0 | 0 | 2270 | 57 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 76 | 0 | 0 | 2270 | 57 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 67.4% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 68 | 0 | 0 | 2043 | 51 |
| Future Volume (Veh/h) | 0 | 68 | 0 | 0 | 2043 | 51 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 76 | 0 | 0 | 2270 | 57 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 2270 | 1135 | 2327 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 2270 | 1135 | 2327 | | | |
| tC, single (s) | 6.8 | 7.0 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 61 | 100 | | | |
| cM capacity (veh/h) | 35 | 195 | 210 | | | |

| Direction, Lane # | EB 1 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|
| Volume Total | 76 | 1135 | 1135 | 57 |
| Volume Left | 0 | 0 | 0 | 0 |
| Volume Right | 76 | 0 | 0 | 57 |
| cSH | 195 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.39 | 0.67 | 0.67 | 0.03 |
| Queue Length 95th (ft) | 43 | 0 | 0 | 0 |
| Control Delay (s) | 34.9 | 0.0 | 0.0 | 0.0 |
| Lane LOS | D | | | |
| Approach Delay (s) | 34.9 | 0.0 | | |
| Approach LOS | D | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 1.1 | | |
| Intersection Capacity Utilization | 67.4% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 1.1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 68 | 0 | 0 | 2043 | 51 |
| Future Vol, veh/h | 0 | 68 | 0 | 0 | 2043 | 51 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | - | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 0 | 3 | 2 | 2 | 5 | 5 |
| Mvmt Flow | 0 | 76 | 0 | 0 | 2270 | 57 |

| Major/Minor | Minor2 | | Major2 | |
|---|---|---|---|---|
| Conflicting Flow All | - | 1135 | - | 0 |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |
| Critical Hdwy | - | 6.96 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - |
| Follow-up Hdwy | - | 3.33 | - | - |
| Pot Cap-1 Maneuver | 0 | 195 | - | - |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 0 | - | - | - |
| Platoon blocked, % | | | - | - |
| Mov Cap-1 Maneuver | - | 195 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |

| Approach | EB | SB |
|---|---|---|
| HCM Control Delay, s | 34.7 | 0 |
| HCM LOS | D | |

| Minor Lane/Major Mvmt | EBLn1 | SBT | SBR |
|---|---|---|---|
| Capacity (veh/h) | 195 | - | - |
| HCM Lane V/C Ratio | 0.387 | - | - |
| HCM Control Delay (s) | 34.7 | - | - |
| HCM Lane LOS | D | - | - |
| HCM 95th %tile Q(veh) | 1.7 | - | - |

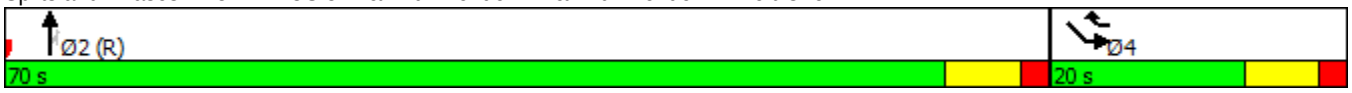
| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 232 | 0 | 1575 | 229 | 0 | 0 | 0 | 104 | 0 |
| Future Volume (vph) | 0 | 0 | 232 | 0 | 1575 | 229 | 0 | 0 | 0 | 104 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | | 0 | 400 | | 0 | 0 | 0 |
| Storage Lanes | 0 | 2 | | 0 | | 1 | 0 | | 0 | 1 | 0 |
| Taper Length (ft) | 50 | | | 50 | | | 50 | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2760 | 0 | 3438 | 1538 | 0 | 0 | 0 | 1719 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2760 | 0 | 3438 | 1538 | 0 | 0 | 0 | 1719 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 45 | | | 45 | | 25 | |
| Link Distance (ft) | 275 | | | | 152 | | | 917 | | 184 | |
| Travel Time (s) | 5.4 | | | | 2.3 | | | 13.9 | | 5.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 0 | 0 | 258 | 0 | 1750 | 254 | 0 | 0 | 0 | 116 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 258 | 0 | 1750 | 254 | 0 | 0 | 0 | 116 | 0 |
| Turn Type | | | Prot | | NA | Perm | | | | Prot | |
| Protected Phases | | | 4 | | 2 | | | | | 4 | |
| Permitted Phases | | | | | | 2 | | | | | |
| Detector Phase | | | 4 | | 2 | 2 | | | | 4 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 12.0 | 12.0 | | | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 19.0 | 19.0 | | | | 14.0 | |
| Total Split (s) | | | 20.0 | | 70.0 | 70.0 | | | | 20.0 | |
| Total Split (%) | | | 22.2% | | 77.8% | 77.8% | | | | 22.2% | |
| Maximum Green (s) | | | 13.0 | | 63.0 | 63.0 | | | | 13.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | 5.0 | | | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | 2.0 | | | | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | -2.0 | -2.0 | | | | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | 5.0 | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | 3.0 | | | | 3.0 | |
| Recall Mode | | | None | | C-Min | C-Min | | | | None | |
| Act Effct Green (s) | | | 14.2 | | 65.8 | 65.8 | | | | 14.2 | |
| Actuated g/C Ratio | | | 0.16 | | 0.73 | 0.73 | | | | 0.16 | |
| v/c Ratio | | | 0.59 | | 0.70 | 0.23 | | | | 0.43 | |
| Control Delay | | | 41.1 | | 4.8 | 2.4 | | | | 41.6 | |
| Queue Delay | | | 0.0 | | 0.0 | 0.0 | | | | 0.0 | |
| Total Delay | | | 41.1 | | 4.8 | 2.4 | | | | 41.6 | |
| LOS | | | D | | A | A | | | | D | |
| Approach Delay | 41.1 | | | | 4.5 | | | | | 41.6 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | D | | | | A | | | | | D | |
| Queue Length 50th (ft) | | | 76 | | 67 | 18 | | | | 60 | |
| Queue Length 95th (ft) | | | 121 | | 233 | m23 | | | | m63 | |
| Internal Link Dist (ft) | 195 | | | | 72 | | | 837 | | 104 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 464 | | 2518 | 1126 | | | | 288 | |
| Starvation Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Reduced v/c Ratio | | | 0.56 | | 0.69 | 0.23 | | | | 0.40 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 20 (22%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 50 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.70 | | | |
| Intersection Signal Delay: 10.3 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 31: NB US 321 & 2nd Avenue NW & 2nd Avenue NW Left-Over

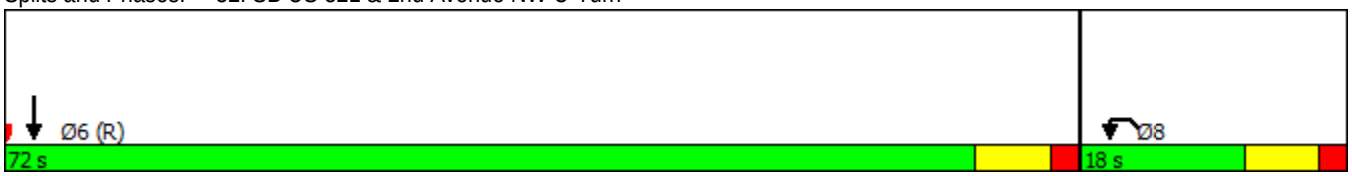


| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 2087 | 173 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 2087 | 173 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 3438 | 1719 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 3438 | 1719 | 0 |
| Right Turn on Red | | No | | | No | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 45 | | | 45 | 25 | |
| Link Distance (ft) | 833 | | | 712 | 94 | |
| Travel Time (s) | 12.6 | | | 10.8 | 2.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 0 | 0 | 0 | 2319 | 192 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 2319 | 192 | 0 |
| Turn Type | | | | NA | Prot | |
| Protected Phases | | | | 6 | 8 | |
| Permitted Phases | | | | | | |
| Detector Phase | | | | 6 | 8 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | | | 12.0 | 7.0 | |
| Minimum Split (s) | | | | 19.0 | 14.0 | |
| Total Split (s) | | | | 72.0 | 18.0 | |
| Total Split (%) | | | | 80.0% | 20.0% | |
| Maximum Green (s) | | | | 65.0 | 11.0 | |
| Yellow Time (s) | | | | 5.0 | 5.0 | |
| All-Red Time (s) | | | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | | -2.0 | -2.0 | |
| Total Lost Time (s) | | | | 5.0 | 5.0 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | |
| Recall Mode | | | | C-Min | None | |
| Act Effct Green (s) | | | | 67.1 | 12.9 | |
| Actuated g/C Ratio | | | | 0.75 | 0.14 | |
| v/c Ratio | | | | 0.90 | 0.78 | |
| Control Delay | | | | 6.8 | 53.0 | |
| Queue Delay | | | | 0.0 | 0.0 | |
| Total Delay | | | | 6.8 | 53.0 | |
| LOS | | | | A | D | |
| Approach Delay | | | | 6.8 | 53.0 | |
| Approach LOS | | | | A | D | |
| Queue Length 50th (ft) | | | | 66 | 102 | |
| Queue Length 95th (ft) | | | | 89 | m#184 | |

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 753 | | | 632 | 14 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | | | 2564 | 248 | |
| Starvation Cap Reductn | | | | 0 | 0 | |
| Spillback Cap Reductn | | | | 0 | 0 | |
| Storage Cap Reductn | | | | 0 | 0 | |
| Reduced v/c Ratio | | | | 0.90 | 0.77 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 66 (73%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 75 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.90 | | | |
| Intersection Signal Delay: 10.3 | | Intersection LOS: B | |
| Intersection Capacity Utilization 110.4% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 32: SB US 321 & 2nd Avenue NW U-Turn



| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 366 | 0 | 0 | 0 | 0 | 1897 | 259 | 256 | 0 |
| Future Volume (vph) | 0 | 0 | 366 | 0 | 0 | 0 | 0 | 1897 | 259 | 256 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | | | | 0.850 | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2760 | 0 | 0 | 0 | 0 | 3438 | 1538 | 1719 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2760 | 0 | 0 | 0 | 0 | 3438 | 1538 | 1719 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 45 | | | 45 | | 25 | |
| Link Distance (ft) | 616 | | | | 840 | | | 154 | | 188 | |
| Travel Time (s) | 12.0 | | | | 12.7 | | | 2.3 | | 5.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 0 | 0 | 407 | 0 | 0 | 0 | 0 | 2108 | 288 | 284 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 407 | 0 | 0 | 0 | 0 | 2108 | 288 | 284 | 0 |
| Turn Type | | | Perm | | | | | NA | Perm | Prot | |
| Protected Phases | | | | | | | | 6 | | 8 | |
| Permitted Phases | | | 4 | | | | | | 6 | | |
| Detector Phase | | | 4 | | | | | 6 | 6 | 8 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | | | | 12.0 | 12.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 19.0 | 19.0 | 14.0 | |
| Total Split (s) | | | 24.0 | | | | | 66.0 | 66.0 | 24.0 | |
| Total Split (%) | | | 26.7% | | | | | 73.3% | 73.3% | 26.7% | |
| Maximum Green (s) | | | 17.0 | | | | | 59.0 | 59.0 | 17.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | | | | -2.0 | -2.0 | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | |
| Recall Mode | | | None | | | | | C-Min | C-Min | None | |
| Act Effct Green (s) | | | 18.3 | | | | | 61.7 | 61.7 | 18.3 | |
| Actuated g/C Ratio | | | 0.20 | | | | | 0.69 | 0.69 | 0.20 | |
| v/c Ratio | | | 0.72 | | | | | 0.90 | 0.27 | 0.81 | |
| Control Delay | | | 41.6 | | | | | 9.0 | 2.9 | 39.6 | |
| Queue Delay | | | 0.0 | | | | | 0.0 | 0.0 | 0.0 | |
| Total Delay | | | 41.6 | | | | | 9.0 | 2.9 | 39.6 | |
| LOS | | | D | | | | | A | A | D | |
| Approach Delay | 41.6 | | | | | | | 8.3 | | 39.6 | |
| Approach LOS | D | | | | | | | A | | D | |
| Queue Length 50th (ft) | | | 122 | | | | | 179 | 21 | 157 | |
| Queue Length 95th (ft) | | | 178 | | | | | 370 | m29 | m181 | |

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 536 | | | | 760 | | | 74 | | 108 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 582 | | | | | 2355 | 1053 | 362 | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Reduced v/c Ratio | | | 0.70 | | | | | 0.90 | 0.27 | 0.78 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 82 (91%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 70 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.90 | | | |
| Intersection Signal Delay: 15.5 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 33: SB US 321 & 2nd Avenue NW Left -Over & 2nd Avenue NW

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 1817 | 0 | 0 | 243 | 0 |
| Future Volume (vph) | 0 | 1817 | 0 | 0 | 243 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 3438 | 0 | 0 | 1719 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 3438 | 0 | 0 | 1719 | 0 |
| Right Turn on Red | | | | No | No | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | 45 | 45 | | 25 | |
| Link Distance (ft) | | 1025 | 741 | | 87 | |
| Travel Time (s) | | 15.5 | 11.2 | | 2.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 5% | 5% | 2% |
| Adj. Flow (vph) | 0 | 2019 | 0 | 0 | 270 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 2019 | 0 | 0 | 270 | 0 |
| Turn Type | | NA | | | Prot | |
| Protected Phases | | 2 | | | 4 | |
| Permitted Phases | | | | | | |
| Detector Phase | | 2 | | | 4 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 12.0 | | | 7.0 | |
| Minimum Split (s) | | 19.0 | | | 14.0 | |
| Total Split (s) | | 66.0 | | | 24.0 | |
| Total Split (%) | | 73.3% | | | 26.7% | |
| Maximum Green (s) | | 59.0 | | | 17.0 | |
| Yellow Time (s) | | 5.0 | | | 5.0 | |
| All-Red Time (s) | | 2.0 | | | 2.0 | |
| Lost Time Adjust (s) | | -2.0 | | | -2.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | |
| Recall Mode | | C-Min | | | None | |
| Act Effct Green (s) | | 61.8 | | | 18.2 | |
| Actuated g/C Ratio | | 0.69 | | | 0.20 | |
| v/c Ratio | | 0.86 | | | 0.78 | |
| Control Delay | | 15.8 | | | 43.3 | |
| Queue Delay | | 0.0 | | | 0.0 | |
| Total Delay | | 15.8 | | | 43.3 | |
| LOS | | B | | | D | |
| Approach Delay | | 15.8 | | | 43.3 | |
| Approach LOS | | B | | | D | |
| Queue Length 50th (ft) | | 412 | | | 144 | |
| Queue Length 95th (ft) | | 539 | | | m181 | |

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | | 945 | 661 | | 7 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 2361 | | | 362 | |
| Starvation Cap Reductn | | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.86 | | | 0.75 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.86 | | | |
| Intersection Signal Delay: 19.1 | | Intersection LOS: B | |
| Intersection Capacity Utilization 72.0% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 34: NB US 321 & 2nd Avenue NW U-Turn

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 173 | 1634 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 173 | 1634 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 400 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 0 | 0 |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1719 | 3438 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1719 | 3438 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 45 | 45 | | 55 | |
| Link Distance (ft) | | 917 | 715 | | 94 | |
| Travel Time (s) | | 13.9 | 10.8 | | 1.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 192 | 1816 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 192 | 1816 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 110.4% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 104 | 2156 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 104 | 2156 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 300 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 50 | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1719 | 4940 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1719 | 4940 | 0 | 0 |
| Link Speed (mph) | 45 | | | 45 | 55 | |
| Link Distance (ft) | 154 | | | 833 | 184 | |
| Travel Time (s) | 2.3 | | | 12.6 | 2.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 5% | 5% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 116 | 2396 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 116 | 2396 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 75.6% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 243 | 2020 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 243 | 2020 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 300 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 50 | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Link Speed (mph) | 45 | | | 45 | 55 | |
| Link Distance (ft) | 251 | | | 840 | 87 | |
| Travel Time (s) | 3.8 | | | 12.7 | 1.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 5% | 5% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 270 | 2244 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 270 | 2244 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 72.0% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 256 | 1804 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 256 | 1804 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 550 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 0 | 0 |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1719 | 4940 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1719 | 4940 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 45 | 45 | | 55 | |
| Link Distance (ft) | | 741 | 152 | | 188 | |
| Travel Time (s) | | 11.2 | 2.3 | | 2.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 284 | 2004 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 284 | 2004 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 110.2% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

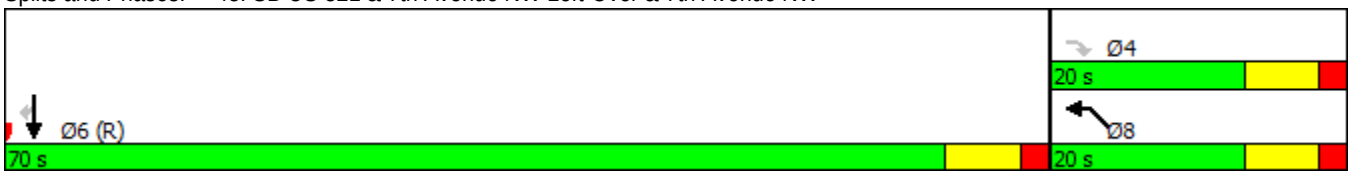
Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 145 | 0 | 0 | 0 | 0 | 1934 | 158 | 163 | 0 |
| Future Volume (vph) | 0 | 0 | 145 | 0 | 0 | 0 | 0 | 1934 | 158 | 163 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.865 | | | | | | 0.850 | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 1596 | 0 | 0 | 0 | 0 | 3471 | 1553 | 1719 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 1596 | 0 | 0 | 0 | 0 | 3471 | 1553 | 1719 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 45 | | | 45 | | 25 | |
| Link Distance (ft) | 410 | | | | 820 | | | 1170 | | 97 | |
| Travel Time (s) | 8.0 | | | | 12.4 | | | 17.7 | | 2.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 5% | 5% | 5% | 4% | 4% | 4% | 5% | 5% |
| Adj. Flow (vph) | 0 | 0 | 161 | 0 | 0 | 0 | 0 | 2149 | 176 | 181 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 161 | 0 | 0 | 0 | 0 | 2149 | 176 | 181 | 0 |
| Turn Type | | | Perm | | | | | NA | Perm | Prot | |
| Protected Phases | | | | | | | | 6 | | 8 | |
| Permitted Phases | | | 4 | | | | | | 6 | | |
| Detector Phase | | | 4 | | | | | 6 | 6 | 8 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | | | | 12.0 | 12.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 19.0 | 19.0 | 14.0 | |
| Total Split (s) | | | 20.0 | | | | | 70.0 | 70.0 | 20.0 | |
| Total Split (%) | | | 22.2% | | | | | 77.8% | 77.8% | 22.2% | |
| Maximum Green (s) | | | 13.0 | | | | | 63.0 | 63.0 | 13.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | | | | -2.0 | -2.0 | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | |
| Recall Mode | | | None | | | | | C-Min | C-Min | None | |
| Act Effct Green (s) | | | 14.1 | | | | | 65.9 | 65.9 | 14.1 | |
| Actuated g/C Ratio | | | 0.16 | | | | | 0.73 | 0.73 | 0.16 | |
| v/c Ratio | | | 0.64 | | | | | 0.85 | 0.15 | 0.67 | |
| Control Delay | | | 48.0 | | | | | 4.4 | 1.7 | 51.2 | |
| Queue Delay | | | 0.0 | | | | | 0.0 | 0.0 | 0.0 | |
| Total Delay | | | 48.0 | | | | | 4.4 | 1.7 | 51.2 | |
| LOS | | | D | | | | | A | A | D | |
| Approach Delay | 48.0 | | | | | | | 4.2 | | 51.2 | |
| Approach LOS | D | | | | | | | A | | D | |
| Queue Length 50th (ft) | | | 86 | | | | | 75 | 10 | 108 | |
| Queue Length 95th (ft) | | | 152 | | | | | 84 | m12 | m167 | |

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 330 | | | | 740 | | | 1090 | | 17 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 266 | | | | | 2540 | 1136 | 286 | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Reduced v/c Ratio | | | 0.61 | | | | | 0.85 | 0.15 | 0.63 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 47 (52%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.85 | | | |
| Intersection Signal Delay: 10.0 | | Intersection LOS: B | |
| Intersection Capacity Utilization 70.8% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 43: SB US 321 & 7th Avenue NW Left-Over & 7th Avenue NW



| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 1730 | 0 | 0 | 64 | 0 |
| Future Volume (vph) | 0 | 1730 | 0 | 0 | 64 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 3438 | 0 | 0 | 1719 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 3438 | 0 | 0 | 1719 | 0 |
| Right Turn on Red | | | | No | No | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | 45 | 45 | | 25 | |
| Link Distance (ft) | | 715 | 820 | | 90 | |
| Travel Time (s) | | 10.8 | 12.4 | | 2.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 0 | 1922 | 0 | 0 | 71 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 1922 | 0 | 0 | 71 | 0 |
| Turn Type | | NA | | | Prot | |
| Protected Phases | | 2 | | | 4 | |
| Permitted Phases | | | | | | |
| Detector Phase | | 2 | | | 4 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 12.0 | | | 7.0 | |
| Minimum Split (s) | | 19.0 | | | 14.0 | |
| Total Split (s) | | 76.0 | | | 14.0 | |
| Total Split (%) | | 84.4% | | | 15.6% | |
| Maximum Green (s) | | 69.0 | | | 7.0 | |
| Yellow Time (s) | | 5.0 | | | 5.0 | |
| All-Red Time (s) | | 2.0 | | | 2.0 | |
| Lost Time Adjust (s) | | -2.0 | | | -2.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | |
| Recall Mode | | C-Min | | | None | |
| Act Effct Green (s) | | 73.6 | | | 10.2 | |
| Actuated g/C Ratio | | 0.82 | | | 0.11 | |
| v/c Ratio | | 0.68 | | | 0.37 | |
| Control Delay | | 3.1 | | | 32.1 | |
| Queue Delay | | 0.0 | | | 0.0 | |
| Total Delay | | 3.1 | | | 32.1 | |
| LOS | | A | | | C | |
| Approach Delay | | 3.1 | | | 32.1 | |
| Approach LOS | | A | | | C | |
| Queue Length 50th (ft) | | 111 | | | 34 | |
| Queue Length 95th (ft) | | 94 | | | m45 | |

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | | 635 | 740 | | 10 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 2857 | | | 194 | |
| Starvation Cap Reductn | | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.67 | | | 0.37 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 39 (43%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.68 | | | |
| Intersection Signal Delay: 4.2 | | Intersection LOS: A | |
| Intersection Capacity Utilization 62.0% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 44: NB US 321 & 7th Avenue NW U-Turn

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 64 | 2015 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 64 | 2015 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 300 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 50 | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Link Speed (mph) | 45 | | | 45 | 55 | |
| Link Distance (ft) | 712 | | | 820 | 90 | |
| Travel Time (s) | 10.8 | | | 12.4 | 1.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 5% | 5% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 71 | 2239 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 71 | 2239 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 62.0% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 163 | 1631 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 163 | 1631 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 0 | 0 |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1719 | 3438 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1719 | 3438 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 45 | 45 | | 55 | |
| Link Distance (ft) | | 820 | 1115 | | 97 | |
| Travel Time (s) | | 12.4 | 16.9 | | 1.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 4% | 4% | 5% | 5% |
| Adj. Flow (vph) | 181 | 1812 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 181 | 1812 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 110.4% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

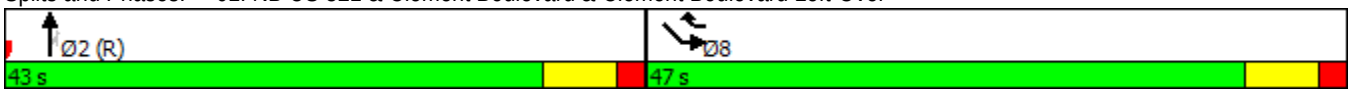
Intersection Sign configuration not allowed in HCM analysis.

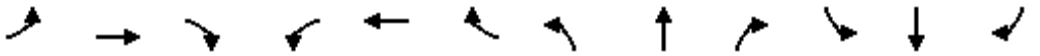
| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 1056 | 0 | 1311 | 296 | 0 | 0 | 0 | 978 | 0 |
| Future Volume (vph) | 0 | 0 | 1056 | 0 | 1311 | 296 | 0 | 0 | 0 | 978 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 0.76 | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 3610 | 0 | 4940 | 1538 | 0 | 0 | 0 | 3367 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 3610 | 0 | 4940 | 1538 | 0 | 0 | 0 | 3367 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 45 | | | 45 | | 25 | |
| Link Distance (ft) | 400 | | | | 125 | | | 983 | | 205 | |
| Travel Time (s) | 7.8 | | | | 1.9 | | | 14.9 | | 5.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 5% | 5% | 5% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 1173 | 0 | 1457 | 329 | 0 | 0 | 0 | 1087 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 1173 | 0 | 1457 | 329 | 0 | 0 | 0 | 1087 | 0 |
| Turn Type | | | Prot | | NA | Perm | | | | Prot | |
| Protected Phases | | | 8 | | 2 | | | | | 8 | |
| Permitted Phases | | | 8 | | | 2 | | | | 8 | |
| Detector Phase | | | 8 | | 2 | 2 | | | | 8 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 12.0 | 12.0 | | | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 19.0 | 19.0 | | | | 14.0 | |
| Total Split (s) | | | 47.0 | | 43.0 | 43.0 | | | | 47.0 | |
| Total Split (%) | | | 52.2% | | 47.8% | 47.8% | | | | 52.2% | |
| Maximum Green (s) | | | 40.0 | | 36.0 | 36.0 | | | | 40.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | 5.0 | | | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | 2.0 | | | | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | -2.0 | 0.0 | | | | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | 7.0 | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | 3.0 | | | | 3.0 | |
| Recall Mode | | | None | | C-Min | C-Min | | | | None | |
| Act Effct Green (s) | | | 39.8 | | 40.2 | 38.2 | | | | 39.8 | |
| Actuated g/C Ratio | | | 0.44 | | 0.45 | 0.42 | | | | 0.44 | |
| v/c Ratio | | | 0.73 | | 0.66 | 0.50 | | | | 0.73 | |
| Control Delay | | | 23.7 | | 9.4 | 10.0 | | | | 16.5 | |
| Queue Delay | | | 0.0 | | 0.0 | 0.0 | | | | 0.0 | |
| Total Delay | | | 23.7 | | 9.4 | 10.0 | | | | 16.5 | |
| LOS | | | C | | A | B | | | | B | |
| Approach Delay | 23.7 | | | | 9.5 | | | | | 16.5 | |
| Approach LOS | C | | | | A | | | | | B | |
| Queue Length 50th (ft) | | | 222 | | 132 | 58 | | | | 226 | |
| Queue Length 95th (ft) | | | 284 | | 163 | m120 | | | | m238 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 320 | | | | 45 | | | 903 | | 125 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 1684 | | 2206 | 653 | | | | 1571 | |
| Starvation Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Reduced v/c Ratio | | | 0.70 | | 0.66 | 0.50 | | | | 0.69 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 4 (4%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 50 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.73 | | | |
| Intersection Signal Delay: 15.5 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 61: NB US 321 & Clement Boulevard & Clement Boulevard Left-Over





| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 46 | 356 | 0 | 0 | 0 | 0 | 0 | 0 | 3037 | 31 |
| Future Volume (vph) | 0 | 0 | 46 | 356 | 0 | 0 | 0 | 0 | 0 | 0 | 3037 | 31 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.91 |
| Frt | | | 0.865 | | | | | | | | 0.999 | |
| Flt Protected | | | | 0.950 | | | | | | | | |
| Satd. Flow (prot) | 0 | 0 | 1596 | 3367 | 0 | 0 | 0 | 0 | 0 | 0 | 4935 | 0 |
| Flt Permitted | | | | 0.950 | | | | | | | | |
| Satd. Flow (perm) | 0 | 0 | 1596 | 3367 | 0 | 0 | 0 | 0 | 0 | 0 | 4935 | 0 |
| Right Turn on Red | | | No | No | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 25 | | | 45 | | | 45 | |
| Link Distance (ft) | | 250 | | | 97 | | | 866 | | | 889 | |
| Travel Time (s) | | 4.9 | | | 2.6 | | | 13.1 | | | 13.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 4% | 2% | 2% | 4% | 4% | 4% | 5% | 5% | 5% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| Adj. Flow (vph) | 0 | 0 | 51 | 396 | 0 | 0 | 0 | 0 | 0 | 0 | 3374 | 34 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 51 | 396 | 0 | 0 | 0 | 0 | 0 | 0 | 3408 | 0 |
| Turn Type | | | Free | Prot | | | | | | | NA | |
| Protected Phases | | | | 8 | | | | | | | 6 | |
| Permitted Phases | | | Free | | | | | | | | | |
| Detector Phase | | | | 8 | | | | | | | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | | | 7.0 | | | | | | | 12.0 | |
| Minimum Split (s) | | | | 14.0 | | | | | | | 19.0 | |
| Total Split (s) | | | | 18.0 | | | | | | | 72.0 | |
| Total Split (%) | | | | 20.0% | | | | | | | 80.0% | |
| Maximum Green (s) | | | | 11.0 | | | | | | | 65.0 | |
| Yellow Time (s) | | | | 5.0 | | | | | | | 5.0 | |
| All-Red Time (s) | | | | 2.0 | | | | | | | 2.0 | |
| Lost Time Adjust (s) | | | | -2.0 | | | | | | | -2.0 | |
| Total Lost Time (s) | | | | 5.0 | | | | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | | | 3.0 | | | | | | | 3.0 | |
| Recall Mode | | | | None | | | | | | | C-Min | |
| Act Effct Green (s) | | | 90.0 | 13.0 | | | | | | | 67.0 | |
| Actuated g/C Ratio | | | 1.00 | 0.14 | | | | | | | 0.74 | |
| v/c Ratio | | | 0.03 | 0.81 | | | | | | | 0.93 | |
| Control Delay | | | 0.0 | 47.8 | | | | | | | 15.6 | |
| Queue Delay | | | 0.0 | 0.0 | | | | | | | 0.0 | |
| Total Delay | | | 0.0 | 47.8 | | | | | | | 15.6 | |
| LOS | | | A | D | | | | | | | B | |
| Approach Delay | | | | | 47.8 | | | | | | 15.6 | |
| Approach LOS | | | | | D | | | | | | B | |
| Queue Length 50th (ft) | | | 0 | 110 | | | | | | | 478 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 95th (ft) | | | 0 | #184 | | | | | | | 586 | |
| Internal Link Dist (ft) | | 170 | | | 17 | | | 786 | | | 809 | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | | | 1596 | 486 | | | | | | | 3673 | |
| Starvation Cap Reductn | | | 0 | 0 | | | | | | | 0 | |
| Spillback Cap Reductn | | | 0 | 0 | | | | | | | 0 | |
| Storage Cap Reductn | | | 0 | 0 | | | | | | | 0 | |
| Reduced v/c Ratio | | | 0.03 | 0.81 | | | | | | | 0.93 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 4 (4%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 70 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.93 | | | |
| Intersection Signal Delay: 18.7 | | Intersection LOS: B | |
| Intersection Capacity Utilization 106.5% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |

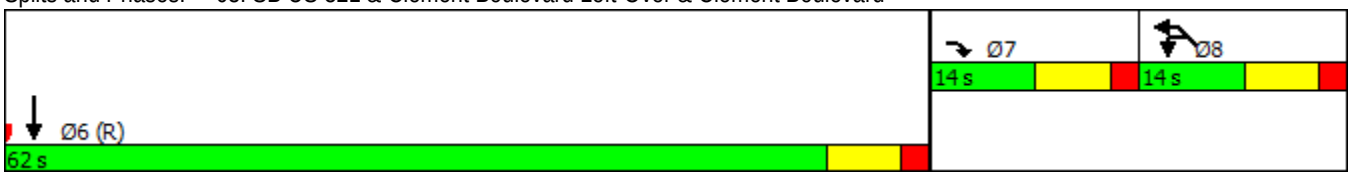
Splits and Phases: 62: SB US 321 & 13th Avenue Drive NW/Clement Boulevard U-Turn

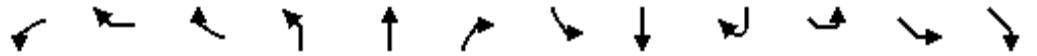
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 189 | 0 | 0 | 0 | 0 | 2210 | 222 | 70 | 57 | 0 |
| Future Volume (vph) | 0 | 0 | 189 | 0 | 0 | 0 | 0 | 2210 | 222 | 70 | 57 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | | | 0.986 | | | | |
| Flt Protected | | | | | | | | | | 0.950 | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2760 | 0 | 0 | 0 | 0 | 4918 | 0 | 1770 | 1770 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2760 | 0 | 0 | 0 | 0 | 4918 | 0 | 1770 | 1770 | 0 |
| Right Turn on Red | | | No | | | No | | | No | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 45 | | | 45 | | | 25 | |
| Link Distance (ft) | 910 | | | | 822 | | | 181 | | | 143 | |
| Travel Time (s) | 17.7 | | | | 12.5 | | | 2.7 | | | 3.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 5% | 5% | 5% | 4% | 4% | 4% | 2% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 210 | 0 | 0 | 0 | 0 | 2456 | 247 | 78 | 63 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 210 | 0 | 0 | 0 | 0 | 2703 | 0 | 78 | 63 | 0 |
| Turn Type | | | Prot | | | | | NA | | Prot | Prot | |
| Protected Phases | | | 7 | | | | | 6 | | 8 | 8 | |
| Permitted Phases | | | | | | | | | | | | |
| Detector Phase | | | 7 | | | | | 6 | | 8 | 8 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | | | | 12.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 19.0 | | 14.0 | 14.0 | |
| Total Split (s) | | | 14.0 | | | | | 62.0 | | 14.0 | 14.0 | |
| Total Split (%) | | | 15.6% | | | | | 68.9% | | 15.6% | 15.6% | |
| Maximum Green (s) | | | 7.0 | | | | | 55.0 | | 7.0 | 7.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | | | | -2.0 | | -2.0 | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | | | Lead | | | | | | | Lag | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | | | | Yes | Yes | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | | | None | | | | | C-Min | | None | None | |
| Act Effct Green (s) | | | 9.4 | | | | | 59.4 | | 9.0 | 9.0 | |
| Actuated g/C Ratio | | | 0.10 | | | | | 0.66 | | 0.10 | 0.10 | |
| v/c Ratio | | | 0.73 | | | | | 0.83 | | 0.44 | 0.36 | |
| Control Delay | | | 55.5 | | | | | 9.0 | | 43.0 | 41.0 | |
| Queue Delay | | | 0.0 | | | | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | | 55.5 | | | | | 9.0 | | 43.0 | 41.0 | |
| LOS | | | E | | | | | A | | D | D | |
| Approach Delay | 55.5 | | | | | | | 9.0 | | | 42.1 | |
| Approach LOS | E | | | | | | | A | | | D | |
| Queue Length 50th (ft) | | | 67 | | | | | 298 | | 34 | 27 | |
| Queue Length 95th (ft) | | | #127 | | | | | m372 | | m55 | m44 | |

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 830 | | | | 742 | | | 101 | | | 63 | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | | | 288 | | | | | 3246 | | 177 | 177 | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | | 0 | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | | 0 | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | | 0 | 0 | |
| Reduced v/c Ratio | | | 0.73 | | | | | 0.83 | | 0.44 | 0.36 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 24 (27%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 75 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.83 | | | |
| Intersection Signal Delay: 13.7 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 63: SB US 321 & Clement Boulevard Left-Over & Clement Boulevard





| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL2 | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 138 | 0 | 1612 | 52 | 0 | 0 | 0 | 142 | 62 | 0 |
| Future Volume (vph) | 0 | 0 | 138 | 0 | 1612 | 52 | 0 | 0 | 0 | 142 | 62 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 250 | | 0 | | 375 | 0 | | 0 | | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 1 | 0 | | 0 | | 1 | 0 |
| Taper Length (ft) | 50 | | | 50 | | | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.995 | | | | | | | |
| Flt Protected | | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2733 | 0 | 4963 | 0 | 0 | 0 | 0 | 0 | 1736 | 0 |
| Flt Permitted | | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2733 | 0 | 4963 | 0 | 0 | 0 | 0 | 0 | 1736 | 0 |
| Right Turn on Red | | | No | | | No | | | No | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 45 | | | 45 | | | 25 | |
| Link Distance (ft) | 319 | | | | 1115 | | | 832 | | | 149 | |
| Travel Time (s) | 6.2 | | | | 16.9 | | | 12.6 | | | 4.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 153 | 0 | 1791 | 58 | 0 | 0 | 0 | 158 | 69 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 153 | 0 | 1849 | 0 | 0 | 0 | 0 | 0 | 227 | 0 |
| Turn Type | | | Prot | | NA | | | | | Prot | Prot | |
| Protected Phases | | | 8 | | 2 | | | | | 4 | 4 | |
| Permitted Phases | | | | | | | | | | | | |
| Detector Phase | | | 8 | | 2 | | | | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 12.0 | | | | | 7.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 19.0 | | | | | 14.0 | 14.0 | |
| Total Split (s) | | | 15.0 | | 50.0 | | | | | 25.0 | 25.0 | |
| Total Split (%) | | | 16.7% | | 55.6% | | | | | 27.8% | 27.8% | |
| Maximum Green (s) | | | 8.0 | | 43.0 | | | | | 18.0 | 18.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | | | | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | -2.0 | | | | | | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | | | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | |
| Recall Mode | | | None | | C-Min | | | | | None | None | |
| Act Effct Green (s) | | | 10.2 | | 47.2 | | | | | | 17.6 | |
| Actuated g/C Ratio | | | 0.11 | | 0.52 | | | | | | 0.20 | |
| v/c Ratio | | | 0.49 | | 0.71 | | | | | | 0.67 | |
| Control Delay | | | 43.3 | | 12.1 | | | | | | 45.9 | |
| Queue Delay | | | 0.0 | | 0.0 | | | | | | 0.0 | |
| Total Delay | | | 43.3 | | 12.1 | | | | | | 45.9 | |
| LOS | | | D | | B | | | | | | D | |
| Approach Delay | 43.3 | | | | 12.1 | | | | | | 45.9 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL2 | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | D | | | | B | | | | | | D | |
| Queue Length 50th (ft) | | | 46 | | 280 | | | | | | 108 | |
| Queue Length 95th (ft) | | | 81 | | 227 | | | | | | m135 | |
| Internal Link Dist (ft) | 239 | | | | 1035 | | | 752 | | | 69 | |
| Turn Bay Length (ft) | | | 250 | | | | | | | | | |
| Base Capacity (vph) | | | 316 | | 2600 | | | | | | 385 | |
| Starvation Cap Reductn | | | 0 | | 0 | | | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | | | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | | | | | | 0 | |
| Reduced v/c Ratio | | | 0.48 | | 0.71 | | | | | | 0.59 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 75 (83%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.71 | | | |
| Intersection Signal Delay: 17.7 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 64: NB US 321 & 9th Avenue NW & Clement Boulevard

| Lane Group | EBL | EBR | SET | SER | NWL | NWT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 356 | 2050 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 356 | 2050 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 300 | |
| Storage Lanes | 0 | 0 | | 0 | 2 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 | 0.91 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 3367 | 4988 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 3367 | 4988 |
| Link Speed (mph) | 25 | | 45 | | | 45 |
| Link Distance (ft) | 97 | | 939 | | | 983 |
| Travel Time (s) | 2.6 | | 14.2 | | | 14.9 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 5% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 396 | 2278 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 396 | 2278 |
| Sign Control | Stop | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 106.5% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 978 | 2432 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 978 | 2432 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 400 | | 0 | 0 |
| Storage Lanes | | 0 | 2 | | 0 | 0 |
| Taper Length (ft) | | | 50 | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 3367 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 3367 | 4988 | 0 | 0 |
| Link Speed (mph) | 45 | | | 45 | 55 | |
| Link Distance (ft) | 181 | | | 866 | 205 | |
| Travel Time (s) | 2.7 | | | 13.1 | 2.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 1087 | 2702 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 1087 | 2702 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 50.3% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 204 | 2048 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 204 | 2048 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 200 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 50 | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Link Speed (mph) | 45 | | | 45 | 55 | |
| Link Distance (ft) | 1170 | | | 822 | 149 | |
| Travel Time (s) | 17.7 | | | 12.5 | 1.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 227 | 2276 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 227 | 2276 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 42.9% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 127 | 1607 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 127 | 1607 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 400 | | | 0 | 0 | 0 |
| Storage Lanes | 2 | | | 0 | 0 | 0 |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 0.97 | 0.86 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 3335 | 6225 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 3335 | 6225 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 45 | 45 | | 55 | |
| Link Distance (ft) | | 832 | 125 | | 143 | |
| Travel Time (s) | | 12.6 | 1.9 | | 1.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 4% | 42% | 5% | 5% |
| Adj. Flow (vph) | 141 | 1786 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 141 | 1786 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 26.6% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

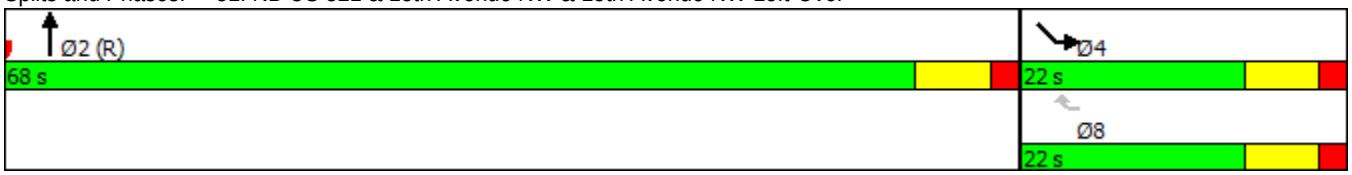
Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 63 | 0 | 1984 | 28 | 0 | 0 | 0 | 115 | 0 |
| Future Volume (vph) | 0 | 0 | 63 | 0 | 1984 | 28 | 0 | 0 | 0 | 115 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.998 | | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2787 | 0 | 4932 | 0 | 0 | 0 | 0 | 1736 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2787 | 0 | 4932 | 0 | 0 | 0 | 0 | 1736 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 45 | | | 45 | | 25 | |
| Link Distance (ft) | 478 | | | | 179 | | | 784 | | 210 | |
| Travel Time (s) | 9.3 | | | | 2.7 | | | 11.9 | | 5.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 5% | 2% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 70 | 0 | 2204 | 31 | 0 | 0 | 0 | 128 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 70 | 0 | 2235 | 0 | 0 | 0 | 0 | 128 | 0 |
| Turn Type | | | Perm | | NA | | | | | Prot | |
| Protected Phases | | | | | 2 | | | | | 4 | |
| Permitted Phases | | | 8 | | | | | | | | |
| Detector Phase | | | 8 | | 2 | | | | | 4 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 12.0 | | | | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 19.0 | | | | | 14.0 | |
| Total Split (s) | | | 22.0 | | 68.0 | | | | | 22.0 | |
| Total Split (%) | | | 24.4% | | 75.6% | | | | | 24.4% | |
| Maximum Green (s) | | | 15.0 | | 61.0 | | | | | 15.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | | | | | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | -2.0 | | | | | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | | | | | 3.0 | |
| Recall Mode | | | None | | C-Min | | | | | None | |
| Act Effct Green (s) | | | 13.6 | | 66.4 | | | | | 13.6 | |
| Actuated g/C Ratio | | | 0.15 | | 0.74 | | | | | 0.15 | |
| v/c Ratio | | | 0.17 | | 0.61 | | | | | 0.49 | |
| Control Delay | | | 32.9 | | 3.9 | | | | | 40.8 | |
| Queue Delay | | | 0.0 | | 0.0 | | | | | 0.0 | |
| Total Delay | | | 32.9 | | 3.9 | | | | | 40.8 | |
| LOS | | | C | | A | | | | | D | |
| Approach Delay | 32.9 | | | | 3.9 | | | | | 40.8 | |
| Approach LOS | C | | | | A | | | | | D | |
| Queue Length 50th (ft) | | | 19 | | 62 | | | | | 67 | |
| Queue Length 95th (ft) | | | 39 | | 197 | | | | | 118 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 398 | | | | 99 | | | 704 | | 130 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 526 | | 3638 | | | | | 327 | |
| Starvation Cap Reductn | | | 0 | | 0 | | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | | | | | 0 | |
| Reduced v/c Ratio | | | 0.13 | | 0.61 | | | | | 0.39 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 16 (18%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 40 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.61 | | | |
| Intersection Signal Delay: 6.7 | | Intersection LOS: A | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 81: NB US 321 & 15th Avenue NW & 15th Avenue NW Left-Over



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 18 | 0 | 0 | 0 | 0 | 3094 |
| Future Volume (vph) | 18 | 0 | 0 | 0 | 0 | 3094 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1719 | 0 | 0 | 0 | 0 | 4988 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1719 | 0 | 0 | 0 | 0 | 4988 |
| Link Speed (mph) | 25 | | 45 | | | 45 |
| Link Distance (ft) | 85 | | 652 | | | 641 |
| Travel Time (s) | 2.3 | | 9.9 | | | 9.7 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 20 | 0 | 0 | 0 | 0 | 3438 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 20 | 0 | 0 | 0 | 0 | 3438 |
| Sign Control | Stop | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 105.7% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 18 | 0 | 0 | 0 | 0 | 3094 |
| Future Volume (Veh/h) | 18 | 0 | 0 | 0 | 0 | 3094 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 20 | 0 | 0 | 0 | 0 | 3438 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1146 | 0 | | | 0 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1146 | 0 | | | 0 | |
| tC, single (s) | 6.9 | 6.9 | | | 4.2 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 89 | 100 | | | 100 | |
| cM capacity (veh/h) | 188 | 1084 | | | 1607 | |

| Direction, Lane # | WB 1 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|
| Volume Total | 20 | 1146 | 1146 | 1146 |
| Volume Left | 20 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 |
| cSH | 188 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.11 | 0.67 | 0.67 | 0.67 |
| Queue Length 95th (ft) | 9 | 0 | 0 | 0 |
| Control Delay (s) | 26.4 | 0.0 | 0.0 | 0.0 |
| Lane LOS | D | | | |
| Approach Delay (s) | 26.4 | 0.0 | | |
| Approach LOS | D | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.2 | | |
| Intersection Capacity Utilization | 105.7% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

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

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 18 | 0 | 0 | 0 | 0 | 3094 |
| Future Vol, veh/h | 18 | 0 | 0 | 0 | 0 | 3094 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 5 | 2 | 4 | 4 | 4 | 4 |
| Mvmt Flow | 20 | 0 | 0 | 0 | 0 | 3438 |

| Major/Minor | Minor1 | | Major2 | |
|---|---|---|---|---|
| Conflicting Flow All | 1375 | - | - | - |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 1375 | - | - | - |
| Critical Hdwy | 5.8 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | 6.1 | - | - | - |
| Follow-up Hdwy | 3.85 | - | - | - |
| Pot Cap-1 Maneuver | 195 | 0 | 0 | - |
| Stage 1 | - | 0 | 0 | - |
| Stage 2 | 174 | 0 | 0 | - |
| Platoon blocked, % | | | | - |
| Mov Cap-1 Maneuver | 195 | - | - | - |
| Mov Cap-2 Maneuver | 195 | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | 174 | - | - | - |

| Approach | WB | SB |
|---|---|---|
| HCM Control Delay, s | 25.6 | 0 |
| HCM LOS | D | |

| Minor Lane/Major Mvmt | WBLn1 | SBT |
|---|---|---|
| Capacity (veh/h) | 195 | - |
| HCM Lane V/C Ratio | 0.103 | - |
| HCM Control Delay (s) | 25.6 | - |
| HCM Lane LOS | D | - |
| HCM 95th %tile Q(veh) | 0.3 | - |

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 2965 | 32 | 20 | 0 |
| Future Volume (vph) | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 2965 | 32 | 20 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 |
| Frt | | | 0.865 | | | | | 0.998 | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 1565 | 0 | 0 | 0 | 0 | 4978 | 0 | 1736 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 1565 | 0 | 0 | 0 | 0 | 4978 | 0 | 1736 | 0 |
| Link Speed (mph) | 35 | | | | 45 | | | 45 | | 25 | |
| Link Distance (ft) | 560 | | | | 842 | | | 224 | | 173 | |
| Travel Time (s) | 10.9 | | | | 12.8 | | | 3.4 | | 4.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 0% |
| Adj. Flow (vph) | 0 | 0 | 32 | 0 | 0 | 0 | 0 | 3294 | 36 | 22 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 32 | 0 | 0 | 0 | 0 | 3330 | 0 | 22 | 0 |
| Sign Control | Stop | | | | Free | | | Free | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 68.0% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

| Movement | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 2965 | 32 | 20 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 2965 | 32 | 20 | 0 |
| Sign Control | Stop | | | | Free | | | Free | | Stop | |
| Grade | 0% | | | | 0% | | | 0% | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 32 | 0 | 0 | 0 | 0 | 3294 | 36 | 22 | 0 |
| Pedestrians | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | |
| Median type | | | | | None | | | None | | | |
| Median storage veh) | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | |
| vC, conflicting volume | 3323 | 3312 | 1116 | 3330 | | | 0 | | | 3330 | 0 |
| vC1, stage 1 conf vol | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | |
| vCu, unblocked vol | 3323 | 3312 | 1116 | 3330 | | | 0 | | | 3330 | 0 |
| tC, single (s) | 7.6 | 6.6 | 7.0 | 4.2 | | | 4.2 | | | 6.6 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | | 4.0 | 3.3 |
| p0 queue free % | 0 | 100 | 84 | 100 | | | 100 | | | 0 | 100 |
| cM capacity (veh/h) | 0 | 8 | 197 | 80 | | | 1607 | | | 8 | 1091 |

| Direction, Lane # | EB 1 | SB 1 | SB 2 | SB 3 | NW 1 |
|---|---|---|---|---|---|
| Volume Total | 32 | 1318 | 1318 | 695 | 22 |
| Volume Left | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 32 | 0 | 0 | 36 | 0 |
| cSH | 197 | 1700 | 1700 | 1700 | 8 |
| Volume to Capacity | 0.16 | 0.78 | 0.78 | 0.41 | 2.84 |
| Queue Length 95th (ft) | 14 | 0 | 0 | 0 | 97 |
| Control Delay (s) | 26.8 | 0.0 | 0.0 | 0.0 | 1756.3 |
| Lane LOS | D | | | | F |
| Approach Delay (s) | 26.8 | 0.0 | | | 1756.3 |
| Approach LOS | D | | | | F |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 11.7 | | | |
| Intersection Capacity Utilization | 68.0% | ICU Level of Service | C | |
| Analysis Period (min) | 15 | | | |

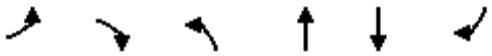
| Intersection | |
|---|---|
| Int Delay, s/veh | 1.3 |

| Movement | EBL | EBR | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2965 | 32 | 20 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2965 | 32 | 20 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | - | - | - | None | - | - | None | - | None |
| Storage Length | - | 0 | - | - | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | - | - | - | 0 | - | 0 | - |
| Grade, % | 0 | - | - | 0 | - | - | 0 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 0 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 3294 | 36 | 22 | 0 |

| Major/Minor | Minor2 | | | | | Major2 | | | Minor1 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 1665 | | | | - | - | 0 | 1318 | - |
| Stage 1 | - | - | | | | - | - | - | 0 | - |
| Stage 2 | - | - | | | | - | - | - | 1318 | - |
| Critical Hdwy | - | 7.2 | | | | - | - | - | 6.48 | - |
| Critical Hdwy Stg 1 | - | - | | | | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | | | | - | - | - | 6.78 | - |
| Follow-up Hdwy | - | 3.95 | | | | - | - | - | 3.84 | - |
| Pot Cap-1 Maneuver | 0 | 71 | | | | 0 | - | - | 163 | 0 |
| Stage 1 | 0 | - | | | | 0 | - | - | - | 0 |
| Stage 2 | 0 | - | | | | 0 | - | - | 146 | 0 |
| Platoon blocked, % | | | | | | | - | - | | |
| Mov Cap-1 Maneuver | - | 71 | | | | - | - | - | 89 | - |
| Mov Cap-2 Maneuver | - | - | | | | - | - | - | 89 | - |
| Stage 1 | - | - | | | | - | - | - | - | - |
| Stage 2 | - | - | | | | - | - | - | 80 | - |

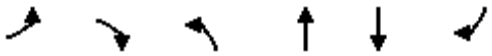
| Approach | EB | SB | NW |
|---|---|---|---|
| HCM Control Delay, s | 92.4 | 0 | 58.4 |
| HCM LOS | F | | F |

| Minor Lane/Major Mvmt | NWLn1 | EBLn1 | SBT | SBR |
|---|---|---|---|---|
| Capacity (veh/h) | 89 | 71 | - | - |
| HCM Lane V/C Ratio | 0.25 | 0.454 | - | - |
| HCM Control Delay (s) | 58.4 | 92.4 | - | - |
| HCM Lane LOS | F | F | - | - |
| HCM 95th %tile Q(veh) | 0.9 | 1.8 | - | - |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 16 | 0 | 0 | 2016 | 0 | 0 |
| Future Volume (vph) | 16 | 0 | 0 | 2016 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1719 | 0 | 0 | 4940 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1719 | 0 | 0 | 4940 | 0 | 0 |
| Link Speed (mph) | 25 | | | 45 | 45 | |
| Link Distance (ft) | 53 | | | 939 | 719 | |
| Travel Time (s) | 1.4 | | | 14.2 | 10.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 2% | 5% | 5% | 4% | 4% |
| Adj. Flow (vph) | 18 | 0 | 0 | 2240 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 18 | 0 | 0 | 2240 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 49.0% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 16 | 0 | 0 | 2016 | 0 | 0 |
| Future Volume (Veh/h) | 16 | 0 | 0 | 2016 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 18 | 0 | 0 | 2240 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 747 | 0 | 0 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 747 | 0 | 0 | | | |
| tC, single (s) | 6.9 | 6.9 | 4.2 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 95 | 100 | 100 | | | |
| cM capacity (veh/h) | 343 | 1084 | 1600 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | NB 3 |
|---|---|---|---|---|
| Volume Total | 18 | 747 | 747 | 747 |
| Volume Left | 18 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 |
| cSH | 343 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.05 | 0.44 | 0.44 | 0.44 |
| Queue Length 95th (ft) | 4 | 0 | 0 | 0 |
| Control Delay (s) | 16.1 | 0.0 | 0.0 | 0.0 |
| Lane LOS | C | | | |
| Approach Delay (s) | 16.1 | 0.0 | | |
| Approach LOS | C | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.1 | | |
| Intersection Capacity Utilization | 49.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

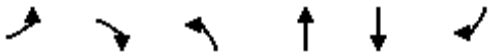
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.1 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 16 | 0 | 0 | 2016 | 0 | 0 |
| Future Vol, veh/h | 16 | 0 | 0 | 2016 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | - | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 5 | 2 | 5 | 5 | 4 | 4 |
| Mvmt Flow | 18 | 0 | 0 | 2240 | 0 | 0 |

| Major/Minor | Minor2 | | Major1 | |
|---|---|---|---|---|
| Conflicting Flow All | 896 | - | - | 0 |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 896 | - | - | - |
| Critical Hdwy | 5.8 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | 6.1 | - | - | - |
| Follow-up Hdwy | 3.85 | - | - | - |
| Pot Cap-1 Maneuver | 343 | 0 | 0 | - |
| Stage 1 | - | 0 | 0 | - |
| Stage 2 | 318 | 0 | 0 | - |
| Platoon blocked, % | | | | - |
| Mov Cap-1 Maneuver | 343 | - | - | - |
| Mov Cap-2 Maneuver | 343 | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | 318 | - | - | - |

| Approach | EB | NB |
|---|---|---|
| HCM Control Delay, s | 16.1 | 0 |
| HCM LOS | C | |

| Minor Lane/Major Mvmt | NBT | EBLn1 |
|---|---|---|
| Capacity (veh/h) | - | 343 |
| HCM Lane V/C Ratio | - | 0.052 |
| HCM Control Delay (s) | - | 16.1 |
| HCM Lane LOS | - | C |
| HCM 95th %tile Q(veh) | - | 0.2 |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 18 | 2029 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 18 | 2029 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 200 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 50 | | 50 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1719 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1719 | 4988 | 0 | 0 |
| Link Speed (mph) | 25 | | | 45 | 45 | |
| Link Distance (ft) | 85 | | | 784 | 717 | |
| Travel Time (s) | 2.3 | | | 11.9 | 10.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 5% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 20 | 2254 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 20 | 2254 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 105.7% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 115 | 2997 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 115 | 2997 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 500 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1736 | 4988 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1736 | 4988 |
| Link Speed (mph) | 55 | | 45 | | | 45 |
| Link Distance (ft) | 210 | | 224 | | | 652 |
| Travel Time (s) | 2.6 | | 3.4 | | | 9.9 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 128 | 3330 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 128 | 3330 |
| Sign Control | Stop | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 69.8% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | SEL | SET | NWT | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 16 | 2978 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 16 | 2978 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 250 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 50 | | 50 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Link Speed (mph) | 55 | | | 45 | 45 | |
| Link Distance (ft) | 53 | | | 842 | 889 | |
| Travel Time (s) | 0.7 | | | 12.8 | 13.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 5% | 5% |
| Adj. Flow (vph) | 0 | 0 | 18 | 3309 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 18 | 3309 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 60.9% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | EBL | EBR | SET | SER | NWL | NWT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 20 | 2012 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 20 | 2012 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 200 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1736 | 4988 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1736 | 4988 |
| Link Speed (mph) | 25 | | 45 | | | 45 |
| Link Distance (ft) | 173 | | 179 | | | 719 |
| Travel Time (s) | 4.7 | | 2.7 | | | 10.9 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 22 | 2236 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 22 | 2236 |
| Sign Control | Stop | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 92.3% | ICU Level of Service | F |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 420 | 34 | 1829 | 200 | 0 | 2713 |
| Future Volume (vph) | 420 | 34 | 1829 | 200 | 0 | 2713 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 500 | 500 | | 550 | 0 | |
| Storage Lanes | 1 | 1 | | 1 | 0 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 0.97 | 0.88 | 0.91 | 1.00 | 1.00 | 0.91 |
| Frt | | 0.850 | | 0.850 | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 3433 | 2787 | 4988 | 1553 | 0 | 4988 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 3433 | 2787 | 4988 | 1553 | 0 | 4988 |
| Right Turn on Red | | No | | No | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 35 | | 55 | | | 55 |
| Link Distance (ft) | 986 | | 624 | | | 167 |
| Travel Time (s) | 19.2 | | 7.7 | | | 2.1 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 467 | 38 | 2032 | 222 | 0 | 3014 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 467 | 38 | 2032 | 222 | 0 | 3014 |
| Turn Type | Prot | Prot | NA | Free | | NA |
| Protected Phases | 8 | 8 | 2 | | | 6 |
| Permitted Phases | | | | Free | | |
| Detector Phase | 8 | 8 | 2 | | | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 14.0 | | | 14.0 |
| Minimum Split (s) | 14.0 | 14.0 | 21.0 | | | 21.0 |
| Total Split (s) | 22.0 | 22.0 | 68.0 | | | 68.0 |
| Total Split (%) | 24.4% | 24.4% | 75.6% | | | 75.6% |
| Maximum Green (s) | 15.0 | 15.0 | 61.0 | | | 61.0 |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | | | 5.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | 2.0 |
| Lost Time Adjust (s) | -2.0 | -2.0 | -2.0 | | | -2.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | | 3.0 |
| Recall Mode | None | None | C-Min | | | C-Min |
| Act Effct Green (s) | 16.6 | 16.6 | 63.4 | 90.0 | | 63.4 |
| Actuated g/C Ratio | 0.18 | 0.18 | 0.70 | 1.00 | | 0.70 |
| v/c Ratio | 0.74 | 0.07 | 0.58 | 0.14 | | 0.86 |
| Control Delay | 42.5 | 30.6 | 6.5 | 0.2 | | 13.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Delay | 42.5 | 30.6 | 6.5 | 0.2 | | 13.4 |
| LOS | D | C | A | A | | B |
| Approach Delay | 41.6 | | 5.9 | | | 13.4 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Approach LOS | D | | A | | | B |
| Queue Length 50th (ft) | 129 | 10 | 223 | 0 | | 407 |
| Queue Length 95th (ft) | 182 | 25 | 148 | 0 | | 489 |
| Internal Link Dist (ft) | 906 | | 544 | | | 87 |
| Turn Bay Length (ft) | 500 | 500 | | 550 | | |
| Base Capacity (vph) | 648 | 526 | 3514 | 1553 | | 3514 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | | 0 |
| Reduced v/c Ratio | 0.72 | 0.07 | 0.58 | 0.14 | | 0.86 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.86 | | | |
| Intersection Signal Delay: 12.9 | | Intersection LOS: B | |
| Intersection Capacity Utilization 72.7% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 91: US 321 & Grace Chapel Road

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 4 | 0 | 0 | 0 | 0 | 2713 |
| Future Volume (vph) | 4 | 0 | 0 | 0 | 0 | 2713 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 500 | |
| Storage Lanes | 1 | 0 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 0 | 0 | 0 | 0 | 4988 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 0 | 0 | 0 | 0 | 4988 |
| Link Speed (mph) | 25 | | 55 | | | 55 |
| Link Distance (ft) | 91 | | 428 | | | 2189 |
| Travel Time (s) | 2.5 | | 5.3 | | | 27.1 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 4 | 0 | 0 | 0 | 0 | 3014 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 4 | 0 | 0 | 0 | 0 | 3014 |
| Sign Control | Stop | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 62.4% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 4 | 0 | 0 | 0 | 0 | 2713 |
| Future Volume (Veh/h) | 4 | 0 | 0 | 0 | 0 | 2713 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 4 | 0 | 0 | 0 | 0 | 3014 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1005 | 0 | | | 0 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1005 | 0 | | | 0 | |
| tC, single (s) | 6.9 | 6.9 | | | 4.2 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 98 | 100 | | | 100 | |
| cM capacity (veh/h) | 235 | 1084 | | | 1607 | |

| Direction, Lane # | WB 1 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|
| Volume Total | 4 | 1005 | 1005 | 1005 |
| Volume Left | 4 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 |
| cSH | 235 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.02 | 0.59 | 0.59 | 0.59 |
| Queue Length 95th (ft) | 1 | 0 | 0 | 0 |
| Control Delay (s) | 20.6 | 0.0 | 0.0 | 0.0 |
| Lane LOS | C | | | |
| Approach Delay (s) | 20.6 | 0.0 | | |
| Approach LOS | C | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 62.4% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

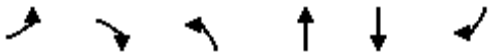
| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 4 | 0 | 0 | 0 | 0 | 2713 |
| Future Vol, veh/h | 4 | 0 | 0 | 0 | 0 | 2713 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 500 | - |
| Veh in Median Storage, # | 0 | - | - | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 4 | 2 | 4 | 4 | 4 | 4 |
| Mvmt Flow | 4 | 0 | 0 | 0 | 0 | 3014 |

| Major/Minor | Minor1 | | Major2 | |
|---|---|---|---|---|
| Conflicting Flow All | 1206 | - | - | - |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 1206 | - | - | - |
| Critical Hdwy | 5.78 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | 6.08 | - | - | - |
| Follow-up Hdwy | 3.84 | - | - | - |
| Pot Cap-1 Maneuver | 240 | 0 | 0 | - |
| Stage 1 | - | 0 | 0 | - |
| Stage 2 | 217 | 0 | 0 | - |
| Platoon blocked, % | | | | - |
| Mov Cap-1 Maneuver | 240 | - | - | - |
| Mov Cap-2 Maneuver | 240 | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | 217 | - | - | - |

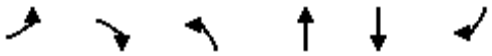
| Approach | WB | SB |
|---|---|---|
| HCM Control Delay, s | 20.3 | 0 |
| HCM LOS | C | |

| Minor Lane/Major Mvmt | WBLn1 | SBT |
|---|---|---|
| Capacity (veh/h) | 240 | - |
| HCM Lane V/C Ratio | 0.019 | - |
| HCM Control Delay (s) | 20.3 | - |
| HCM Lane LOS | C | - |
| HCM 95th %tile Q(veh) | 0.1 | - |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 21 | 0 | 0 | 2008 | 0 | 0 |
| Future Volume (vph) | 21 | 0 | 0 | 2008 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 0 | 0 | 4988 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 0 | 0 | 4988 | 0 | 0 |
| Link Speed (mph) | 25 | | | 45 | 55 | |
| Link Distance (ft) | 169 | | | 796 | 599 | |
| Travel Time (s) | 4.6 | | | 12.1 | 7.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 23 | 0 | 0 | 2231 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 23 | 0 | 0 | 2231 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 105.6% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 21 | 0 | 0 | 2008 | 0 | 0 |
| Future Volume (Veh/h) | 21 | 0 | 0 | 2008 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 23 | 0 | 0 | 2231 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 744 | 0 | 0 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 744 | 0 | 0 | | | |
| tC, single (s) | 6.9 | 6.9 | 4.2 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 93 | 100 | 100 | | | |
| cM capacity (veh/h) | 346 | 1084 | 1607 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | NB 3 |
|---|---|---|---|---|
| Volume Total | 23 | 744 | 744 | 744 |
| Volume Left | 23 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 |
| cSH | 346 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.07 | 0.44 | 0.44 | 0.44 |
| Queue Length 95th (ft) | 5 | 0 | 0 | 0 |
| Control Delay (s) | 16.1 | 0.0 | 0.0 | 0.0 |
| Lane LOS | C | | | |
| Approach Delay (s) | 16.1 | 0.0 | | |
| Approach LOS | C | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.2 | | |
| Intersection Capacity Utilization | 105.6% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

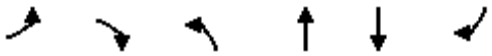
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.2 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 21 | 0 | 0 | 2008 | 0 | 0 |
| Future Vol, veh/h | 21 | 0 | 0 | 2008 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | - | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 4 | 2 | 4 | 4 | 4 | 4 |
| Mvmt Flow | 23 | 0 | 0 | 2231 | 0 | 0 |

| Major/Minor | Minor2 | | Major1 | |
|---|---|---|---|---|
| Conflicting Flow All | 892 | - | - | 0 |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 892 | - | - | - |
| Critical Hdwy | 5.78 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | 6.08 | - | - | - |
| Follow-up Hdwy | 3.84 | - | - | - |
| Pot Cap-1 Maneuver | 347 | 0 | 0 | - |
| Stage 1 | - | 0 | 0 | - |
| Stage 2 | 322 | 0 | 0 | - |
| Platoon blocked, % | | | | - |
| Mov Cap-1 Maneuver | 347 | - | - | - |
| Mov Cap-2 Maneuver | 347 | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | 322 | - | - | - |

| Approach | EB | NB |
|---|---|---|
| HCM Control Delay, s | 16.1 | 0 |
| HCM LOS | C | |

| Minor Lane/Major Mvmt | NBT | EBLn1 |
|---|---|---|
| Capacity (veh/h) | - | 347 |
| HCM Lane V/C Ratio | - | 0.067 |
| HCM Control Delay (s) | - | 16.1 |
| HCM Lane LOS | - | C |
| HCM 95th %tile Q(veh) | - | 0.2 |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 4 | 1863 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 4 | 1863 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 200 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 50 | | 40 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Link Speed (mph) | 30 | | | 55 | 55 | |
| Link Distance (ft) | 91 | | | 347 | 2226 | |
| Travel Time (s) | 2.1 | | | 4.3 | 27.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 4 | 2070 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 4 | 2070 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 62.4% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 21 | 3112 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 21 | 3112 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 350 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1736 | 4988 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1736 | 4988 |
| Link Speed (mph) | 30 | | 45 | | | 55 |
| Link Distance (ft) | 169 | | 960 | | | 435 |
| Travel Time (s) | 3.8 | | 14.5 | | | 5.4 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 23 | 3458 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 23 | 3458 |
| Sign Control | Stop | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 123.5% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 3133 | 0 | 2029 |
| Future Volume (vph) | 0 | 0 | 0 | 3133 | 0 | 2029 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 0.76 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 0 | 0 | 4988 | 0 | 3541 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 0 | 0 | 4988 | 0 | 3541 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 435 | | | 624 | 599 | |
| Travel Time (s) | 5.4 | | | 7.7 | 7.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 3481 | 0 | 2254 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 3481 | 0 | 2254 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 114.5% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 1863 | 0 | 0 | 0 | 2713 |
| Future Volume (vph) | 0 | 1863 | 0 | 0 | 0 | 2713 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 0.76 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 4988 | 0 | 0 | 0 | 3541 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 4988 | 0 | 0 | 0 | 3541 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 167 | 347 | | 428 | |
| Travel Time (s) | | 2.1 | 4.3 | | 5.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 2% | 2% | 4% | 4% |
| Adj. Flow (vph) | 0 | 2070 | 0 | 0 | 0 | 3014 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 2070 | 0 | 0 | 0 | 3014 |
| Sign Control | | Free | Stop | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 66.6% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

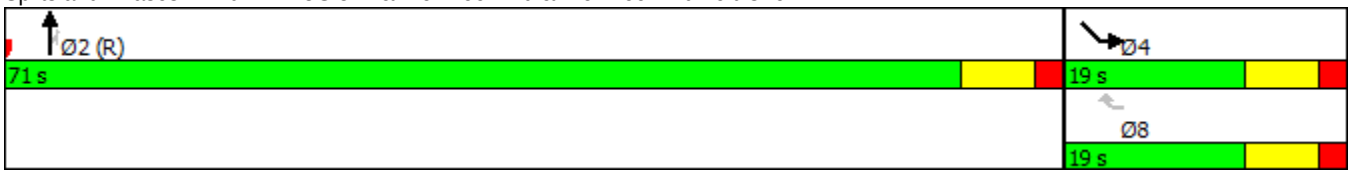
| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 110 | 0 | 1560 | 74 | 0 | 0 | 0 | 8 | 0 |
| Future Volume (vph) | 0 | 0 | 110 | 0 | 1560 | 74 | 0 | 0 | 0 | 8 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | | 0 | 250 | | 0 | 0 | 0 |
| Storage Lanes | 0 | 2 | | 0 | | 1 | 0 | | 0 | 1 | 0 |
| Taper Length (ft) | 50 | | | 50 | | | 50 | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 1895 | 0 | 3471 | 1442 | 0 | 0 | 0 | 1612 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 1895 | 0 | 3471 | 1442 | 0 | 0 | 0 | 1612 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 682 | | | | 200 | | | 676 | | 124 | |
| Travel Time (s) | 13.3 | | | | 2.5 | | | 8.4 | | 3.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 12% | 12% | 50% | 2% | 4% | 12% | 12% | 4% | 4% | 12% | 4% |
| Adj. Flow (vph) | 0 | 0 | 122 | 0 | 1733 | 82 | 0 | 0 | 0 | 9 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 122 | 0 | 1733 | 82 | 0 | 0 | 0 | 9 | 0 |
| Turn Type | | | Perm | | NA | Perm | | | | Prot | |
| Protected Phases | | | | | 2 | | | | | 4 | |
| Permitted Phases | | | 8 | | | 2 | | | | | |
| Detector Phase | | | 8 | | 2 | 2 | | | | 4 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 14.0 | 14.0 | | | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 21.0 | 21.0 | | | | 14.0 | |
| Total Split (s) | | | 19.0 | | 71.0 | 71.0 | | | | 19.0 | |
| Total Split (%) | | | 21.1% | | 78.9% | 78.9% | | | | 21.1% | |
| Maximum Green (s) | | | 12.0 | | 64.0 | 64.0 | | | | 12.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | 5.0 | | | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | 2.0 | | | | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | -2.0 | -2.0 | | | | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | 5.0 | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | 3.0 | | | | 3.0 | |
| Recall Mode | | | None | | C-Min | C-Min | | | | None | |
| Act Effct Green (s) | | | 12.4 | | 67.6 | 67.6 | | | | 12.4 | |
| Actuated g/C Ratio | | | 0.14 | | 0.75 | 0.75 | | | | 0.14 | |
| v/c Ratio | | | 0.47 | | 0.67 | 0.08 | | | | 0.04 | |
| Control Delay | | | 41.3 | | 2.9 | 0.7 | | | | 31.5 | |
| Queue Delay | | | 0.0 | | 0.0 | 0.0 | | | | 0.0 | |
| Total Delay | | | 41.3 | | 2.9 | 0.7 | | | | 31.5 | |
| LOS | | | D | | A | A | | | | C | |
| Approach Delay | 41.3 | | | | 2.8 | | | | | 31.5 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | D | | | | A | | | | | C | |
| Queue Length 50th (ft) | | | 36 | | 41 | 3 | | | | 4 | |
| Queue Length 95th (ft) | | | 66 | | 12 | m2 | | | | m4 | |
| Internal Link Dist (ft) | 602 | | | | 120 | | | 596 | | 44 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 297 | | 2611 | 1084 | | | | 253 | |
| Starvation Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Reduced v/c Ratio | | | 0.41 | | 0.66 | 0.08 | | | | 0.04 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 44 (49%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 50 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.67 | | | |
| Intersection Signal Delay: 5.4 | | Intersection LOS: A | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 101: NB US 321 & Alex Lee Blvd & Alex Lee Blvd Left-Over



| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 2357 | 96 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 2357 | 96 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 3505 | 1203 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 3505 | 1203 | 0 |
| Link Speed (mph) | 30 | | | 55 | 25 | |
| Link Distance (ft) | 653 | | | 1220 | 102 | |
| Travel Time (s) | 14.8 | | | 15.1 | 2.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 3% | 50% | 2% |
| Adj. Flow (vph) | 0 | 0 | 0 | 2619 | 107 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 2619 | 107 | 0 |
| Sign Control | Free | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 115.3% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

| Movement | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 2357 | 96 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 2357 | 96 | 0 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 2619 | 107 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 0 | | 1310 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 0 | | 1310 | 0 |
| tC, single (s) | | | 4.2 | | 7.8 | 6.9 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 4.0 | 3.3 |
| p0 queue free % | | | 100 | | 0 | 100 |
| cM capacity (veh/h) | | | 1607 | | 100 | 1084 |

| Direction, Lane # | SB 1 | SB 2 | NW 1 |
|---|---|---|---|
| Volume Total | 1310 | 1310 | 107 |
| Volume Left | 0 | 0 | 107 |
| Volume Right | 0 | 0 | 0 |
| cSH | 1700 | 1700 | 100 |
| Volume to Capacity | 0.77 | 0.77 | 1.07 |
| Queue Length 95th (ft) | 0 | 0 | 170 |
| Control Delay (s) | 0.0 | 0.0 | 189.0 |
| Lane LOS | | | F |
| Approach Delay (s) | 0.0 | | 189.0 |
| Approach LOS | | | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 7.4 | | |
| Intersection Capacity Utilization | 115.3% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.4 |

| Movement | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | ↑↑ | ↰ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 2357 | 96 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 2357 | 96 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 4 | 4 | 4 | 3 | 50 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 2619 | 107 | 0 |

| Major/Minor | Major2 | | Minor1 | |
|---|---|---|---|---|
| Conflicting Flow All | - | - | 1309 | - |
| Stage 1 | - | - | 0 | - |
| Stage 2 | - | - | 1309 | - |
| Critical Hdwy | - | - | 7.8 | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | 6.8 | - |
| Follow-up Hdwy | - | - | 4 | - |
| Pot Cap-1 Maneuver | 0 | - | ~ 100 | 0 |
| Stage 1 | 0 | - | - | 0 |
| Stage 2 | 0 | - | 144 | 0 |
| Platoon blocked, % | | - | | |
| Mov Cap-1 Maneuver | - | - | ~ 100 | - |
| Mov Cap-2 Maneuver | - | - | ~ 100 | - |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | 144 | - |

| Approach | SB | NW |
|---|---|---|
| HCM Control Delay, s | 0 | 188.3 |
| HCM LOS | | F |

| Minor Lane/Major Mvmt | NWLn1 | SBT |
|---|---|---|
| Capacity (veh/h) | 100 | - |
| HCM Lane V/C Ratio | 1.067 | - |
| HCM Control Delay (s) | 188.3 | - |
| HCM Lane LOS | F | - |
| HCM 95th %tile Q(veh) | 6.8 | - |

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

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 2432 | 13 | 13 | 0 |
| Future Volume (vph) | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 2432 | 13 | 13 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.865 | | | | | | 0.850 | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 1565 | 0 | 0 | 0 | 0 | 3471 | 1553 | 1719 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 1565 | 0 | 0 | 0 | 0 | 3471 | 1553 | 1719 | 0 |
| Link Speed (mph) | 35 | | | | 30 | | | 55 | | 25 | |
| Link Distance (ft) | 227 | | | | 766 | | | 154 | | 171 | |
| Travel Time (s) | 4.4 | | | | 17.4 | | | 1.9 | | 4.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 4% | 4% | 4% | 4% | 4% | 4% | 5% | 2% |
| Adj. Flow (vph) | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 2702 | 14 | 14 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 2702 | 14 | 14 | 0 |
| Sign Control | Stop | | | | Free | | | Free | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 77.2% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

| Movement | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 2432 | 13 | 13 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 2432 | 13 | 13 | 0 |
| Sign Control | Stop | | | | Free | | | Free | | Stop | |
| Grade | 0% | | | | 0% | | | 0% | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 2702 | 14 | 14 | 0 |
| Pedestrians | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | |
| Median type | | | | | None | | | None | | | |
| Median storage veh) | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | |
| vC, conflicting volume | 2709 | 2702 | 1351 | 2716 | | | 0 | | | 2716 | 0 |
| vC1, stage 1 conf vol | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | |
| vCu, unblocked vol | 2709 | 2702 | 1351 | 2716 | | | 0 | | | 2716 | 0 |
| tC, single (s) | 7.6 | 6.6 | 7.0 | 4.2 | | | 4.2 | | | 6.6 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | | 4.0 | 3.3 |
| p0 queue free % | 100 | 100 | 97 | 100 | | | 100 | | | 29 | 100 |
| cM capacity (veh/h) | 4 | 20 | 137 | 142 | | | 1607 | | | 20 | 1084 |

| Direction, Lane # | EB 1 | SB 1 | SB 2 | SB 3 | NW 1 |
|---|---|---|---|---|---|
| Volume Total | 4 | 1351 | 1351 | 14 | 14 |
| Volume Left | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 4 | 0 | 0 | 14 | 0 |
| cSH | 137 | 1700 | 1700 | 1700 | 20 |
| Volume to Capacity | 0.03 | 0.79 | 0.79 | 0.01 | 0.71 |
| Queue Length 95th (ft) | 2 | 0 | 0 | 0 | 49 |
| Control Delay (s) | 32.2 | 0.0 | 0.0 | 0.0 | 375.6 |
| Lane LOS | D | | | | F |
| Approach Delay (s) | 32.2 | 0.0 | | | 375.6 |
| Approach LOS | D | | | | F |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 2.0 | | | |
| Intersection Capacity Utilization | 77.2% | ICU Level of Service | D | |
| Analysis Period (min) | 15 | | | |

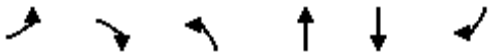
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBR | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2432 | 13 | 13 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 2432 | 13 | 13 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | - | - | - | None | - | - | None | - | None |
| Storage Length | - | 0 | - | - | - | - | - | 0 | 0 | - |
| Veh in Median Storage, # | 0 | - | - | - | - | - | 0 | - | 0 | - |
| Grade, % | 0 | - | - | 0 | - | - | 0 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 2702 | 14 | 14 | 0 |

| Major/Minor | Minor2 | | | | | Major2 | | | Minor1 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 1351 | | | | - | - | 0 | 1351 | - |
| Stage 1 | - | - | | | | - | - | - | 0 | - |
| Stage 2 | - | - | | | | - | - | - | 1351 | - |
| Critical Hdwy | - | 7 | | | | - | - | - | 7.6 | - |
| Critical Hdwy Stg 1 | - | - | | | | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | | | | - | - | - | 6.6 | - |
| Follow-up Hdwy | - | 3.35 | | | | - | - | - | 3.55 | - |
| Pot Cap-1 Maneuver | 0 | 137 | | | | 0 | - | - | 106 | 0 |
| Stage 1 | 0 | - | | | | 0 | - | - | - | 0 |
| Stage 2 | 0 | - | | | | 0 | - | - | 154 | 0 |
| Platoon blocked, % | | | | | | | - | - | | |
| Mov Cap-1 Maneuver | - | 137 | | | | - | - | - | 103 | - |
| Mov Cap-2 Maneuver | - | - | | | | - | - | - | 103 | - |
| Stage 1 | - | - | | | | - | - | - | - | - |
| Stage 2 | - | - | | | | - | - | - | 149 | - |

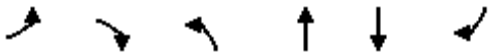
| Approach | EB | SB | NW |
|---|---|---|---|
| HCM Control Delay, s | 32.2 | 0 | 45.6 |
| HCM LOS | D | | E |

| Minor Lane/Major Mvmt | NWLn1 | EBLn1 | SBT | SBR |
|---|---|---|---|---|
| Capacity (veh/h) | 103 | 137 | - | - |
| HCM Lane V/C Ratio | 0.14 | 0.032 | - | - |
| HCM Control Delay (s) | 45.6 | 32.2 | - | - |
| HCM Lane LOS | E | D | - | - |
| HCM 95th %tile Q(veh) | 0.5 | 0.1 | - | - |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 4 | 0 | 0 | 1646 | 0 | 0 |
| Future Volume (vph) | 4 | 0 | 0 | 1646 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 0 | 0 | 4988 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 0 | 0 | 4988 | 0 | 0 |
| Link Speed (mph) | 25 | | | 55 | 55 | |
| Link Distance (ft) | 57 | | | 2226 | 645 | |
| Travel Time (s) | 1.6 | | | 27.6 | 8.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 4 | 0 | 0 | 1829 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 4 | 0 | 0 | 1829 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 41.8% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 4 | 0 | 0 | 1646 | 0 | 0 |
| Future Volume (Veh/h) | 4 | 0 | 0 | 1646 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 4 | 0 | 0 | 1829 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 610 | 0 | 0 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 610 | 0 | 0 | | | |
| tC, single (s) | 6.9 | 6.9 | 4.2 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 99 | 100 | 100 | | | |
| cM capacity (veh/h) | 422 | 1084 | 1607 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | NB 3 |
|---|---|---|---|---|
| Volume Total | 4 | 610 | 610 | 610 |
| Volume Left | 4 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 |
| cSH | 422 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.01 | 0.36 | 0.36 | 0.36 |
| Queue Length 95th (ft) | 1 | 0 | 0 | 0 |
| Control Delay (s) | 13.6 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | |
| Approach Delay (s) | 13.6 | 0.0 | | |
| Approach LOS | B | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 41.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 4 | 0 | 0 | 1646 | 0 | 0 |
| Future Vol, veh/h | 4 | 0 | 0 | 1646 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | - | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 4 | 2 | 4 | 4 | 4 | 4 |
| Mvmt Flow | 4 | 0 | 0 | 1829 | 0 | 0 |

| Major/Minor | Minor2 | | Major1 | |
|---|---|---|---|---|
| Conflicting Flow All | 732 | - | - | 0 |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 732 | - | - | - |
| Critical Hdwy | 5.78 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | 6.08 | - | - | - |
| Follow-up Hdwy | 3.84 | - | - | - |
| Pot Cap-1 Maneuver | 417 | 0 | 0 | - |
| Stage 1 | - | 0 | 0 | - |
| Stage 2 | 392 | 0 | 0 | - |
| Platoon blocked, % | | | | - |
| Mov Cap-1 Maneuver | 417 | - | - | - |
| Mov Cap-2 Maneuver | 417 | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | 392 | - | - | - |

| Approach | EB | NB |
|---|---|---|
| HCM Control Delay, s | 13.7 | 0 |
| HCM LOS | B | |

| Minor Lane/Major Mvmt | NBT | EBLn1 |
|---|---|---|
| Capacity (veh/h) | - | 417 |
| HCM Lane V/C Ratio | - | 0.011 |
| HCM Control Delay (s) | - | 13.7 |
| HCM Lane LOS | - | B |
| HCM 95th %tile Q(veh) | - | 0 |

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 96 | 1574 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 96 | 1574 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 300 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 0 | 0 |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1203 | 3471 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1203 | 3471 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 55 | 55 | | 30 | |
| Link Distance (ft) | | 676 | 1243 | | 102 | |
| Travel Time (s) | | 8.4 | 15.4 | | 2.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 50% | 4% | 4% | 4% | 2% | 2% |
| Adj. Flow (vph) | 107 | 1749 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 107 | 1749 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 115.3% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 8 | 2445 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 8 | 2445 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 400 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 50 | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1612 | 3471 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1612 | 3471 | 0 | 0 |
| Link Speed (mph) | 30 | | | 55 | 30 | |
| Link Distance (ft) | 154 | | | 653 | 124 | |
| Travel Time (s) | 3.5 | | | 8.1 | 2.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 12% | 4% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 9 | 2717 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 9 | 2717 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 77.1% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | SEL | SET | NWT | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 4 | 2434 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 4 | 2434 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 250 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 50 | | 50 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1736 | 3471 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1736 | 3471 | 0 | 0 |
| Link Speed (mph) | 30 | | | 55 | 30 | |
| Link Distance (ft) | 57 | | | 766 | 2189 | |
| Travel Time (s) | 1.3 | | | 9.5 | 49.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 4 | 2704 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 4 | 2704 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 51.0% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 13 | 1634 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 13 | 1634 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 250 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 0 | 0 |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 4988 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 4988 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 55 | 55 | | 25 | |
| Link Distance (ft) | | 645 | 200 | | 171 | |
| Travel Time (s) | | 8.0 | 2.5 | | 4.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 2% | 2% |
| Adj. Flow (vph) | 14 | 1816 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 14 | 1816 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 77.9% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

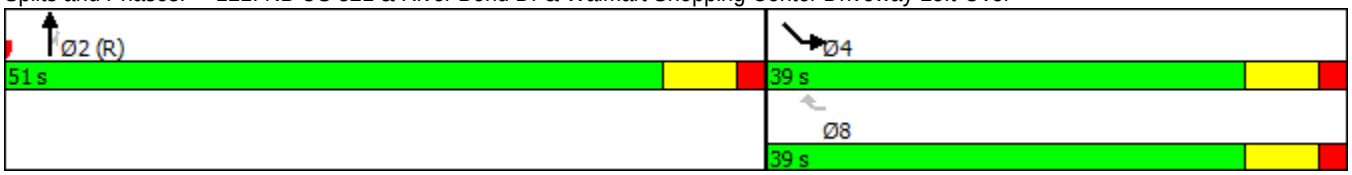
Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 948 | 0 | 1240 | 404 | 0 | 0 | 0 | 409 | 0 |
| Future Volume (vph) | 0 | 0 | 948 | 0 | 1240 | 404 | 0 | 0 | 0 | 409 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 0.76 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 3610 | 0 | 3471 | 1553 | 0 | 0 | 0 | 3367 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 3610 | 0 | 3471 | 1553 | 0 | 0 | 0 | 3367 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 489 | | | | 152 | | | 678 | | 131 | |
| Travel Time (s) | 9.5 | | | | 1.9 | | | 8.4 | | 3.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 4% | 4% | 4% | 4% | 4% | 4% | 2% |
| Adj. Flow (vph) | 0 | 0 | 1053 | 0 | 1378 | 449 | 0 | 0 | 0 | 454 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 1053 | 0 | 1378 | 449 | 0 | 0 | 0 | 454 | 0 |
| Turn Type | | | Perm | | NA | Perm | | | | Prot | |
| Protected Phases | | | | | 2 | | | | | 4 | |
| Permitted Phases | | | 8 | | | 2 | | | | | |
| Detector Phase | | | 8 | | 2 | 2 | | | | 4 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 14.0 | 14.0 | | | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 21.0 | 21.0 | | | | 14.0 | |
| Total Split (s) | | | 39.0 | | 51.0 | 51.0 | | | | 39.0 | |
| Total Split (%) | | | 43.3% | | 56.7% | 56.7% | | | | 43.3% | |
| Maximum Green (s) | | | 32.0 | | 44.0 | 44.0 | | | | 32.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | 5.0 | | | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | 2.0 | | | | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | -2.0 | -2.0 | | | | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | 5.0 | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | 3.0 | | | | 3.0 | |
| Recall Mode | | | None | | C-Min | C-Min | | | | None | |
| Act Effct Green (s) | | | 32.4 | | 47.6 | 47.6 | | | | 32.4 | |
| Actuated g/C Ratio | | | 0.36 | | 0.53 | 0.53 | | | | 0.36 | |
| v/c Ratio | | | 0.81 | | 0.75 | 0.55 | | | | 0.38 | |
| Control Delay | | | 31.7 | | 10.7 | 8.6 | | | | 18.7 | |
| Queue Delay | | | 0.0 | | 0.0 | 0.0 | | | | 0.0 | |
| Total Delay | | | 31.7 | | 10.7 | 8.6 | | | | 18.7 | |
| LOS | | | C | | B | A | | | | B | |
| Approach Delay | 31.7 | | | | 10.2 | | | | | 18.7 | |
| Approach LOS | C | | | | B | | | | | B | |
| Queue Length 50th (ft) | | | 226 | | 216 | 80 | | | | 70 | |
| Queue Length 95th (ft) | | | 292 | | 271 | 145 | | | | m96 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 409 | | | | 72 | | | 598 | | 51 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 1363 | | 1837 | 821 | | | | 1271 | |
| Starvation Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Reduced v/c Ratio | | | 0.77 | | 0.75 | 0.55 | | | | 0.36 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 55 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.81 | | | |
| Intersection Signal Delay: 18.1 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 121: NB US 321 & River Bend Dr & Walmart Shopping Center Driveway Left-Over

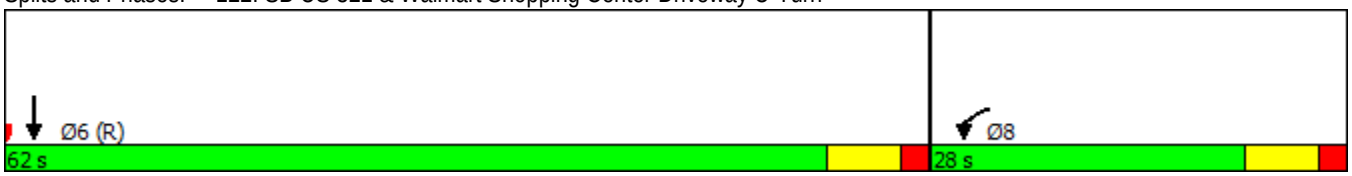


| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 543 | 0 | 0 | 0 | 0 | 2354 |
| Future Volume (vph) | 543 | 0 | 0 | 0 | 0 | 2354 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 250 | |
| Storage Lanes | 2 | 0 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 3367 | 0 | 0 | 0 | 0 | 4988 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 3367 | 0 | 0 | 0 | 0 | 4988 |
| Right Turn on Red | No | No | | No | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 55 | | | 55 |
| Link Distance (ft) | 118 | | 659 | | | 370 |
| Travel Time (s) | 3.2 | | 8.2 | | | 4.6 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 2% | 2% | 4% |
| Adj. Flow (vph) | 603 | 0 | 0 | 0 | 0 | 2616 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 603 | 0 | 0 | 0 | 0 | 2616 |
| Turn Type | Prot | | | | | NA |
| Protected Phases | 8 | | | | | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | 8 | | | | | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 14.0 | | | | | 14.0 |
| Minimum Split (s) | 21.0 | | | | | 21.0 |
| Total Split (s) | 28.0 | | | | | 62.0 |
| Total Split (%) | 31.1% | | | | | 68.9% |
| Maximum Green (s) | 21.0 | | | | | 55.0 |
| Yellow Time (s) | 5.0 | | | | | 5.0 |
| All-Red Time (s) | 2.0 | | | | | 2.0 |
| Lost Time Adjust (s) | -2.0 | | | | | -2.0 |
| Total Lost Time (s) | 5.0 | | | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | | | | 3.0 |
| Recall Mode | None | | | | | C-Min |
| Act Effct Green (s) | 21.6 | | | | | 58.4 |
| Actuated g/C Ratio | 0.24 | | | | | 0.65 |
| v/c Ratio | 0.75 | | | | | 0.81 |
| Control Delay | 33.3 | | | | | 13.8 |
| Queue Delay | 0.0 | | | | | 0.0 |
| Total Delay | 33.3 | | | | | 13.8 |
| LOS | C | | | | | B |
| Approach Delay | 33.3 | | | | | 13.8 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Approach LOS | C | | | | | B |
| Queue Length 50th (ft) | 141 | | | | | 357 |
| Queue Length 95th (ft) | 211 | | | | | 451 |
| Internal Link Dist (ft) | 38 | | 579 | | | 290 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | 860 | | | | | 3236 |
| Starvation Cap Reductn | 0 | | | | | 0 |
| Spillback Cap Reductn | 0 | | | | | 0 |
| Storage Cap Reductn | 0 | | | | | 0 |
| Reduced v/c Ratio | 0.70 | | | | | 0.81 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 36 (40%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.81 | | | |
| Intersection Signal Delay: 17.5 | | Intersection LOS: B | |
| Intersection Capacity Utilization 98.5% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Splits and Phases: 122: SB US 321 & Walmart Shopping Center Driveway U-Turn



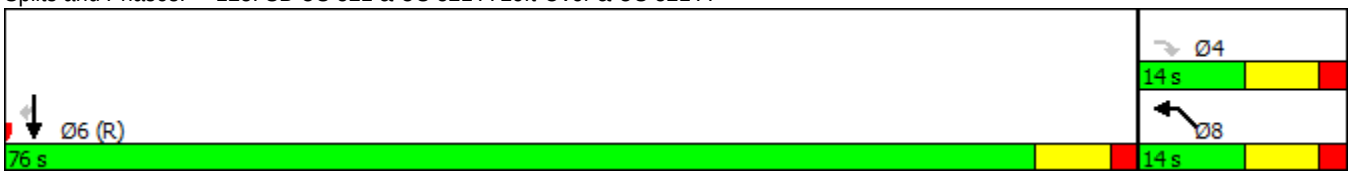
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 184 | 0 | 0 | 0 | 0 | 2353 | 135 | 22 | 0 |
| Future Volume (vph) | 0 | 0 | 184 | 0 | 0 | 0 | 0 | 2353 | 135 | 22 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 350 | | 0 | | 0 | 0 | | 0 | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 0 | 0 | | 1 | 1 | 0 |
| Taper Length (ft) | 50 | | | 50 | | | 50 | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | | | | 0.850 | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2760 | 0 | 0 | 0 | 0 | 3471 | 1553 | 1736 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2760 | 0 | 0 | 0 | 0 | 3471 | 1553 | 1736 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 456 | | | | 1044 | | | 127 | | 156 | |
| Travel Time (s) | 8.9 | | | | 12.9 | | | 1.6 | | 4.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 2% | 2% | 2% | 2% | 4% | 4% | 4% | 2% |
| Adj. Flow (vph) | 0 | 0 | 204 | 0 | 0 | 0 | 0 | 2614 | 150 | 24 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 204 | 0 | 0 | 0 | 0 | 2614 | 150 | 24 | 0 |
| Turn Type | | | Perm | | | | | NA | Perm | Prot | |
| Protected Phases | | | | | | | | 6 | | 8 | |
| Permitted Phases | | | 4 | | | | | | 6 | | |
| Detector Phase | | | 4 | | | | | 6 | 6 | 8 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | | | | 14.0 | 14.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 21.0 | 21.0 | 14.0 | |
| Total Split (s) | | | 14.0 | | | | | 76.0 | 76.0 | 14.0 | |
| Total Split (%) | | | 15.6% | | | | | 84.4% | 84.4% | 15.6% | |
| Maximum Green (s) | | | 7.0 | | | | | 69.0 | 69.0 | 7.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | | | | -2.0 | -2.0 | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | |
| Recall Mode | | | None | | | | | C-Min | C-Min | None | |
| Act Effct Green (s) | | | 9.0 | | | | | 71.0 | 71.0 | 9.0 | |
| Actuated g/C Ratio | | | 0.10 | | | | | 0.79 | 0.79 | 0.10 | |
| v/c Ratio | | | 0.74 | | | | | 0.95 | 0.12 | 0.14 | |
| Control Delay | | | 56.7 | | | | | 12.1 | 1.4 | 34.2 | |
| Queue Delay | | | 0.0 | | | | | 0.0 | 0.0 | 0.0 | |
| Total Delay | | | 56.7 | | | | | 12.1 | 1.4 | 34.2 | |
| LOS | | | E | | | | | B | A | C | |
| Approach Delay | 56.7 | | | | | | | 11.5 | | 34.2 | |

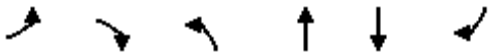
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | E | | | | | | | B | | C | |
| Queue Length 50th (ft) | | | 65 | | | | | 154 | 10 | 11 | |
| Queue Length 95th (ft) | | | #122 | | | | | #926 | m10 | m20 | |
| Internal Link Dist (ft) | 376 | | | | 964 | | | 47 | | 76 | |
| Turn Bay Length (ft) | | | 350 | | | | | | | | |
| Base Capacity (vph) | | | 276 | | | | | 2738 | 1225 | 173 | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Reduced v/c Ratio | | | 0.74 | | | | | 0.95 | 0.12 | 0.14 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 32 (36%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.95 | | | |
| Intersection Signal Delay: 14.8 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

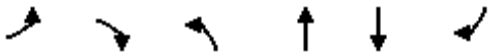
Splits and Phases: 123: SB US 321 & US 321 A Left-Over & US 321 A





| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 147 | 0 | 0 | 1519 | 0 | 0 |
| Future Volume (vph) | 147 | 0 | 0 | 1519 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 0 | 0 | 3471 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 0 | 0 | 3471 | 0 | 0 |
| Link Speed (mph) | 25 | | | 55 | 55 | |
| Link Distance (ft) | 85 | | | 1243 | 972 | |
| Travel Time (s) | 2.3 | | | 15.4 | 12.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 163 | 0 | 0 | 1688 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 163 | 0 | 0 | 1688 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 56.8% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 147 | 0 | 0 | 1519 | 0 | 0 |
| Future Volume (Veh/h) | 147 | 0 | 0 | 1519 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 163 | 0 | 0 | 1688 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 844 | 0 | 0 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 844 | 0 | 0 | | | |
| tC, single (s) | 6.9 | 6.9 | 4.2 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 45 | 100 | 100 | | | |
| cM capacity (veh/h) | 298 | 1084 | 1607 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 |
|---|---|---|---|
| Volume Total | 163 | 844 | 844 |
| Volume Left | 163 | 0 | 0 |
| Volume Right | 0 | 0 | 0 |
| cSH | 298 | 1700 | 1700 |
| Volume to Capacity | 0.55 | 0.50 | 0.50 |
| Queue Length 95th (ft) | 77 | 0 | 0 |
| Control Delay (s) | 30.7 | 0.0 | 0.0 |
| Lane LOS | D | | |
| Approach Delay (s) | 30.7 | 0.0 | |
| Approach LOS | D | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.7 | | |
| Intersection Capacity Utilization | 56.8% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 2.7 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 147 | 0 | 0 | 1519 | 0 | 0 |
| Future Vol, veh/h | 147 | 0 | 0 | 1519 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | - | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 4 | 2 | 4 | 4 | 4 | 4 |
| Mvmt Flow | 163 | 0 | 0 | 1688 | 0 | 0 |

| Major/Minor | Minor2 | | Major1 | |
|---|---|---|---|---|
| Conflicting Flow All | 844 | - | - | 0 |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 844 | - | - | - |
| Critical Hdwy | 6.88 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.88 | - | - | - |
| Follow-up Hdwy | 3.54 | - | - | - |
| Pot Cap-1 Maneuver | 298 | 0 | 0 | - |
| Stage 1 | - | 0 | 0 | - |
| Stage 2 | 377 | 0 | 0 | - |
| Platoon blocked, % | | | | - |
| Mov Cap-1 Maneuver | 298 | - | - | - |
| Mov Cap-2 Maneuver | 298 | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | 377 | - | - | - |

| Approach | EB | NB |
|---|---|---|
| HCM Control Delay, s | 30.8 | 0 |
| HCM LOS | D | |

| Minor Lane/Major Mvmt | NBT | EBLn1 |
|---|---|---|
| Capacity (veh/h) | - | 298 |
| HCM Lane V/C Ratio | - | 0.548 |
| HCM Control Delay (s) | - | 30.8 |
| HCM Lane LOS | - | D |
| HCM 95th %tile Q(veh) | - | 3.1 |

| Lane Group | EBL | EBR | SET | SER | NWL | NWT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 543 | 1645 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 543 | 1645 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 500 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 | 0.95 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 3367 | 3471 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 3367 | 3471 |
| Link Speed (mph) | 55 | | 55 | | | 55 |
| Link Distance (ft) | 118 | | 483 | | | 678 |
| Travel Time (s) | 1.5 | | 6.0 | | | 8.4 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 603 | 1828 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 603 | 1828 |
| Sign Control | Stop | | Stop | | | Free |

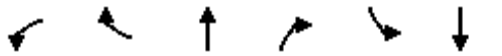
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 98.5% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 409 | 2488 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 409 | 2488 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 500 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 50 | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 3367 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 3367 | 4988 | 0 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 127 | | | 659 | 131 | |
| Travel Time (s) | 1.6 | | | 8.2 | 1.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 454 | 2764 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 454 | 2764 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 69.3% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 147 | 2390 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 147 | 2390 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 250 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1736 | 3471 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1736 | 3471 |
| Link Speed (mph) | 55 | | 30 | | | 55 |
| Link Distance (ft) | 85 | | 1220 | | | 1044 |
| Travel Time (s) | 1.1 | | 27.7 | | | 12.9 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 163 | 2656 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 163 | 2656 |
| Sign Control | Stop | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 66.8% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 22 | 1644 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 22 | 1644 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 500 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 0 | 0 |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 4988 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 4988 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 972 | 152 | | 156 | |
| Travel Time (s) | | 12.0 | 1.9 | | 1.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 24 | 1827 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 24 | 1827 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 91.9% | | ICU Level of Service F | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | EBL | EBR | SET | SER | NWL | NWT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 3094 | 0 | 0 | 0 | 2029 |
| Future Volume (vph) | 0 | 3094 | 0 | 0 | 0 | 2029 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.76 | 1.00 | 1.00 | 1.00 | 0.91 |
| Frt | | 0.850 | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 3541 | 0 | 0 | 0 | 4988 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 3541 | 0 | 0 | 0 | 4988 |
| Link Speed (mph) | 45 | | 45 | | | 45 |
| Link Distance (ft) | 960 | | 796 | | | 1065 |
| Travel Time (s) | 14.5 | | 12.1 | | | 16.1 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 2% | 2% | 4% | 4% |
| Adj. Flow (vph) | 0 | 3438 | 0 | 0 | 0 | 2254 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 3438 | 0 | 0 | 0 | 2254 |
| Sign Control | Free | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 75.5% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBR | SET | SER | NWL | NWT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 3094 | 0 | 2029 |
| Future Volume (vph) | 0 | 0 | 0 | 3094 | 0 | 2029 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.76 | 1.00 | 0.91 |
| Frt | | | | 0.850 | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 0 | 0 | 3541 | 0 | 4988 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 0 | 0 | 3541 | 0 | 4988 |
| Link Speed (mph) | 45 | | 45 | | | 45 |
| Link Distance (ft) | 641 | | 1065 | | | 717 |
| Travel Time (s) | 9.7 | | 16.1 | | | 10.9 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 3438 | 0 | 2254 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 3438 | 0 | 2254 |
| Sign Control | Stop | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 75.5% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

## Summary of All Intervals

| Run Number | 1 | 10 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| Start Time | 6:50 | 6:50 | 6:50 | 6:50 | 6:50 | 6:50 | 6:50 |
| End Time | 8:00 | 8:00 | 8:00 | 8:00 | 8:00 | 8:00 | 8:00 |
| Total Time (min) | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| Time Recorded (min) | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Vehs Entered | 7751 | 7868 | 7621 | 7724 | 7862 | 7719 | 7690 |
| Vehs Exited | 7633 | 7722 | 7496 | 7572 | 7738 | 7528 | 7548 |
| Starting Vehs | 701 | 682 | 682 | 677 | 685 | 658 | 656 |
| Ending Vehs | 819 | 828 | 807 | 829 | 809 | 849 | 798 |
| Denied Entry Before | 0 | 0 | 2 | 0 | 2 | 0 | 0 |
| Denied Entry After | 5 | 4 | 1 | 0 | 0 | 0 | 0 |
| Travel Distance (mi) | 23481 | 23624 | 23078 | 23531 | 23603 | 23248 | 22867 |
| Travel Time (hr) | 812.8 | 838.4 | 805.6 | 814.7 | 827.2 | 834.2 | 799.8 |
| Total Delay (hr) | 289.4 | 311.7 | 290.6 | 290.0 | 299.9 | 314.4 | 288.6 |
| Total Stops | 16624 | 17009 | 16127 | 16089 | 16923 | 17261 | 16123 |
| Fuel Used (gal) | 847.3 | 856.2 | 834.8 | 845.3 | 854.4 | 840.6 | 826.5 |

## Summary of All Intervals

| Run Number | 7 | 8 | 9 | Avg |
|---|---|---|---|---|
| Start Time | 6:50 | 6:50 | 6:50 | 6:50 |
| End Time | 8:00 | 8:00 | 8:00 | 8:00 |
| Total Time (min) | 70 | 70 | 70 | 70 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 7732 | 7706 | 7795 | 7743 |
| Vehs Exited | 7539 | 7479 | 7627 | 7590 |
| Starting Vehs | 668 | 680 | 669 | 669 |
| Ending Vehs | 861 | 907 | 837 | 828 |
| Denied Entry Before | 0 | 0 | 0 | 0 |
| Denied Entry After | 2 | 21 | 3 | 3 |
| Travel Distance (mi) | 23280 | 23109 | 23317 | 23314 |
| Travel Time (hr) | 840.5 | 825.1 | 797.1 | 819.5 |
| Total Delay (hr) | 321.2 | 308.8 | 276.3 | 299.1 |
| Total Stops | 17419 | 17363 | 15733 | 16664 |
| Fuel Used (gal) | 850.5 | 837.2 | 836.6 | 843.0 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 6:50 |
| End Time | 7:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:00 |
| End Time | 8:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 10 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| Vehs Entered | 7751 | 7868 | 7621 | 7724 | 7862 | 7719 | 7690 |
| Vehs Exited | 7633 | 7722 | 7496 | 7572 | 7738 | 7528 | 7548 |
| Starting Vehs | 701 | 682 | 682 | 677 | 685 | 658 | 656 |
| Ending Vehs | 819 | 828 | 807 | 829 | 809 | 849 | 798 |
| Denied Entry Before | 0 | 0 | 2 | 0 | 2 | 0 | 0 |
| Denied Entry After | 5 | 4 | 1 | 0 | 0 | 0 | 0 |
| Travel Distance (mi) | 23481 | 23624 | 23078 | 23531 | 23603 | 23248 | 22867 |
| Travel Time (hr) | 812.8 | 838.4 | 805.6 | 814.7 | 827.2 | 834.2 | 799.8 |
| Total Delay (hr) | 289.4 | 311.7 | 290.6 | 290.0 | 299.9 | 314.4 | 288.6 |
| Total Stops | 16624 | 17009 | 16127 | 16089 | 16923 | 17261 | 16123 |
| Fuel Used (gal) | 847.3 | 856.2 | 834.8 | 845.3 | 854.4 | 840.6 | 826.5 |

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 7:00 |
| End Time | 8:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 7 | 8 | 9 | Avg |
|---|---|---|---|---|
| Vehs Entered | 7732 | 7706 | 7795 | 7743 |
| Vehs Exited | 7539 | 7479 | 7627 | 7590 |
| Starting Vehs | 668 | 680 | 669 | 669 |
| Ending Vehs | 861 | 907 | 837 | 828 |
| Denied Entry Before | 0 | 0 | 0 | 0 |
| Denied Entry After | 2 | 21 | 3 | 3 |
| Travel Distance (mi) | 23280 | 23109 | 23317 | 23314 |
| Travel Time (hr) | 840.5 | 825.1 | 797.1 | 819.5 |
| Total Delay (hr) | 321.2 | 308.8 | 276.3 | 299.1 |
| Total Stops | 17419 | 17363 | 15733 | 16664 |
| Fuel Used (gal) | 850.5 | 837.2 | 836.6 | 843.0 |

## Total Network Performance By Run

| Run Number | 1 | 10 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| Denied Delay (hr) | 1.8 | 3.7 | 1.7 | 2.2 | 3.3 | 1.7 | 1.7 |
| Denied Del/Veh (s) | 0.8 | 1.7 | 0.8 | 1.0 | 1.5 | 0.8 | 0.8 |
| Total Delay (hr) | 287.6 | 307.9 | 288.9 | 287.9 | 296.7 | 312.8 | 286.9 |
| Total Del/Veh (s) | 122.5 | 129.7 | 125.2 | 123.4 | 125.0 | 134.4 | 123.8 |
| Stop Delay (hr) | 122.8 | 136.9 | 124.2 | 126.2 | 128.9 | 142.8 | 129.0 |
| Stop Del/Veh (s) | 52.3 | 57.7 | 53.8 | 54.1 | 54.3 | 61.4 | 55.7 |
| Total Stops | 16624 | 17009 | 16127 | 16089 | 16923 | 17261 | 16123 |
| Stop/Veh | 1.97 | 1.99 | 1.94 | 1.92 | 1.98 | 2.06 | 1.93 |
| Travel Dist (mi) | 23481.3 | 23623.6 | 23077.9 | 23531.1 | 23602.8 | 23248.5 | 22867.5 |
| Travel Time (hr) | 812.8 | 838.4 | 805.6 | 814.7 | 827.2 | 834.2 | 799.8 |
| Avg Speed (mph) | 29 | 28 | 29 | 29 | 29 | 28 | 29 |
| Vehicles Entered | 7751 | 7868 | 7621 | 7724 | 7862 | 7719 | 7690 |
| Vehicles Exited | 7633 | 7722 | 7496 | 7572 | 7738 | 7528 | 7548 |
| Hourly Exit Rate | 7633 | 7722 | 7496 | 7572 | 7738 | 7528 | 7548 |
| Input Volume | 162207 | 162207 | 162207 | 162207 | 162207 | 162207 | 162207 |
| % of Volume | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Denied Entry Before | 0 | 0 | 2 | 0 | 2 | 0 | 0 |
| Denied Entry After | 5 | 4 | 1 | 0 | 0 | 0 | 0 |

## Total Network Performance By Run

| Run Number | 7 | 8 | 9 | Avg |
|---|---|---|---|---|
| Denied Delay (hr) | 1.9 | 3.6 | 2.0 | 2.4 |
| Denied Del/Veh (s) | 0.9 | 1.7 | 0.9 | 1.1 |
| Total Delay (hr) | 319.3 | 305.3 | 274.2 | 296.8 |
| Total Del/Veh (s) | 136.8 | 131.0 | 116.6 | 126.9 |
| Stop Delay (hr) | 157.4 | 137.7 | 115.7 | 132.2 |
| Stop Del/Veh (s) | 67.5 | 59.1 | 49.2 | 56.5 |
| Total Stops | 17419 | 17363 | 15733 | 16664 |
| Stop/Veh | 2.07 | 2.07 | 1.86 | 1.98 |
| Travel Dist (mi) | 23280.0 | 23109.0 | 23316.5 | 23313.8 |
| Travel Time (hr) | 840.5 | 825.1 | 797.1 | 819.5 |
| Avg Speed (mph) | 28 | 28 | 29 | 29 |
| Vehicles Entered | 7732 | 7706 | 7795 | 7743 |
| Vehicles Exited | 7539 | 7479 | 7627 | 7590 |
| Hourly Exit Rate | 7539 | 7479 | 7627 | 7590 |
| Input Volume | 162207 | 162207 | 162207 | 162207 |
| % of Volume | 5 | 5 | 5 | 5 |
| Denied Entry Before | 0 | 0 | 0 | 0 |
| Denied Entry After | 2 | 21 | 3 | 3 |

## Intersection: 11: NB US 321 & 13th Street SW

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 15: NB US 321 & SB US 321

| Movement | NB | NB |
|---|---|---|
| Directions Served | T | T |
| Maximum Queue (ft) | 14 | 15 |
| Average Queue (ft) | 1 | 1 |
| 95th Queue (ft) | 12 | 14 |
| Link Distance (ft) | 1064 | 1064 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 21: SB US 321 & Main Avenue Drive NW

| Movement | EB | SB | SB |
|---|---|---|---|
| Directions Served | R | T | T |
| Maximum Queue (ft) | 130 | 3 | 3 |
| Average Queue (ft) | 51 | 0 | 0 |
| 95th Queue (ft) | 109 | 3 | 3 |
| Link Distance (ft) | 813 | 187 | 187 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 31: NB US 321 & 2nd Avenue NW & 2nd Avenue NW Left-Over

| Movement | WB | WB | NB | NB | NB | SE |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | R | L |
| Maximum Queue (ft) | 202 | 149 | 150 | 147 | 96 | 143 |
| Average Queue (ft) | 113 | 40 | 63 | 81 | 32 | 58 |
| 95th Queue (ft) | 184 | 114 | 121 | 134 | 74 | 118 |
| Link Distance (ft) | 208 | 208 | 79 | 79 | 79 | 89 |
| Upstream Blk Time (%) | 0 | | 2 | 5 | 1 | 5 |
| Queuing Penalty (veh) | 0 | | 14 | 30 | 5 | 5 |
| Storage Bay Dist (ft) | | | | | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 32: SB US 321 & 2nd Avenue NW U-Turn

| Movement | SB | SB | NW |
|---|---|---|---|
| Directions Served | T | T | L |
| Maximum Queue (ft) | 260 | 293 | 134 |
| Average Queue (ft) | 105 | 121 | 99 |
| 95th Queue (ft) | 208 | 225 | 140 |
| Link Distance (ft) | 652 | 652 | 42 |
| Upstream Blk Time (%) | | | 56 |
| Queuing Penalty (veh) | | | 96 |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 33: SB US 321 & 2nd Avenue NW Left -Over & 2nd Avenue NW

| Movement | EB | EB | SB | SB | SB | NW |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | R | L |
| Maximum Queue (ft) | 232 | 188 | 151 | 154 | 117 | 233 |
| Average Queue (ft) | 146 | 91 | 97 | 119 | 47 | 153 |
| 95th Queue (ft) | 212 | 177 | 160 | 163 | 100 | 235 |
| Link Distance (ft) | 549 | 549 | 74 | 74 | 74 | 146 |
| Upstream Blk Time (%) | | | 12 | 19 | 3 | 15 |
| Queuing Penalty (veh) | | | 86 | 138 | 25 | 37 |
| Storage Bay Dist (ft) | | | | | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 34: NB US 321 & 2nd Avenue NW U-Turn

| Movement | NB | NB | SE |
|---|---|---|---|
| Directions Served | T | T | L |
| Maximum Queue (ft) | 307 | 341 | 131 |
| Average Queue (ft) | 166 | 181 | 104 |
| 95th Queue (ft) | 273 | 294 | 132 |
| Link Distance (ft) | 981 | 981 | 38 |
| Upstream Blk Time (%) | | | 52 |
| Queuing Penalty (veh) | | | 127 |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 35: NB US 321 & 2nd Avenue NW U-Turn

| Movement | NB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 159 |
| Average Queue (ft) | 39 |
| 95th Queue (ft) | 115 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 400 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 36: SB US 321 & 2nd Avenue NW Left-Over

| Movement | SB | SB | SB | SB |
|---|---|---|---|---|
| Directions Served | L | T | T | T |
| Maximum Queue (ft) | 23 | 173 | 190 | 12 |
| Average Queue (ft) | 1 | 25 | 43 | 1 |
| 95th Queue (ft) | 11 | 106 | 131 | 13 |
| Link Distance (ft) | | 790 | 790 | 790 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | 300 | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 37: SB US 321 & 2nd Avenue NW U-Turn

| Movement | SB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 183 |
| Average Queue (ft) | 58 |
| 95th Queue (ft) | 142 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 300 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 38: NB US 321 & 2nd Avenue NW Left -Over

| Movement | NB | NB | NB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 130 | 41 | 46 |
| Average Queue (ft) | 15 | 1 | 2 |
| 95th Queue (ft) | 78 | 19 | 23 |
| Link Distance (ft) | | 687 | 687 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | 550 | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 43: SB US 321 & 7th Avenue NW Left-Over & 7th Avenue NW

| Movement | EB | SB | SB | SB | NW |
|---|---|---|---|---|---|
| Directions Served | > | T | T | R | L |
| Maximum Queue (ft) | 208 | 335 | 352 | 102 | 117 |
| Average Queue (ft) | 101 | 145 | 146 | 27 | 85 |
| 95th Queue (ft) | 182 | 270 | 276 | 72 | 121 |
| Link Distance (ft) | 347 | 1100 | 1100 | 1100 | 37 |
| Upstream Blk Time (%) | | | | | 45 |
| Queuing Penalty (veh) | | | | | 74 |
| Storage Bay Dist (ft) | | | | | |
| Storage Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |

## Intersection: 44: NB US 321 & 7th Avenue NW U-Turn

| Movement | NB | NB | SE |
|---|---|---|---|
| Directions Served | T | T | L |
| Maximum Queue (ft) | 165 | 176 | 105 |
| Average Queue (ft) | 44 | 53 | 49 |
| 95th Queue (ft) | 115 | 130 | 94 |
| Link Distance (ft) | 655 | 655 | 37 |
| Upstream Blk Time (%) | | | 39 |
| Queuing Penalty (veh) | | | 25 |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 47: SB US 321 & 7th Avenue NW U-Turn

| Movement | SB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 26 |
| Average Queue (ft) | 1 |
| 95th Queue (ft) | 16 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 300 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 48: NB US 321 & 7th Avenue NW Left-Over

| Movement | NB | NB | NB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 146 | 58 | 34 |
| Average Queue (ft) | 36 | 2 | 1 |
| 95th Queue (ft) | 109 | 46 | 33 |
| Link Distance (ft) | | 778 | 778 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | 150 | | |
| Storage Blk Time (%) | 0 | 0 | |
| Queuing Penalty (veh) | 4 | 0 | |

## Intersection: 61: NB US 321 & Clement Boulevard & Clement Boulevard Left-Over

| Movement | WB | WB | WB | NB | NB | NB | NB | SE | SE |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | > | > | > | T | T | T | R | L | L |
| Maximum Queue (ft) | 351 | 293 | 169 | 136 | 140 | 142 | 133 | 197 | 210 |
| Average Queue (ft) | 265 | 175 | 45 | 83 | 89 | 94 | 55 | 131 | 151 |
| 95th Queue (ft) | 365 | 276 | 126 | 140 | 141 | 147 | 127 | 200 | 214 |
| Link Distance (ft) | 335 | 335 | 335 | 34 | 34 | 34 | 34 | 88 | 88 |
| Upstream Blk Time (%) | 2 | 0 | | 38 | 41 | 40 | 9 | 19 | 26 |
| Queuing Penalty (veh) | 0 | 0 | | 153 | 165 | 160 | 38 | 95 | 125 |
| Storage Bay Dist (ft) | | | | | | | | | |
| Storage Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |

## Intersection: 62: SB US 321 & 13th Avenue Drive NW/Clement Boulevard U-Turn

| Movement | EB | WB | WB | SB | SB | SB |
|---|---|---|---|---|---|---|
| Directions Served | R | L | L | T | T | TR |
| Maximum Queue (ft) | 8 | 133 | 138 | 492 | 373 | 295 |
| Average Queue (ft) | 0 | 104 | 108 | 265 | 193 | 165 |
| 95th Queue (ft) | 8 | 138 | 142 | 426 | 310 | 256 |
| Link Distance (ft) | 202 | 36 | 36 | 845 | 845 | 845 |
| Upstream Blk Time (%) | | 70 | 69 | | | |
| Queuing Penalty (veh) | | 124 | 123 | | | |
| Storage Bay Dist (ft) | | | | | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 63: SB US 321 & Clement Boulevard Left-Over & Clement Boulevard

| Movement | EB | EB | SB | SB | SB | NW | NW |
|---|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | TR | < | L |
| Maximum Queue (ft) | 191 | 159 | 178 | 177 | 177 | 118 | 109 |
| Average Queue (ft) | 98 | 44 | 125 | 145 | 119 | 50 | 43 |
| 95th Queue (ft) | 168 | 127 | 182 | 189 | 178 | 97 | 87 |
| Link Distance (ft) | 834 | 834 | 49 | 49 | 49 | 58 | 58 |
| Upstream Blk Time (%) | | | 23 | 30 | 26 | 20 | 13 |
| Queuing Penalty (veh) | | | 188 | 241 | 209 | 13 | 8 |
| Storage Bay Dist (ft) | | | | | | | |
| Storage Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |

## Intersection: 64: NB US 321 & 9th Avenue NW & Clement Boulevard

| Movement | WB | WB | NB | NB | NB | SE |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | TR | <L |
| Maximum Queue (ft) | 167 | 107 | 249 | 221 | 244 | 167 |
| Average Queue (ft) | 80 | 20 | 128 | 114 | 135 | 123 |
| 95th Queue (ft) | 141 | 67 | 208 | 190 | 217 | 174 |
| Link Distance (ft) | 252 | | 1052 | 1052 | | 79 |
| Upstream Blk Time (%) | | | | | | 37 |
| Queuing Penalty (veh) | | | | | | 76 |
| Storage Bay Dist (ft) | | 250 | | | 375 | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 65: NB US 321 & Clement Boulevard U-Turn

| Movement | NW | NW |
|---|---|---|
| Directions Served | L | L |
| Maximum Queue (ft) | 102 | 106 |
| Average Queue (ft) | 24 | 22 |
| 95th Queue (ft) | 73 | 77 |
| Link Distance (ft) | | |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | 300 | 300 |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 66: SB US 321 & Clement Boulevard Left-Over

| Movement | SB | SB | SB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | L | L | T | T | T |
| Maximum Queue (ft) | 46 | 63 | 176 | 257 | 228 |
| Average Queue (ft) | 3 | 7 | 16 | 34 | 14 |
| 95th Queue (ft) | 20 | 34 | 103 | 153 | 127 |
| Link Distance (ft) | | | 809 | 809 | 809 |
| Upstream Blk Time (%) | | | 0 | | 0 |
| Queuing Penalty (veh) | | | 0 | | 0 |
| Storage Bay Dist (ft) | 400 | 400 | | | |
| Storage Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |

## Intersection: 67: SB US 321 & Clement Boulevard

| Movement | SB | SB |
|---|---|---|
| Directions Served | L | T |
| Maximum Queue (ft) | 86 | 64 |
| Average Queue (ft) | 13 | 2 |
| 95th Queue (ft) | 52 | 63 |
| Link Distance (ft) | | 748 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | 200 | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 68: NB US 321 & Clement Boulevard Left-Over

| Movement | NB | NB | NB | NB | NB |
|---|---|---|---|---|---|
| Directions Served | L | T | T | T | T |
| Maximum Queue (ft) | 4 | 112 | 126 | 129 | 72 |
| Average Queue (ft) | 0 | 13 | 13 | 18 | 4 |
| 95th Queue (ft) | 4 | 62 | 66 | 75 | 33 |
| Link Distance (ft) | | 767 | 767 | 767 | |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (ft) | 400 | | | | 400 |
| Storage Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |

## Intersection: 81: NB US 321 & 15th Avenue NW & 15th Avenue NW Left-Over

| Movement | WB | WB | NB | NB | NB | SE |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | TR | L |
| Maximum Queue (ft) | 93 | 29 | 154 | 172 | 180 | 161 |
| Average Queue (ft) | 37 | 4 | 73 | 79 | 97 | 72 |
| 95th Queue (ft) | 76 | 20 | 131 | 145 | 171 | 130 |
| Link Distance (ft) | 410 | 410 | 100 | 100 | 100 | 133 |
| Upstream Blk Time (%) | | | 2 | 2 | 5 | 1 |
| Queuing Penalty (veh) | | | 13 | 15 | 34 | 1 |
| Storage Bay Dist (ft) | | | | | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 82: SB US 321 & 15th Avenue NW U-Turn

| Movement | WB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 67 |
| Average Queue (ft) | 18 |
| 95th Queue (ft) | 53 |
| Link Distance (ft) | 31 |
| Upstream Blk Time (%) | 20 |
| Queuing Penalty (veh) | 4 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 83: SB US 321 & 15th Avenue NW Left-Over & 20th Avenue NW/15th Avenue NW

| Movement | EB | SB | SB | NW |
|---|---|---|---|---|
| Directions Served | > | T | TR | L |
| Maximum Queue (ft) | 106 | 6 | 4 | 140 |
| Average Queue (ft) | 37 | 0 | 0 | 62 |
| 95th Queue (ft) | 109 | 5 | 4 | 154 |
| Link Distance (ft) | 502 | 158 | 158 | 114 |
| Upstream Blk Time (%) | | | | 21 |
| Queuing Penalty (veh) | | | | 4 |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 84: NB US 321 & 15th Avenue NW U-Turn

| Movement | EB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 41 |
| Average Queue (ft) | 11 |
| 95th Queue (ft) | 34 |
| Link Distance (ft) | -1 |
| Upstream Blk Time (%) | 3 |
| Queuing Penalty (veh) | 0 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 85: NB US 321 & 15th Avenue NW U-Turn

| Movement | NB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 10 |
| Average Queue (ft) | 0 |
| 95th Queue (ft) | 8 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 200 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 86: SB US 321 & 15th Avenue NW Left-Over

| Movement | |
|---|---|
| Directions Served | |
| Maximum Queue (ft) | |
| Average Queue (ft) | |
| 95th Queue (ft) | |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 87: SB US 321 & 15th Avenue NW U-Turn

| Movement | |
|---|---|
| Directions Served | |
| Maximum Queue (ft) | |
| Average Queue (ft) | |
| 95th Queue (ft) | |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 88: NB US 321 & 15th Avenue NW Left-Over

| Movement | NW | NW | NW | NW |
|---|---|---|---|---|
| Directions Served | L | T | T | T |
| Maximum Queue (ft) | 16 | 6 | 25 | 43 |
| Average Queue (ft) | 6 | 0 | 1 | 3 |
| 95th Queue (ft) | 44 | 5 | 14 | 24 |
| Link Distance (ft) | | 664 | 664 | 664 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | 200 | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 91: US 321 & Grace Chapel Road

| Movement | WB | WB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | R | R | T | T | T | T | T | T |
| Maximum Queue (ft) | 211 | 246 | 58 | 29 | 227 | 245 | 189 | 140 | 150 | 159 |
| Average Queue (ft) | 118 | 163 | 21 | 3 | 109 | 131 | 98 | 109 | 126 | 131 |
| 95th Queue (ft) | 203 | 228 | 50 | 18 | 192 | 211 | 166 | 159 | 154 | 149 |
| Link Distance (ft) | | 910 | 910 | | 580 | 580 | 580 | 73 | 73 | 73 |
| Upstream Blk Time (%) | | | | | | | | 11 | 18 | 22 |
| Queuing Penalty (veh) | | | | | | | | 98 | 160 | 203 |
| Storage Bay Dist (ft) | 500 | | | 500 | | | | | | |
| Storage Blk Time (%) | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | |

## Intersection: 92: Grace Chapel Road U-Turn & SB US 321

| Movement | WB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 21 |
| Average Queue (ft) | 3 |
| 95th Queue (ft) | 14 |
| Link Distance (ft) | 13 |
| Upstream Blk Time (%) | 3 |
| Queuing Penalty (veh) | 0 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 93: NB US 321 & Grace Chapel Road U-Turn

| Movement | EB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 47 |
| Average Queue (ft) | 16 |
| 95th Queue (ft) | 43 |
| Link Distance (ft) | 82 |
| Upstream Blk Time (%) | 0 |
| Queuing Penalty (veh) | 0 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 94: NB US 321 & Grace Chapel Road U-Turn

| Movement | NB |
|---|---|
| Directions Served | T |
| Maximum Queue (ft) | 2 |
| Average Queue (ft) | 0 |
| 95th Queue (ft) | 2 |
| Link Distance (ft) | 314 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 95: SB US 321 & Grace Chapel Road U-Turn

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 96: SB US 321/US 321 & NB US 321

| Movement | SB | SB | SB |
|---|---|---|---|
| Directions Served | T | T | T |
| Maximum Queue (ft) | 119 | 286 | 175 |
| Average Queue (ft) | 4 | 13 | 6 |
| 95th Queue (ft) | 81 | 155 | 102 |
| Link Distance (ft) | 580 | 580 | 580 |
| Upstream Blk Time (%) | 0 | 0 | 0 |
| Queuing Penalty (veh) | 0 | 0 | 0 |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 97: US 321 & NB US 321

| Movement | SE | SE | SE |
|---|---|---|---|
| Directions Served | R | R | R |
| Maximum Queue (ft) | 95 | 148 | 125 |
| Average Queue (ft) | 22 | 43 | 55 |
| 95th Queue (ft) | 71 | 106 | 107 |
| Link Distance (ft) | 375 | 375 | 375 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 101: NB US 321 & Alex Lee Blvd & Alex Lee Blvd Left-Over

| Movement | WB | WB | NB | NB | NB | SE |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | R | L |
| Maximum Queue (ft) | 186 | 145 | 175 | 185 | 60 | 46 |
| Average Queue (ft) | 71 | 37 | 70 | 91 | 10 | 6 |
| 95th Queue (ft) | 152 | 102 | 161 | 183 | 39 | 27 |
| Link Distance (ft) | 621 | 621 | 95 | 95 | 95 | 30 |
| Upstream Blk Time (%) | | | 7 | 9 | 0 | 6 |
| Queuing Penalty (veh) | | | 36 | 52 | 0 | 0 |
| Storage Bay Dist (ft) | | | | | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 102: SB US 321 & Alex Lee Blvd U-Turn

| Movement | SB | NW |
|---|---|---|
| Directions Served | T | L |
| Maximum Queue (ft) | 6 | 168 |
| Average Queue (ft) | 0 | 128 |
| 95th Queue (ft) | 5 | 185 |
| Link Distance (ft) | 1163 | 47 |
| Upstream Blk Time (%) | | 83 |
| Queuing Penalty (veh) | | 80 |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 103: SB US 321 & Alex Lee Blvd Left-Over & Alex Lee Blvd

| Movement | EB | SB | NW |
|---|---|---|---|
| Directions Served | > | R | L |
| Maximum Queue (ft) | 22 | 2 | 96 |
| Average Queue (ft) | 2 | 0 | 35 |
| 95th Queue (ft) | 13 | 2 | 111 |
| Link Distance (ft) | 164 | 84 | 102 |
| Upstream Blk Time (%) | | | 10 |
| Queuing Penalty (veh) | | | 1 |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 104: NB US 321 & Alex Lee Blvd U-Turn

| Movement | EB | NB | NB | NB |
|---|---|---|---|---|
| Directions Served | L | T | T | T |
| Maximum Queue (ft) | 26 | 52 | 52 | 52 |
| Average Queue (ft) | 4 | 9 | 10 | 4 |
| 95th Queue (ft) | 18 | 100 | 105 | 70 |
| Link Distance (ft) | 4 | 2164 | 2164 | 2164 |
| Upstream Blk Time (%) | 2 | | | |
| Queuing Penalty (veh) | 0 | | | |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 105: NB US 321 & Alex Lee Blvd U-Turn

| Movement | NB | NB | NB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 324 | 382 | 329 |
| Average Queue (ft) | 160 | 95 | 77 |
| 95th Queue (ft) | 371 | 423 | 395 |
| Link Distance (ft) | | 571 | 571 |
| Upstream Blk Time (%) | | 2 | 1 |
| Queuing Penalty (veh) | | 16 | 12 |
| Storage Bay Dist (ft) | 300 | | |
| Storage Blk Time (%) | 17 | 0 | |
| Queuing Penalty (veh) | 131 | 0 | |

## Intersection: 106: SB US 321 & Alex Lee Blvd Left-Over

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 107: SB US 321 & Alex Lee Blvd U-Turn

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 108: NB US 321 & Alex Lee Blvd Left-Over

| Movement | NB | NB | NB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 30 | 105 | 130 |
| Average Queue (ft) | 3 | 29 | 31 |
| 95th Queue (ft) | 44 | 225 | 229 |
| Link Distance (ft) | | 590 | 590 |
| Upstream Blk Time (%) | | 1 | 1 |
| Queuing Penalty (veh) | | 4 | 5 |
| Storage Bay Dist (ft) | 250 | | |
| Storage Blk Time (%) | | 3 | |
| Queuing Penalty (veh) | | 0 | |

## Intersection: 121: NB US 321 & River Bend Dr & Walmart Shopping Center Driveway Left-Over

| Movement | WB | WB | WB | NB | NB | NB | SE | SE |
|---|---|---|---|---|---|---|---|---|
| Directions Served | > | > | > | T | T | R | L | L |
| Maximum Queue (ft) | 283 | 334 | 216 | 161 | 180 | 173 | 113 | 127 |
| Average Queue (ft) | 159 | 216 | 125 | 104 | 153 | 128 | 63 | 74 |
| 95th Queue (ft) | 262 | 307 | 211 | 166 | 176 | 181 | 110 | 120 |
| Link Distance (ft) | 428 | 428 | 428 | 66 | 66 | 66 | 25 | 25 |
| Upstream Blk Time (%) | | | | 20 | 41 | 29 | 39 | 50 |
| Queuing Penalty (veh) | | | | 107 | 227 | 160 | 81 | 102 |
| Storage Bay Dist (ft) | | | | | | | | |
| Storage Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |

## Intersection: 122: SB US 321 & Walmart Shopping Center Driveway U-Turn

| Movement | WB | WB | SB | SB | SB | B993 | B993 |
|---|---|---|---|---|---|---|---|
| Directions Served | L | L | T | T | T | T | T |
| Maximum Queue (ft) | 123 | 159 | 298 | 354 | 368 | 40 | 42 |
| Average Queue (ft) | 66 | 132 | 208 | 248 | 254 | 2 | 3 |
| 95th Queue (ft) | 117 | 147 | 323 | 333 | 351 | 26 | 29 |
| Link Distance (ft) | 30 | 30 | | 321 | 321 | 410 | 410 |
| Upstream Blk Time (%) | 49 | 75 | | 1 | 2 | | |
| Queuing Penalty (veh) | 133 | 204 | | 11 | 17 | | |
| Storage Bay Dist (ft) | | | 250 | | | | |
| Storage Blk Time (%) | | | 2 | 7 | | | |
| Queuing Penalty (veh) | | | 17 | 51 | | | |

## Intersection: 123: SB US 321 & US 321 A Left-Over & US 321 A

| Movement | EB | EB | SB | SB | SB | NW |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | R | L |
| Maximum Queue (ft) | 233 | 189 | 164 | 158 | 80 | 62 |
| Average Queue (ft) | 136 | 67 | 117 | 124 | 29 | 16 |
| 95th Queue (ft) | 215 | 185 | 169 | 165 | 66 | 47 |
| Link Distance (ft) | 394 | | 32 | 32 | 32 | 77 |
| Upstream Blk Time (%) | | | 19 | 19 | 8 | 0 |
| Queuing Penalty (veh) | | | 155 | 160 | 70 | 0 |
| Storage Bay Dist (ft) | | 350 | | | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 124: NB US 321 & US 321 A U-Turn

| Movement | EB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 116 |
| Average Queue (ft) | 77 |
| 95th Queue (ft) | 115 |
| Link Distance (ft) | 30 |
| Upstream Blk Time (%) | 74 |
| Queuing Penalty (veh) | 108 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 125: NB US 321 & Walmart Shopping Center Driveway U-Turn

| Movement | NW | NW | NW |
|---|---|---|---|
| Directions Served | L | L | T |
| Maximum Queue (ft) | 443 | 452 | 35 |
| Average Queue (ft) | 145 | 240 | 1 |
| 95th Queue (ft) | 394 | 449 | 34 |
| Link Distance (ft) | | 601 | 601 |
| Upstream Blk Time (%) | | 0 | |
| Queuing Penalty (veh) | | 1 | |
| Storage Bay Dist (ft) | 500 | | |
| Storage Blk Time (%) | 0 | 1 | |
| Queuing Penalty (veh) | 1 | 3 | |

## Intersection: 126: SB US 321 & Walmart Shopping Center Driveway Left-Over

| Movement | SB | SB | SB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | L | L | T | T | T |
| Maximum Queue (ft) | 14 | 36 | 346 | 352 | 60 |
| Average Queue (ft) | 1 | 2 | 54 | 69 | 2 |
| 95th Queue (ft) | 12 | 17 | 208 | 206 | 42 |
| Link Distance (ft) | | 591 | 591 | 591 | |
| Upstream Blk Time (%) | | | 0 | 0 | |
| Queuing Penalty (veh) | | | 0 | 0 | |
| Storage Bay Dist (ft) | 500 | | | | 250 |
| Storage Blk Time (%) | | | | 0 | |
| Queuing Penalty (veh) | | | | 3 | |

## Intersection: 127: SB US 321 & US 321 A U-Turn

| Movement | SB | SB | SB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 191 | 190 | 167 |
| Average Queue (ft) | 55 | 18 | 14 |
| 95th Queue (ft) | 178 | 190 | 178 |
| Link Distance (ft) | | 984 | 984 |
| Upstream Blk Time (%) | | 0 | 0 |
| Queuing Penalty (veh) | | 0 | 0 |
| Storage Bay Dist (ft) | 250 | | |
| Storage Blk Time (%) | 3 | 0 | |
| Queuing Penalty (veh) | 38 | 0 | |

## Intersection: 128: NB US 321 & US 321 A Left-Over

| Movement | NB | NB | NB | NB |
|---|---|---|---|---|
| Directions Served | L | T | T | T |
| Maximum Queue (ft) | 55 | 472 | 492 | 183 |
| Average Queue (ft) | 4 | 124 | 206 | 24 |
| 95th Queue (ft) | 77 | 432 | 487 | 113 |
| Link Distance (ft) | | 917 | 917 | 917 |
| Upstream Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |
| Storage Bay Dist (ft) | 500 | | | |
| Storage Blk Time (%) | | 2 | | |
| Queuing Penalty (veh) | | 0 | | |

## Intersection: 996: US 321/NB US 321 & SB US 321

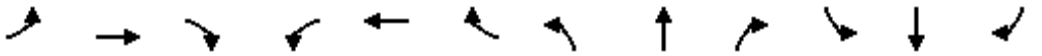
| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 997: SB US 321 & NB US 321/US 321

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

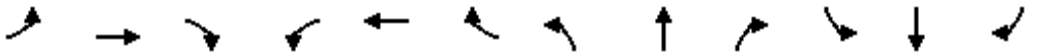
## Network Summary

Network wide Queuing Penalty: 4901



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 127 | 0 | 0 | 194 | 0 | 1918 | 137 | 0 | 1520 | 243 |
| Future Volume (vph) | 0 | 0 | 127 | 0 | 0 | 194 | 0 | 1918 | 137 | 0 | 1520 | 243 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | | 0 | 0 | | 0 | 0 | | 200 | 0 | | 200 |
| Storage Lanes | 0 | | 1 | 0 | | 1 | 0 | | 1 | 0 | | 1 |
| Taper Length (ft) | 100 | | | 100 | | | 50 | | | 50 | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | | 0.865 | | | 0.865 | | | 0.850 | | | 0.850 |
| Flt Protected | | | | | | | | | | | | |
| Satd. Flow (prot) | 0 | 0 | 1565 | 0 | 0 | 1565 | 0 | 3438 | 1538 | 0 | 3438 | 1538 |
| Flt Permitted | | | | | | | | | | | | |
| Satd. Flow (perm) | 0 | 0 | 1565 | 0 | 0 | 1565 | 0 | 3438 | 1538 | 0 | 3438 | 1538 |
| Link Speed (mph) | | 35 | | | 35 | | | 45 | | | 45 | |
| Link Distance (ft) | | 468 | | | 369 | | | 2914 | | | 1118 | |
| Travel Time (s) | | 9.1 | | | 7.2 | | | 44.2 | | | 16.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 0 | 0 | 141 | 0 | 0 | 216 | 0 | 2131 | 152 | 0 | 1689 | 270 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 141 | 0 | 0 | 216 | 0 | 2131 | 152 | 0 | 1689 | 270 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 71.7% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 127 | 0 | 0 | 194 | 0 | 1918 | 137 | 0 | 1520 | 243 |
| Future Volume (Veh/h) | 0 | 0 | 127 | 0 | 0 | 194 | 0 | 1918 | 137 | 0 | 1520 | 243 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 141 | 0 | 0 | 216 | 0 | 2131 | 152 | 0 | 1689 | 270 |
| Pedestrians | | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 2754 | 3820 | 844 | 2976 | 3820 | 1066 | 1689 | | | 2131 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 2754 | 3820 | 844 | 2976 | 3820 | 1066 | 1689 | | | 2131 | | |
| tC, single (s) | 7.6 | 6.6 | 7.0 | 7.6 | 6.6 | 7.0 | 4.2 | | | 4.2 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 0 | 100 | 53 | 100 | 100 | 0 | 100 | | | 100 | | |
| cM capacity (veh/h) | 0 | 4 | 300 | 3 | 4 | 213 | 361 | | | 241 | | |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | NB 2 | NB 3 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 141 | 216 | 1066 | 1066 | 152 | 844 | 844 | 270 |
| Volume Left | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 141 | 216 | 0 | 0 | 152 | 0 | 0 | 270 |
| cSH | 300 | 213 | 1700 | 1700 | 1700 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.47 | 1.01 | 0.63 | 0.63 | 0.09 | 0.50 | 0.50 | 0.16 |
| Queue Length 95th (ft) | 59 | 229 | 0 | 0 | 0 | 0 | 0 | 0 |
| Control Delay (s) | 27.2 | 112.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane LOS | D | F | | | | | | |
| Approach Delay (s) | 27.2 | 112.4 | 0.0 | | | 0.0 | | |
| Approach LOS | D | F | | | | | | |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 6.1 | | | |
| Intersection Capacity Utilization | 71.7% | ICU Level of Service | | C |
| Analysis Period (min) | 15 | | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 127 | 0 | 0 | 194 | 0 | 1918 | 137 | 0 | 1520 | 243 |
| Future Vol, veh/h | 0 | 0 | 127 | 0 | 0 | 194 | 0 | 1918 | 137 | 0 | 1520 | 243 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Stop | Stop | Stop | Stop | Free | Free | Free | Free | Free | Free |
| RT Channelized | - | - | Free | - | - | Free | - | - | Free | - | - | Free |
| Storage Length | - | - | 0 | - | - | 0 | - | - | 200 | - | - | 200 |
| Veh in Median Storage, # | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Grade, % | - | 0 | - | - | 0 | - | - | 0 | - | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Mvmt Flow | 0 | 0 | 141 | 0 | 0 | 216 | 0 | 2131 | 152 | 0 | 1689 | 270 |

| Major/Minor | Minor2 | | | Minor1 | | | Major1 | | | Major2 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | - | - | - | - | - | - | 0 | - | - | - | 0 |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - | - | - | - | - | - | - | - | - |
| Follow-up Hdwy | - | - | - | - | - | - | - | - | - | - | - | - |
| Pot Cap-1 Maneuver | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | - | 0 |
| Stage 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | - | 0 |
| Stage 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | 0 | 0 | - | 0 |
| Platoon blocked, % | | | | | | | | - | | | - | |
| Mov Cap-1 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Mov Cap-2 Maneuver | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 1 | - | - | - | - | - | - | - | - | - | - | - | - |
| Stage 2 | - | - | - | - | - | - | - | - | - | - | - | - |

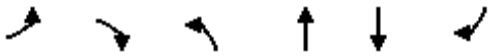
| Approach | EB | WB | NB | SB |
|---|---|---|---|---|
| HCM Control Delay, s | 0 | 0 | 0 | 0 |
| HCM LOS | A | A | | |

| Minor Lane/Major Mvmt | NBT | EBLn1 | WBLn1 | SBT |
|---|---|---|---|---|
| Capacity (veh/h) | - | - | - | - |
| HCM Lane V/C Ratio | - | - | - | - |
| HCM Control Delay (s) | - | 0 | 0 | - |
| HCM Lane LOS | - | A | A | - |
| HCM 95th %tile Q(veh) | - | - | - | - |

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 2112 | 0 | 0 | 0 | 1763 |
| Future Volume (vph) | 0 | 2112 | 0 | 0 | 0 | 1763 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 0.88 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 4940 | 0 | 0 | 0 | 2707 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 4940 | 0 | 0 | 0 | 2707 |
| Link Speed (mph) | | 45 | 45 | | 45 | |
| Link Distance (ft) | | 1118 | 1025 | | 856 | |
| Travel Time (s) | | 16.9 | 15.5 | | 13.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 0 | 2347 | 0 | 0 | 0 | 1959 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 2347 | 0 | 0 | 0 | 1959 |
| Sign Control | | Free | Stop | | Free | |

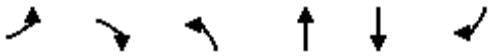
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 65.0% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 118 | 0 | 0 | 1650 | 23 |
| Future Volume (vph) | 0 | 118 | 0 | 0 | 1650 | 23 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 |
| Frt | | 0.865 | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 1596 | 0 | 0 | 3438 | 1538 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 1596 | 0 | 0 | 3438 | 1538 |
| Link Speed (mph) | 25 | | | 45 | 45 | |
| Link Distance (ft) | 869 | | | 856 | 251 | |
| Travel Time (s) | 23.7 | | | 13.0 | 3.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 0% | 3% | 2% | 2% | 5% | 5% |
| Adj. Flow (vph) | 0 | 131 | 0 | 0 | 1833 | 26 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 131 | 0 | 0 | 1833 | 26 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 59.6% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 118 | 0 | 0 | 1650 | 23 |
| Future Volume (Veh/h) | 0 | 118 | 0 | 0 | 1650 | 23 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 131 | 0 | 0 | 1833 | 26 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1833 | 916 | 1859 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1833 | 916 | 1859 | | | |
| tC, single (s) | 6.8 | 7.0 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 52 | 100 | | | |
| cM capacity (veh/h) | 69 | 273 | 321 | | | |

| Direction, Lane # | EB 1 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|
| Volume Total | 131 | 916 | 916 | 26 |
| Volume Left | 0 | 0 | 0 | 0 |
| Volume Right | 131 | 0 | 0 | 26 |
| cSH | 273 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.48 | 0.54 | 0.54 | 0.02 |
| Queue Length 95th (ft) | 61 | 0 | 0 | 0 |
| Control Delay (s) | 29.8 | 0.0 | 0.0 | 0.0 |
| Lane LOS | D | | | |
| Approach Delay (s) | 29.8 | 0.0 | | |
| Approach LOS | D | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.0 | | |
| Intersection Capacity Utilization | 59.6% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

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

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 0 | 118 | 0 | 0 | 1650 | 23 |
| Future Vol, veh/h | 0 | 118 | 0 | 0 | 1650 | 23 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | 0 | - | - | - | 0 |
| Veh in Median Storage, # | 0 | - | - | - | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 0 | 3 | 2 | 2 | 5 | 5 |
| Mvmt Flow | 0 | 131 | 0 | 0 | 1833 | 26 |

| Major/Minor | Minor2 | | Major2 | |
|---|---|---|---|---|
| Conflicting Flow All | - | 917 | - | 0 |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |
| Critical Hdwy | - | 6.96 | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | - | - |
| Follow-up Hdwy | - | 3.33 | - | - |
| Pot Cap-1 Maneuver | 0 | 272 | - | - |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 0 | - | - | - |
| Platoon blocked, % | | | - | - |
| Mov Cap-1 Maneuver | - | 272 | - | - |
| Mov Cap-2 Maneuver | - | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | - | - |

| Approach | EB | SB |
|---|---|---|
| HCM Control Delay, s | 30 | 0 |
| HCM LOS | D | |

| Minor Lane/Major Mvmt | EBLn1 | SBT | SBR |
|---|---|---|---|
| Capacity (veh/h) | 272 | - | - |
| HCM Lane V/C Ratio | 0.482 | - | - |
| HCM Control Delay (s) | 30 | - | - |
| HCM Lane LOS | D | - | - |
| HCM 95th %tile Q(veh) | 2.5 | - | - |

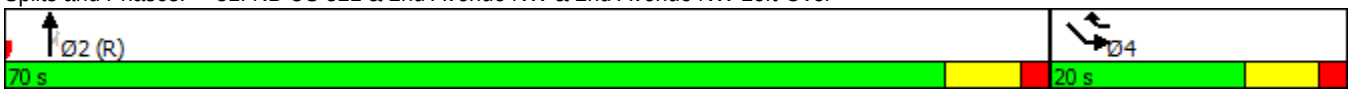
| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 333 | 0 | 1983 | 173 | 0 | 0 | 0 | 59 | 0 |
| Future Volume (vph) | 0 | 0 | 333 | 0 | 1983 | 173 | 0 | 0 | 0 | 59 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | | 0 | 400 | | 0 | 0 | 0 |
| Storage Lanes | 0 | 2 | | 0 | | 1 | 0 | | 0 | 1 | 0 |
| Taper Length (ft) | 50 | | | 50 | | | 50 | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2760 | 0 | 3438 | 1538 | 0 | 0 | 0 | 1719 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2760 | 0 | 3438 | 1538 | 0 | 0 | 0 | 1719 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 45 | | | 45 | | 25 | |
| Link Distance (ft) | 275 | | | | 152 | | | 917 | | 184 | |
| Travel Time (s) | 5.4 | | | | 2.3 | | | 13.9 | | 5.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 0 | 0 | 370 | 0 | 2203 | 192 | 0 | 0 | 0 | 66 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 370 | 0 | 2203 | 192 | 0 | 0 | 0 | 66 | 0 |
| Turn Type | | | Prot | | NA | Perm | | | | Prot | |
| Protected Phases | | | 4 | | 2 | | | | | 4 | |
| Permitted Phases | | | | | | 2 | | | | | |
| Detector Phase | | | 4 | | 2 | 2 | | | | 4 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 12.0 | 12.0 | | | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 19.0 | 19.0 | | | | 14.0 | |
| Total Split (s) | | | 20.0 | | 70.0 | 70.0 | | | | 20.0 | |
| Total Split (%) | | | 22.2% | | 77.8% | 77.8% | | | | 22.2% | |
| Maximum Green (s) | | | 13.0 | | 63.0 | 63.0 | | | | 13.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | 5.0 | | | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | 2.0 | | | | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | -2.0 | -2.0 | | | | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | 5.0 | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | 3.0 | | | | 3.0 | |
| Recall Mode | | | None | | C-Min | C-Min | | | | None | |
| Act Effct Green (s) | | | 14.9 | | 65.1 | 65.1 | | | | 14.9 | |
| Actuated g/C Ratio | | | 0.17 | | 0.72 | 0.72 | | | | 0.17 | |
| v/c Ratio | | | 0.81 | | 0.89 | 0.17 | | | | 0.23 | |
| Control Delay | | | 51.3 | | 5.2 | 1.8 | | | | 30.2 | |
| Queue Delay | | | 0.0 | | 0.0 | 0.0 | | | | 0.0 | |
| Total Delay | | | 51.3 | | 5.2 | 1.8 | | | | 30.2 | |
| LOS | | | D | | A | A | | | | C | |
| Approach Delay | 51.3 | | | | 4.9 | | | | | 30.2 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | D | | | | A | | | | | C | |
| Queue Length 50th (ft) | | | 116 | | 95 | 13 | | | | 30 | |
| Queue Length 95th (ft) | | | #192 | | m97 | m14 | | | | m40 | |
| Internal Link Dist (ft) | 195 | | | | 72 | | | 837 | | 104 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 460 | | 2485 | 1111 | | | | 286 | |
| Starvation Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Reduced v/c Ratio | | | 0.80 | | 0.89 | 0.17 | | | | 0.23 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 24 (27%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.89 | | | |
| Intersection Signal Delay: 11.6 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 31: NB US 321 & 2nd Avenue NW & 2nd Avenue NW Left-Over

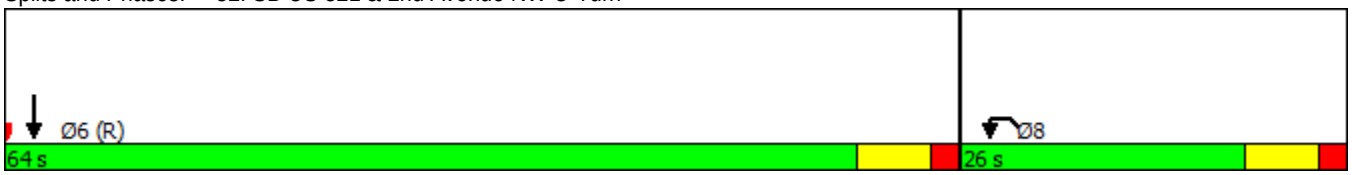


| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 1634 | 229 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 1634 | 229 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 3438 | 1719 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 3438 | 1719 | 0 |
| Right Turn on Red | | No | | | No | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 45 | | | 45 | 25 | |
| Link Distance (ft) | 833 | | | 712 | 94 | |
| Travel Time (s) | 12.6 | | | 10.8 | 2.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 0 | 0 | 0 | 1816 | 254 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 1816 | 254 | 0 |
| Turn Type | | | | NA | Prot | |
| Protected Phases | | | | 6 | 8 | |
| Permitted Phases | | | | | | |
| Detector Phase | | | | 6 | 8 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | | | 12.0 | 7.0 | |
| Minimum Split (s) | | | | 19.0 | 14.0 | |
| Total Split (s) | | | | 64.0 | 26.0 | |
| Total Split (%) | | | | 71.1% | 28.9% | |
| Maximum Green (s) | | | | 57.0 | 19.0 | |
| Yellow Time (s) | | | | 5.0 | 5.0 | |
| All-Red Time (s) | | | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | | -2.0 | -2.0 | |
| Total Lost Time (s) | | | | 5.0 | 5.0 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | | | | 3.0 | 3.0 | |
| Recall Mode | | | | C-Min | None | |
| Act Effct Green (s) | | | | 61.2 | 18.8 | |
| Actuated g/C Ratio | | | | 0.68 | 0.21 | |
| v/c Ratio | | | | 0.78 | 0.71 | |
| Control Delay | | | | 5.2 | 42.3 | |
| Queue Delay | | | | 0.0 | 0.0 | |
| Total Delay | | | | 5.2 | 42.3 | |
| LOS | | | | A | D | |
| Approach Delay | | | | 5.2 | 42.3 | |
| Approach LOS | | | | A | D | |
| Queue Length 50th (ft) | | | | 109 | 138 | |
| Queue Length 95th (ft) | | | | 136 | m159 | |

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 753 | | | 632 | 14 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | | | 2339 | 401 | |
| Starvation Cap Reductn | | | | 0 | 0 | |
| Spillback Cap Reductn | | | | 0 | 0 | |
| Storage Cap Reductn | | | | 0 | 0 | |
| Reduced v/c Ratio | | | | 0.78 | 0.63 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 55 (61%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.78 | | | |
| Intersection Signal Delay: 9.7 | | Intersection LOS: A | |
| Intersection Capacity Utilization 110.4% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 32: SB US 321 & 2nd Avenue NW U-Turn



| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 448 | 0 | 0 | 0 | 0 | 1585 | 219 | 192 | 0 |
| Future Volume (vph) | 0 | 0 | 448 | 0 | 0 | 0 | 0 | 1585 | 219 | 192 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | | | | 0.850 | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2760 | 0 | 0 | 0 | 0 | 3438 | 1538 | 1719 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2760 | 0 | 0 | 0 | 0 | 3438 | 1538 | 1719 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 45 | | | 45 | | 25 | |
| Link Distance (ft) | 616 | | | | 840 | | | 154 | | 188 | |
| Travel Time (s) | 12.0 | | | | 12.7 | | | 2.3 | | 5.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 5% | 5% | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 0 | 0 | 498 | 0 | 0 | 0 | 0 | 1761 | 243 | 213 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 498 | 0 | 0 | 0 | 0 | 1761 | 243 | 213 | 0 |
| Turn Type | | | Perm | | | | | NA | Perm | Prot | |
| Protected Phases | | | | | | | | 6 | | 8 | |
| Permitted Phases | | | 4 | | | | | | 6 | | |
| Detector Phase | | | 4 | | | | | 6 | 6 | 8 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | | | | 12.0 | 12.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 19.0 | 19.0 | 14.0 | |
| Total Split (s) | | | 28.0 | | | | | 62.0 | 62.0 | 28.0 | |
| Total Split (%) | | | 31.1% | | | | | 68.9% | 68.9% | 31.1% | |
| Maximum Green (s) | | | 21.0 | | | | | 55.0 | 55.0 | 21.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | | | | -2.0 | -2.0 | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | |
| Recall Mode | | | None | | | | | C-Min | C-Min | None | |
| Act Effct Green (s) | | | 21.5 | | | | | 58.5 | 58.5 | 21.5 | |
| Actuated g/C Ratio | | | 0.24 | | | | | 0.65 | 0.65 | 0.24 | |
| v/c Ratio | | | 0.76 | | | | | 0.79 | 0.24 | 0.52 | |
| Control Delay | | | 39.8 | | | | | 7.4 | 4.4 | 33.2 | |
| Queue Delay | | | 0.0 | | | | | 0.0 | 0.0 | 0.0 | |
| Total Delay | | | 39.8 | | | | | 7.4 | 4.4 | 33.2 | |
| LOS | | | D | | | | | A | A | C | |
| Approach Delay | 39.8 | | | | | | | 7.1 | | 33.2 | |
| Approach LOS | D | | | | | | | A | | C | |
| Queue Length 50th (ft) | | | 146 | | | | | 103 | 26 | 93 | |
| Queue Length 95th (ft) | | | 207 | | | | | 159 | m46 | m94 | |

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 536 | | | | 760 | | | 74 | | 108 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 705 | | | | | 2235 | 1000 | 439 | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Reduced v/c Ratio | | | 0.71 | | | | | 0.79 | 0.24 | 0.49 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 63 (70%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.79 | | | |
| Intersection Signal Delay: 15.1 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 33: SB US 321 & 2nd Avenue NW Left -Over & 2nd Avenue NW

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 2114 | 0 | 0 | 308 | 0 |
| Future Volume (vph) | 0 | 2114 | 0 | 0 | 308 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 3438 | 0 | 0 | 1719 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 3438 | 0 | 0 | 1719 | 0 |
| Right Turn on Red | | | | No | No | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | 45 | 45 | | 25 | |
| Link Distance (ft) | | 1025 | 741 | | 87 | |
| Travel Time (s) | | 15.5 | 11.2 | | 2.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 5% | 5% | 2% |
| Adj. Flow (vph) | 0 | 2349 | 0 | 0 | 342 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 2349 | 0 | 0 | 342 | 0 |
| Turn Type | | NA | | | Prot | |
| Protected Phases | | 2 | | | 4 | |
| Permitted Phases | | | | | | |
| Detector Phase | | 2 | | | 4 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 12.0 | | | 7.0 | |
| Minimum Split (s) | | 19.0 | | | 14.0 | |
| Total Split (s) | | 67.0 | | | 23.0 | |
| Total Split (%) | | 74.4% | | | 25.6% | |
| Maximum Green (s) | | 60.0 | | | 16.0 | |
| Yellow Time (s) | | 5.0 | | | 5.0 | |
| All-Red Time (s) | | 2.0 | | | 2.0 | |
| Lost Time Adjust (s) | | -2.0 | | | -2.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | |
| Recall Mode | | C-Min | | | None | |
| Act Effct Green (s) | | 62.0 | | | 18.0 | |
| Actuated g/C Ratio | | 0.69 | | | 0.20 | |
| v/c Ratio | | 0.99 | | | 1.00 | |
| Control Delay | | 31.6 | | | 74.9 | |
| Queue Delay | | 0.0 | | | 0.0 | |
| Total Delay | | 31.6 | | | 74.9 | |
| LOS | | C | | | E | |
| Approach Delay | | 31.6 | | | 74.9 | |
| Approach LOS | | C | | | E | |
| Queue Length 50th (ft) | | 597 | | | 186 | |
| Queue Length 95th (ft) | | #870 | | | m#325 | |

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | | 945 | 661 | | 7 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 2368 | | | 343 | |
| Starvation Cap Reductn | | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.99 | | | 1.00 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 14 (16%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 1.00 | | | |
| Intersection Signal Delay: 37.1 | | Intersection LOS: D | |
| Intersection Capacity Utilization 83.8% | | ICU Level of Service E | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 34: NB US 321 & 2nd Avenue NW U-Turn

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 229 | 2087 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 229 | 2087 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 400 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 0 | 0 |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1719 | 3438 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1719 | 3438 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 45 | 45 | | 55 | |
| Link Distance (ft) | | 917 | 715 | | 94 | |
| Travel Time (s) | | 13.9 | 10.8 | | 1.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 254 | 2319 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 254 | 2319 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 110.4% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 59 | 1804 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 59 | 1804 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 300 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 50 | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1719 | 4940 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1719 | 4940 | 0 | 0 |
| Link Speed (mph) | 45 | | | 45 | 55 | |
| Link Distance (ft) | 154 | | | 833 | 184 | |
| Travel Time (s) | 2.3 | | | 12.6 | 2.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 5% | 5% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 66 | 2004 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 66 | 2004 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 66.2% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 308 | 1725 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 308 | 1725 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 300 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 50 | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Link Speed (mph) | 45 | | | 45 | 55 | |
| Link Distance (ft) | 251 | | | 840 | 87 | |
| Travel Time (s) | 3.8 | | | 12.7 | 1.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 5% | 5% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 342 | 1917 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 342 | 1917 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 83.8% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 192 | 2156 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 192 | 2156 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 550 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 0 | 0 |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1719 | 4940 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1719 | 4940 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 45 | 45 | | 55 | |
| Link Distance (ft) | | 741 | 152 | | 188 | |
| Travel Time (s) | | 11.2 | 2.3 | | 2.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 213 | 2396 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 213 | 2396 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 128.8% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 321 | 0 | 0 | 0 | 0 | 1567 | 64 | 81 | 0 |
| Future Volume (vph) | 0 | 0 | 321 | 0 | 0 | 0 | 0 | 1567 | 64 | 81 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.865 | | | | | | 0.850 | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 1596 | 0 | 0 | 0 | 0 | 3471 | 1553 | 1719 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 1596 | 0 | 0 | 0 | 0 | 3471 | 1553 | 1719 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 45 | | | 45 | | 25 | |
| Link Distance (ft) | 410 | | | | 820 | | | 1170 | | 97 | |
| Travel Time (s) | 8.0 | | | | 12.4 | | | 17.7 | | 2.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 5% | 5% | 5% | 4% | 4% | 4% | 5% | 5% |
| Adj. Flow (vph) | 0 | 0 | 357 | 0 | 0 | 0 | 0 | 1741 | 71 | 90 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 357 | 0 | 0 | 0 | 0 | 1741 | 71 | 90 | 0 |
| Turn Type | | | Perm | | | | | NA | Perm | Prot | |
| Protected Phases | | | | | | | | 6 | | 8 | |
| Permitted Phases | | | 4 | | | | | | 6 | | |
| Detector Phase | | | 4 | | | | | 6 | 6 | 8 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | | | | 12.0 | 12.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 19.0 | 19.0 | 14.0 | |
| Total Split (s) | | | 32.0 | | | | | 58.0 | 58.0 | 32.0 | |
| Total Split (%) | | | 35.6% | | | | | 64.4% | 64.4% | 35.6% | |
| Maximum Green (s) | | | 25.0 | | | | | 51.0 | 51.0 | 25.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | | | | -2.0 | -2.0 | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | |
| Recall Mode | | | None | | | | | C-Min | C-Min | None | |
| Act Effct Green (s) | | | 24.9 | | | | | 55.1 | 55.1 | 24.9 | |
| Actuated g/C Ratio | | | 0.28 | | | | | 0.61 | 0.61 | 0.28 | |
| v/c Ratio | | | 0.81 | | | | | 0.82 | 0.07 | 0.19 | |
| Control Delay | | | 45.7 | | | | | 11.0 | 5.6 | 18.1 | |
| Queue Delay | | | 0.0 | | | | | 0.0 | 0.0 | 0.0 | |
| Total Delay | | | 45.7 | | | | | 11.0 | 5.6 | 18.1 | |
| LOS | | | D | | | | | B | A | B | |
| Approach Delay | 45.7 | | | | | | | 10.8 | | 18.1 | |
| Approach LOS | D | | | | | | | B | | B | |
| Queue Length 50th (ft) | | | 182 | | | | | 150 | 10 | 37 | |
| Queue Length 95th (ft) | | | #310 | | | | | 190 | m19 | m39 | |

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 330 | | | | 740 | | | 1090 | | 17 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 478 | | | | | 2126 | 951 | 515 | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Reduced v/c Ratio | | | 0.75 | | | | | 0.82 | 0.07 | 0.17 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 40 (44%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.82 | | | |
| Intersection Signal Delay: 16.6 | | Intersection LOS: B | |
| Intersection Capacity Utilization 71.5% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 43: SB US 321 & 7th Avenue NW Left-Over & 7th Avenue NW

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 2015 | 0 | 0 | 158 | 0 |
| Future Volume (vph) | 0 | 2015 | 0 | 0 | 158 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 3438 | 0 | 0 | 1719 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 3438 | 0 | 0 | 1719 | 0 |
| Right Turn on Red | | | | No | No | No |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | | 45 | 45 | | 25 | |
| Link Distance (ft) | | 715 | 820 | | 90 | |
| Travel Time (s) | | 10.8 | 12.4 | | 2.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 5% | 5% | 5% |
| Adj. Flow (vph) | 0 | 2239 | 0 | 0 | 176 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 2239 | 0 | 0 | 176 | 0 |
| Turn Type | | NA | | | Prot | |
| Protected Phases | | 2 | | | 4 | |
| Permitted Phases | | | | | | |
| Detector Phase | | 2 | | | 4 | |
| Switch Phase | | | | | | |
| Minimum Initial (s) | | 12.0 | | | 7.0 | |
| Minimum Split (s) | | 19.0 | | | 14.0 | |
| Total Split (s) | | 72.0 | | | 18.0 | |
| Total Split (%) | | 80.0% | | | 20.0% | |
| Maximum Green (s) | | 65.0 | | | 11.0 | |
| Yellow Time (s) | | 5.0 | | | 5.0 | |
| All-Red Time (s) | | 2.0 | | | 2.0 | |
| Lost Time Adjust (s) | | -2.0 | | | -2.0 | |
| Total Lost Time (s) | | 5.0 | | | 5.0 | |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | | 3.0 | | | 3.0 | |
| Recall Mode | | C-Min | | | None | |
| Act Effct Green (s) | | 67.3 | | | 12.7 | |
| Actuated g/C Ratio | | 0.75 | | | 0.14 | |
| v/c Ratio | | 0.87 | | | 0.73 | |
| Control Delay | | 7.0 | | | 50.3 | |
| Queue Delay | | 0.0 | | | 0.0 | |
| Total Delay | | 7.0 | | | 50.3 | |
| LOS | | A | | | D | |
| Approach Delay | | 7.0 | | | 50.3 | |
| Approach LOS | | A | | | D | |
| Queue Length 50th (ft) | | 135 | | | 100 | |
| Queue Length 95th (ft) | | 207 | | | m129 | |

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | | 635 | 740 | | 10 | |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | | 2571 | | | 248 | |
| Starvation Cap Reductn | | 0 | | | 0 | |
| Spillback Cap Reductn | | 0 | | | 0 | |
| Storage Cap Reductn | | 0 | | | 0 | |
| Reduced v/c Ratio | | 0.87 | | | 0.71 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 43 (48%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.87 | | | |
| Intersection Signal Delay: 10.1 | | Intersection LOS: B | |
| Intersection Capacity Utilization 72.8% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 44: NB US 321 & 7th Avenue NW U-Turn

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 158 | 1730 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 158 | 1730 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 300 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 50 | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1719 | 3438 | 0 | 0 |
| Link Speed (mph) | 45 | | | 45 | 55 | |
| Link Distance (ft) | 712 | | | 820 | 90 | |
| Travel Time (s) | 10.8 | | | 12.4 | 1.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 5% | 5% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 176 | 1922 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 176 | 1922 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 72.8% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 81 | 2092 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 81 | 2092 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 150 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 0 | 0 |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1719 | 3438 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1719 | 3438 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 45 | 45 | | 55 | |
| Link Distance (ft) | | 820 | 1115 | | 97 | |
| Travel Time (s) | | 12.4 | 16.9 | | 1.2 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 4% | 4% | 5% | 5% |
| Adj. Flow (vph) | 90 | 2324 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 90 | 2324 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 133.9% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

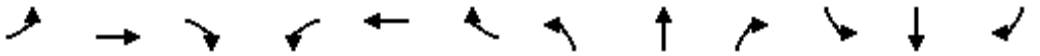
Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 1274 | 0 | 2076 | 356 | 0 | 0 | 0 | 700 | 0 |
| Future Volume (vph) | 0 | 0 | 1274 | 0 | 2076 | 356 | 0 | 0 | 0 | 700 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 0.76 | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 3610 | 0 | 4940 | 1538 | 0 | 0 | 0 | 3367 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 3610 | 0 | 4940 | 1538 | 0 | 0 | 0 | 3367 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 45 | | | 45 | | 25 | |
| Link Distance (ft) | 400 | | | | 125 | | | 983 | | 205 | |
| Travel Time (s) | 7.8 | | | | 1.9 | | | 14.9 | | 5.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 5% | 5% | 5% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 1416 | 0 | 2307 | 396 | 0 | 0 | 0 | 778 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 1416 | 0 | 2307 | 396 | 0 | 0 | 0 | 778 | 0 |
| Turn Type | | | Prot | | NA | Perm | | | | Prot | |
| Protected Phases | | | 8 | | 2 | | | | | 8 | |
| Permitted Phases | | | 8 | | | 2 | | | | 8 | |
| Detector Phase | | | 8 | | 2 | 2 | | | | 8 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 12.0 | 12.0 | | | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 19.0 | 19.0 | | | | 14.0 | |
| Total Split (s) | | | 41.0 | | 49.0 | 49.0 | | | | 41.0 | |
| Total Split (%) | | | 45.6% | | 54.4% | 54.4% | | | | 45.6% | |
| Maximum Green (s) | | | 34.0 | | 42.0 | 42.0 | | | | 34.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | 5.0 | | | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | 2.0 | | | | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | -2.0 | 0.0 | | | | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | 7.0 | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | 3.0 | | | | 3.0 | |
| Recall Mode | | | None | | C-Min | C-Min | | | | None | |
| Act Effct Green (s) | | | 36.0 | | 44.0 | 42.0 | | | | 36.0 | |
| Actuated g/C Ratio | | | 0.40 | | 0.49 | 0.47 | | | | 0.40 | |
| v/c Ratio | | | 0.98 | | 0.96 | 0.55 | | | | 0.58 | |
| Control Delay | | | 47.3 | | 17.8 | 9.4 | | | | 22.2 | |
| Queue Delay | | | 0.0 | | 0.0 | 0.0 | | | | 0.0 | |
| Total Delay | | | 47.3 | | 17.8 | 9.4 | | | | 22.2 | |
| LOS | | | D | | B | A | | | | C | |
| Approach Delay | 47.3 | | | | 16.6 | | | | | 22.2 | |
| Approach LOS | D | | | | B | | | | | C | |
| Queue Length 50th (ft) | | | 340 | | 202 | 52 | | | | 188 | |
| Queue Length 95th (ft) | | | #473 | | #561 | m68 | | | | 244 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 320 | | | | 45 | | | 903 | | 125 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 1444 | | 2415 | 717 | | | | 1346 | |
| Starvation Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Reduced v/c Ratio | | | 0.98 | | 0.96 | 0.55 | | | | 0.58 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 10 (11%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.98 | | | |
| Intersection Signal Delay: 26.3 | | Intersection LOS: C | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 61: NB US 321 & Clement Boulevard & Clement Boulevard Left-Over



| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 31 | 296 | 0 | 0 | 0 | 0 | 0 | 0 | 2012 | 46 |
| Future Volume (vph) | 0 | 0 | 31 | 296 | 0 | 0 | 0 | 0 | 0 | 0 | 2012 | 46 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.91 |
| Frt | | | 0.865 | | | | | | | | 0.997 | |
| Flt Protected | | | | 0.950 | | | | | | | | |
| Satd. Flow (prot) | 0 | 0 | 1596 | 3367 | 0 | 0 | 0 | 0 | 0 | 0 | 4925 | 0 |
| Flt Permitted | | | | 0.950 | | | | | | | | |
| Satd. Flow (perm) | 0 | 0 | 1596 | 3367 | 0 | 0 | 0 | 0 | 0 | 0 | 4925 | 0 |
| Right Turn on Red | | | No | No | | No | | | No | | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | | 35 | | | 25 | | | 45 | | | 45 | |
| Link Distance (ft) | | 250 | | | 97 | | | 866 | | | 889 | |
| Travel Time (s) | | 4.9 | | | 2.6 | | | 13.1 | | | 13.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 4% | 2% | 2% | 4% | 4% | 4% | 5% | 5% | 5% |
| Bus Blockages (#/hr) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| Adj. Flow (vph) | 0 | 0 | 34 | 329 | 0 | 0 | 0 | 0 | 0 | 0 | 2236 | 51 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 34 | 329 | 0 | 0 | 0 | 0 | 0 | 0 | 2287 | 0 |
| Turn Type | | | Free | Prot | | | | | | | NA | |
| Protected Phases | | | | 8 | | | | | | | 6 | |
| Permitted Phases | | | Free | | | | | | | | | |
| Detector Phase | | | | 8 | | | | | | | 6 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | | | 7.0 | | | | | | | 12.0 | |
| Minimum Split (s) | | | | 14.0 | | | | | | | 19.0 | |
| Total Split (s) | | | | 22.0 | | | | | | | 68.0 | |
| Total Split (%) | | | | 24.4% | | | | | | | 75.6% | |
| Maximum Green (s) | | | | 15.0 | | | | | | | 61.0 | |
| Yellow Time (s) | | | | 5.0 | | | | | | | 5.0 | |
| All-Red Time (s) | | | | 2.0 | | | | | | | 2.0 | |
| Lost Time Adjust (s) | | | | -2.0 | | | | | | | -2.0 | |
| Total Lost Time (s) | | | | 5.0 | | | | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | | | 3.0 | | | | | | | 3.0 | |
| Recall Mode | | | | None | | | | | | | C-Min | |
| Act Effct Green (s) | | | 90.0 | 15.3 | | | | | | | 64.7 | |
| Actuated g/C Ratio | | | 1.00 | 0.17 | | | | | | | 0.72 | |
| v/c Ratio | | | 0.02 | 0.58 | | | | | | | 0.65 | |
| Control Delay | | | 0.0 | 35.9 | | | | | | | 7.9 | |
| Queue Delay | | | 0.0 | 0.0 | | | | | | | 0.0 | |
| Total Delay | | | 0.0 | 35.9 | | | | | | | 7.9 | |
| LOS | | | A | D | | | | | | | A | |
| Approach Delay | | | | | 35.9 | | | | | | 7.9 | |
| Approach LOS | | | | | D | | | | | | A | |
| Queue Length 50th (ft) | | | 0 | 89 | | | | | | | 217 | |

| Lane Group | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Queue Length 95th (ft) | | | 0 | m92 | | | | | | | 272 | |
| Internal Link Dist (ft) | | 170 | | | 17 | | | 786 | | | 809 | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | | | 1596 | 635 | | | | | | | 3539 | |
| Starvation Cap Reductn | | | 0 | 0 | | | | | | | 0 | |
| Spillback Cap Reductn | | | 0 | 0 | | | | | | | 0 | |
| Storage Cap Reductn | | | 0 | 0 | | | | | | | 0 | |
| Reduced v/c Ratio | | | 0.02 | 0.52 | | | | | | | 0.65 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 18 (20%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 45 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.65 | | | |
| Intersection Signal Delay: 11.3 | | Intersection LOS: B | |
| Intersection Capacity Utilization 106.8% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |

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

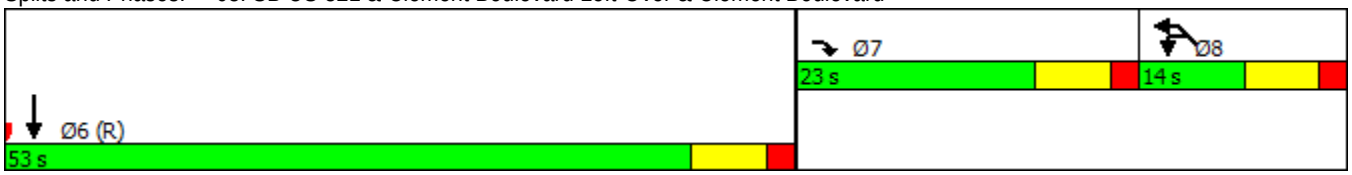
Splits and Phases: 62: SB US 321 & 13th Avenue Drive NW/Clement Boulevard U-Turn

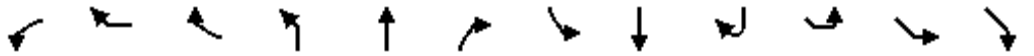
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 279 | 0 | 0 | 0 | 0 | 1471 | 142 | 53 | 47 | 0 |
| Future Volume (vph) | 0 | 0 | 279 | 0 | 0 | 0 | 0 | 1471 | 142 | 53 | 47 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | | | 0.987 | | | | |
| Flt Protected | | | | | | | | | | 0.950 | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2760 | 0 | 0 | 0 | 0 | 4923 | 0 | 1770 | 1770 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2760 | 0 | 0 | 0 | 0 | 4923 | 0 | 1770 | 1770 | 0 |
| Right Turn on Red | | | No | | | No | | | No | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 45 | | | 45 | | | 25 | |
| Link Distance (ft) | 910 | | | | 822 | | | 181 | | | 143 | |
| Travel Time (s) | 17.7 | | | | 12.5 | | | 2.7 | | | 3.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 3% | 5% | 5% | 5% | 4% | 4% | 4% | 2% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 310 | 0 | 0 | 0 | 0 | 1634 | 158 | 59 | 52 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 310 | 0 | 0 | 0 | 0 | 1792 | 0 | 59 | 52 | 0 |
| Turn Type | | | Prot | | | | | NA | | Prot | Prot | |
| Protected Phases | | | 7 | | | | | 6 | | 8 | 8 | |
| Permitted Phases | | | | | | | | | | | | |
| Detector Phase | | | 7 | | | | | 6 | | 8 | 8 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | | | | 12.0 | | 7.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 19.0 | | 14.0 | 14.0 | |
| Total Split (s) | | | 23.0 | | | | | 53.0 | | 14.0 | 14.0 | |
| Total Split (%) | | | 25.6% | | | | | 58.9% | | 15.6% | 15.6% | |
| Maximum Green (s) | | | 16.0 | | | | | 46.0 | | 7.0 | 7.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | | | | -2.0 | | -2.0 | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | | 5.0 | 5.0 | |
| Lead/Lag | | | Lead | | | | | | | Lag | Lag | |
| Lead-Lag Optimize? | | | Yes | | | | | | | Yes | Yes | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | | 3.0 | 3.0 | |
| Recall Mode | | | None | | | | | C-Min | | None | None | |
| Act Effct Green (s) | | | 16.3 | | | | | 52.2 | | 9.3 | 9.3 | |
| Actuated g/C Ratio | | | 0.18 | | | | | 0.58 | | 0.10 | 0.10 | |
| v/c Ratio | | | 0.62 | | | | | 0.63 | | 0.32 | 0.28 | |
| Control Delay | | | 39.7 | | | | | 10.3 | | 52.2 | 51.8 | |
| Queue Delay | | | 0.0 | | | | | 0.0 | | 0.0 | 0.0 | |
| Total Delay | | | 39.7 | | | | | 10.3 | | 52.2 | 51.8 | |
| LOS | | | D | | | | | B | | D | D | |
| Approach Delay | 39.7 | | | | | | | 10.3 | | | 52.0 | |
| Approach LOS | D | | | | | | | B | | | D | |
| Queue Length 50th (ft) | | | 92 | | | | | 152 | | 33 | 29 | |
| Queue Length 95th (ft) | | | 138 | | | | | 170 | | m41 | m36 | |

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL2 | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 830 | | | | 742 | | | 101 | | | 63 | |
| Turn Bay Length (ft) | | | | | | | | | | | | |
| Base Capacity (vph) | | | 552 | | | | | 2864 | | 183 | 183 | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | | 0 | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | | 0 | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | | 0 | 0 | |
| Reduced v/c Ratio | | | 0.56 | | | | | 0.63 | | 0.32 | 0.28 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 24 (27%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.63 | | | |
| Intersection Signal Delay: 16.5 | | Intersection LOS: B | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 63: SB US 321 & Clement Boulevard Left-Over & Clement Boulevard





| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL2 | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 114 | 0 | 1978 | 71 | 0 | 0 | 0 | 222 | 67 | 0 |
| Future Volume (vph) | 0 | 0 | 114 | 0 | 1978 | 71 | 0 | 0 | 0 | 222 | 67 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 250 | | 0 | | 375 | 0 | | 0 | | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 1 | 0 | | 0 | | 1 | 0 |
| Taper Length (ft) | 50 | | | 50 | | | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.995 | | | | | | | |
| Flt Protected | | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2733 | 0 | 4963 | 0 | 0 | 0 | 0 | 0 | 1736 | 0 |
| Flt Permitted | | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2733 | 0 | 4963 | 0 | 0 | 0 | 0 | 0 | 1736 | 0 |
| Right Turn on Red | | | No | | | No | | | No | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 45 | | | 45 | | | 25 | |
| Link Distance (ft) | 319 | | | | 1115 | | | 832 | | | 149 | |
| Travel Time (s) | 6.2 | | | | 16.9 | | | 12.6 | | | 4.1 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 127 | 0 | 2198 | 79 | 0 | 0 | 0 | 247 | 74 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 127 | 0 | 2277 | 0 | 0 | 0 | 0 | 0 | 321 | 0 |
| Turn Type | | | Prot | | NA | | | | | Prot | Prot | |
| Protected Phases | | | 8 | | 2 | | | | | 4 | 4 | |
| Permitted Phases | | | | | | | | | | | | |
| Detector Phase | | | 8 | | 2 | | | | | 4 | 4 | |
| Switch Phase | | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 12.0 | | | | | 7.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 19.0 | | | | | 14.0 | 14.0 | |
| Total Split (s) | | | 14.0 | | 50.0 | | | | | 26.0 | 26.0 | |
| Total Split (%) | | | 15.6% | | 55.6% | | | | | 28.9% | 28.9% | |
| Maximum Green (s) | | | 7.0 | | 43.0 | | | | | 19.0 | 19.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | | | | | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | -2.0 | | | | | | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | | | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | | | | | 3.0 | 3.0 | |
| Recall Mode | | | None | | C-Min | | | | | None | None | |
| Act Effct Green (s) | | | 9.0 | | 45.8 | | | | | | 20.2 | |
| Actuated g/C Ratio | | | 0.10 | | 0.51 | | | | | | 0.22 | |
| v/c Ratio | | | 0.47 | | 0.90 | | | | | | 0.82 | |
| Control Delay | | | 44.3 | | 18.4 | | | | | | 43.0 | |
| Queue Delay | | | 0.0 | | 0.0 | | | | | | 0.0 | |
| Total Delay | | | 44.3 | | 18.4 | | | | | | 43.0 | |
| LOS | | | D | | B | | | | | | D | |
| Approach Delay | 44.3 | | | | 18.4 | | | | | | 43.0 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL2 | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | D | | | | B | | | | | | D | |
| Queue Length 50th (ft) | | | 39 | | 414 | | | | | | 127 | |
| Queue Length 95th (ft) | | | 71 | | #460 | | | | | | #295 | |
| Internal Link Dist (ft) | 239 | | | | 1035 | | | 752 | | | 69 | |
| Turn Bay Length (ft) | | | 250 | | | | | | | | | |
| Base Capacity (vph) | | | 273 | | 2524 | | | | | | 405 | |
| Starvation Cap Reductn | | | 0 | | 0 | | | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | | | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | | | | | | 0 | |
| Reduced v/c Ratio | | | 0.47 | | 0.90 | | | | | | 0.79 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 86 (96%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 80 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.90 | | | |
| Intersection Signal Delay: 22.5 | | Intersection LOS: C | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 64: NB US 321 & 9th Avenue NW & Clement Boulevard

| Lane Group | EBL | EBR | SET | SER | NWL | NWT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 296 | 3075 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 296 | 3075 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 300 | |
| Storage Lanes | 0 | 0 | | 0 | 2 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 | 0.91 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 3367 | 4988 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 3367 | 4988 |
| Link Speed (mph) | 25 | | 45 | | | 45 |
| Link Distance (ft) | 97 | | 939 | | | 983 |
| Travel Time (s) | 2.6 | | 14.2 | | | 14.9 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 5% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 329 | 3417 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 329 | 3417 |
| Sign Control | Stop | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 106.8% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

Intersection has too many lanes per leg.

HCM All-Way analysis is limited to two lanes per leg.

Channelized right turn lanes are not counted.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 700 | 1613 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 700 | 1613 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 400 | | 0 | 0 |
| Storage Lanes | | 0 | 2 | | 0 | 0 |
| Taper Length (ft) | | | 50 | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 3367 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 3367 | 4988 | 0 | 0 |
| Link Speed (mph) | 45 | | | 45 | 55 | |
| Link Distance (ft) | 181 | | | 866 | 205 | |
| Travel Time (s) | 2.7 | | | 13.1 | 2.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 778 | 1792 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 778 | 1792 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 34.5% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 289 | 1665 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 289 | 1665 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 200 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 50 | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Link Speed (mph) | 45 | | | 45 | 55 | |
| Link Distance (ft) | 1170 | | | 822 | 149 | |
| Travel Time (s) | 17.7 | | | 12.5 | 1.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 321 | 1850 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 321 | 1850 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 35.5% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 100 | 2432 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 100 | 2432 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 400 | | | 0 | 0 | 0 |
| Storage Lanes | 2 | | | 0 | 0 | 0 |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 0.97 | 0.86 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 3335 | 6225 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 3335 | 6225 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 45 | 45 | | 55 | |
| Link Distance (ft) | | 832 | 125 | | 143 | |
| Travel Time (s) | | 12.6 | 1.9 | | 1.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 4% | 42% | 5% | 5% |
| Adj. Flow (vph) | 111 | 2702 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 111 | 2702 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 38.6% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

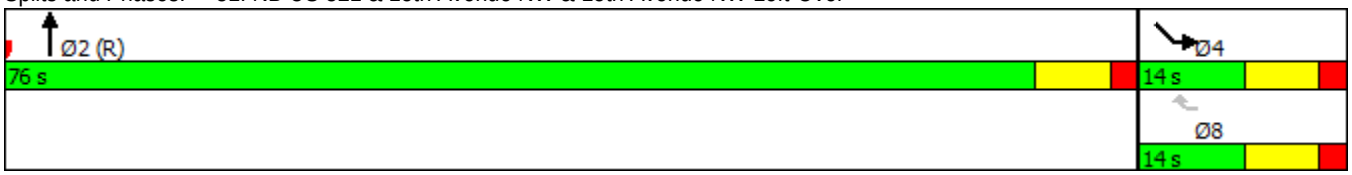
Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 144 | 0 | 2978 | 20 | 0 | 0 | 0 | 43 | 0 |
| Future Volume (vph) | 0 | 0 | 144 | 0 | 2978 | 20 | 0 | 0 | 0 | 43 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | 0.999 | | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2787 | 0 | 4936 | 0 | 0 | 0 | 0 | 1736 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2787 | 0 | 4936 | 0 | 0 | 0 | 0 | 1736 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 45 | | | 45 | | 25 | |
| Link Distance (ft) | 478 | | | | 179 | | | 784 | | 210 | |
| Travel Time (s) | 9.3 | | | | 2.7 | | | 11.9 | | 5.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 5% | 2% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 160 | 0 | 3309 | 22 | 0 | 0 | 0 | 48 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 160 | 0 | 3331 | 0 | 0 | 0 | 0 | 48 | 0 |
| Turn Type | | | Perm | | NA | | | | | Prot | |
| Protected Phases | | | | | 2 | | | | | 4 | |
| Permitted Phases | | | 8 | | | | | | | | |
| Detector Phase | | | 8 | | 2 | | | | | 4 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 12.0 | | | | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 19.0 | | | | | 14.0 | |
| Total Split (s) | | | 14.0 | | 76.0 | | | | | 14.0 | |
| Total Split (%) | | | 15.6% | | 84.4% | | | | | 15.6% | |
| Maximum Green (s) | | | 7.0 | | 69.0 | | | | | 7.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | | | | | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | -2.0 | | | | | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | | | | | 3.0 | |
| Recall Mode | | | None | | C-Min | | | | | None | |
| Act Effct Green (s) | | | 9.0 | | 71.0 | | | | | 9.0 | |
| Actuated g/C Ratio | | | 0.10 | | 0.79 | | | | | 0.10 | |
| v/c Ratio | | | 0.58 | | 0.86 | | | | | 0.28 | |
| Control Delay | | | 47.5 | | 4.2 | | | | | 42.0 | |
| Queue Delay | | | 0.0 | | 0.0 | | | | | 0.0 | |
| Total Delay | | | 47.5 | | 4.2 | | | | | 42.0 | |
| LOS | | | D | | A | | | | | D | |
| Approach Delay | 47.5 | | | | 4.2 | | | | | 42.0 | |
| Approach LOS | D | | | | A | | | | | D | |
| Queue Length 50th (ft) | | | 50 | | 183 | | | | | 26 | |
| Queue Length 95th (ft) | | | 85 | | m208 | | | | | 60 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 398 | | | | 99 | | | 704 | | 130 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 278 | | 3893 | | | | | 173 | |
| Starvation Cap Reductn | | | 0 | | 0 | | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | | | | | 0 | |
| Reduced v/c Ratio | | | 0.58 | | 0.86 | | | | | 0.28 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 25 (28%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 65 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.86 | | | |
| Intersection Signal Delay: 6.7 | | Intersection LOS: A | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 81: NB US 321 & 15th Avenue NW & 15th Avenue NW Left-Over



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 32 | 0 | 0 | 0 | 0 | 2024 |
| Future Volume (vph) | 32 | 0 | 0 | 0 | 0 | 2024 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1719 | 0 | 0 | 0 | 0 | 4988 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1719 | 0 | 0 | 0 | 0 | 4988 |
| Link Speed (mph) | 25 | | 45 | | | 45 |
| Link Distance (ft) | 85 | | 652 | | | 641 |
| Travel Time (s) | 2.3 | | 9.9 | | | 9.7 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 36 | 0 | 0 | 0 | 0 | 2249 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 36 | 0 | 0 | 0 | 0 | 2249 |
| Sign Control | Stop | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 105.5% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 32 | 0 | 0 | 0 | 0 | 2024 |
| Future Volume (Veh/h) | 32 | 0 | 0 | 0 | 0 | 2024 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 36 | 0 | 0 | 0 | 0 | 2249 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 750 | 0 | | | 0 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 750 | 0 | | | 0 | |
| tC, single (s) | 6.9 | 6.9 | | | 4.2 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 89 | 100 | | | 100 | |
| cM capacity (veh/h) | 341 | 1084 | | | 1607 | |

| Direction, Lane # | WB 1 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|
| Volume Total | 36 | 750 | 750 | 750 |
| Volume Left | 36 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 |
| cSH | 341 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.11 | 0.44 | 0.44 | 0.44 |
| Queue Length 95th (ft) | 9 | 0 | 0 | 0 |
| Control Delay (s) | 16.8 | 0.0 | 0.0 | 0.0 |
| Lane LOS | C | | | |
| Approach Delay (s) | 16.8 | 0.0 | | |
| Approach LOS | C | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.3 | | |
| Intersection Capacity Utilization | 105.5% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 32 | 0 | 0 | 0 | 0 | 2024 |
| Future Vol, veh/h | 32 | 0 | 0 | 0 | 0 | 2024 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 5 | 2 | 4 | 4 | 4 | 4 |
| Mvmt Flow | 36 | 0 | 0 | 0 | 0 | 2249 |

| Major/Minor | Minor1 | | Major2 | |
|---|---|---|---|---|
| Conflicting Flow All | 900 | - | - | - |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 900 | - | - | - |
| Critical Hdwy | 5.8 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | 6.1 | - | - | - |
| Follow-up Hdwy | 3.85 | - | - | - |
| Pot Cap-1 Maneuver | 342 | 0 | 0 | - |
| Stage 1 | - | 0 | 0 | - |
| Stage 2 | 317 | 0 | 0 | - |
| Platoon blocked, % | | | | - |
| Mov Cap-1 Maneuver | 342 | - | - | - |
| Mov Cap-2 Maneuver | 342 | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | 317 | - | - | - |

| Approach | WB | SB |
|---|---|---|
| HCM Control Delay, s | 16.7 | 0 |
| HCM LOS | C | |

| Minor Lane/Major Mvmt | WBLn1 | SBT |
|---|---|---|
| Capacity (veh/h) | 342 | - |
| HCM Lane V/C Ratio | 0.104 | - |
| HCM Control Delay (s) | 16.7 | - |
| HCM Lane LOS | C | - |
| HCM 95th %tile Q(veh) | 0.3 | - |

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 52 | 0 | 0 | 0 | 0 | 1998 | 15 | 14 | 0 |
| Future Volume (vph) | 0 | 0 | 52 | 0 | 0 | 0 | 0 | 1998 | 15 | 14 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 | 0.91 | 1.00 | 1.00 |
| Frt | | | 0.865 | | | | | 0.999 | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 1565 | 0 | 0 | 0 | 0 | 4983 | 0 | 1736 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 1565 | 0 | 0 | 0 | 0 | 4983 | 0 | 1736 | 0 |
| Link Speed (mph) | 35 | | | | 45 | | | 45 | | 25 | |
| Link Distance (ft) | 560 | | | | 842 | | | 224 | | 173 | |
| Travel Time (s) | 10.9 | | | | 12.8 | | | 3.4 | | 4.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 4% | 4% | 4% | 4% | 4% | 4% | 4% | 0% |
| Adj. Flow (vph) | 0 | 0 | 58 | 0 | 0 | 0 | 0 | 2220 | 17 | 16 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 58 | 0 | 0 | 0 | 0 | 2237 | 0 | 16 | 0 |
| Sign Control | Stop | | | | Free | | | Free | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 48.9% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

| Movement | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 52 | 0 | 0 | 0 | 0 | 1998 | 15 | 14 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 52 | 0 | 0 | 0 | 0 | 1998 | 15 | 14 | 0 |
| Sign Control | Stop | | | | Free | | | Free | | Stop | |
| Grade | 0% | | | | 0% | | | 0% | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 58 | 0 | 0 | 0 | 0 | 2220 | 17 | 16 | 0 |
| Pedestrians | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | |
| Median type | | | | | None | | | None | | | |
| Median storage veh) | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | |
| vC, conflicting volume | 2236 | 2228 | 748 | 2237 | | | 0 | | | 2237 | 0 |
| vC1, stage 1 conf vol | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | |
| vCu, unblocked vol | 2236 | 2228 | 748 | 2237 | | | 0 | | | 2237 | 0 |
| tC, single (s) | 7.6 | 6.6 | 7.0 | 4.2 | | | 4.2 | | | 6.6 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | | 4.0 | 3.3 |
| p0 queue free % | 100 | 100 | 83 | 100 | | | 100 | | | 61 | 100 |
| cM capacity (veh/h) | 16 | 41 | 348 | 222 | | | 1607 | | | 41 | 1091 |

| Direction, Lane # | EB 1 | SB 1 | SB 2 | SB 3 | NW 1 |
|---|---|---|---|---|---|
| Volume Total | 58 | 888 | 888 | 461 | 16 |
| Volume Left | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 58 | 0 | 0 | 17 | 0 |
| cSH | 348 | 1700 | 1700 | 1700 | 41 |
| Volume to Capacity | 0.17 | 0.52 | 0.52 | 0.27 | 0.39 |
| Queue Length 95th (ft) | 15 | 0 | 0 | 0 | 34 |
| Control Delay (s) | 17.4 | 0.0 | 0.0 | 0.0 | 141.6 |
| Lane LOS | C | | | | F |
| Approach Delay (s) | 17.4 | 0.0 | | | 141.6 |
| Approach LOS | C | | | | F |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 1.4 | | | |
| Intersection Capacity Utilization | 48.9% | ICU Level of Service | | A |
| Analysis Period (min) | 15 | | | |

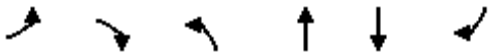
| Intersection | |
|---|---|
| Int Delay, s/veh | 1.1 |

| Movement | EBL | EBR | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 1998 | 15 | 14 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 1998 | 15 | 14 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | - | - | - | None | - | - | None | - | None |
| Storage Length | - | 0 | - | - | - | - | - | - | 0 | - |
| Veh in Median Storage, # | 0 | - | - | - | - | - | 0 | - | 0 | - |
| Grade, % | 0 | - | - | 0 | - | - | 0 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 0 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 2220 | 17 | 16 | 0 |

| Major/Minor | Minor2 | | | | | Major2 | | | Minor1 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 1118 | | | | - | - | 0 | 888 | - |
| Stage 1 | - | - | | | | - | - | - | 0 | - |
| Stage 2 | - | - | | | | - | - | - | 888 | - |
| Critical Hdwy | - | 7.2 | | | | - | - | - | 6.48 | - |
| Critical Hdwy Stg 1 | - | - | | | | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | | | | - | - | - | 6.78 | - |
| Follow-up Hdwy | - | 3.95 | | | | - | - | - | 3.84 | - |
| Pot Cap-1 Maneuver | 0 | 169 | | | | 0 | - | - | 293 | 0 |
| Stage 1 | 0 | - | | | | 0 | - | - | - | 0 |
| Stage 2 | 0 | - | | | | 0 | - | - | 272 | 0 |
| Platoon blocked, % | | | | | | | - | - | | |
| Mov Cap-1 Maneuver | - | 169 | | | | - | - | - | 193 | - |
| Mov Cap-2 Maneuver | - | - | | | | - | - | - | 193 | - |
| Stage 1 | - | - | | | | - | - | - | - | - |
| Stage 2 | - | - | | | | - | - | - | 179 | - |

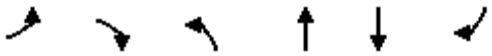
| Approach | EB | SB | NW |
|---|---|---|---|
| HCM Control Delay, s | 37 | 0 | 25.3 |
| HCM LOS | E | | D |

| Minor Lane/Major Mvmt | NWLn1 | EBLn1 | SBT | SBR |
|---|---|---|---|---|
| Capacity (veh/h) | 193 | 169 | - | - |
| HCM Lane V/C Ratio | 0.081 | 0.342 | - | - |
| HCM Control Delay (s) | 25.3 | 37 | - | - |
| HCM Lane LOS | D | E | - | - |
| HCM 95th %tile Q(veh) | 0.3 | 1.4 | - | - |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 30 | 0 | 0 | 2982 | 0 | 0 |
| Future Volume (vph) | 30 | 0 | 0 | 2982 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1719 | 0 | 0 | 4940 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1719 | 0 | 0 | 4940 | 0 | 0 |
| Link Speed (mph) | 25 | | | 45 | 45 | |
| Link Distance (ft) | 53 | | | 939 | 719 | |
| Travel Time (s) | 1.4 | | | 14.2 | 10.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 2% | 5% | 5% | 4% | 4% |
| Adj. Flow (vph) | 33 | 0 | 0 | 3313 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 33 | 0 | 0 | 3313 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 67.6% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 30 | 0 | 0 | 2982 | 0 | 0 |
| Future Volume (Veh/h) | 30 | 0 | 0 | 2982 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 33 | 0 | 0 | 3313 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1104 | 0 | 0 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1104 | 0 | 0 | | | |
| tC, single (s) | 6.9 | 6.9 | 4.2 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 84 | 100 | 100 | | | |
| cM capacity (veh/h) | 200 | 1084 | 1600 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | NB 3 |
|---|---|---|---|---|
| Volume Total | 33 | 1104 | 1104 | 1104 |
| Volume Left | 33 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 |
| cSH | 200 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.16 | 0.65 | 0.65 | 0.65 |
| Queue Length 95th (ft) | 14 | 0 | 0 | 0 |
| Control Delay (s) | 26.5 | 0.0 | 0.0 | 0.0 |
| Lane LOS | D | | | |
| Approach Delay (s) | 26.5 | 0.0 | | |
| Approach LOS | D | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.3 | | |
| Intersection Capacity Utilization | 67.6% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

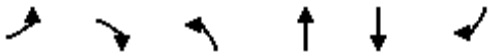
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 30 | 0 | 0 | 2982 | 0 | 0 |
| Future Vol, veh/h | 30 | 0 | 0 | 2982 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | - | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 5 | 2 | 5 | 5 | 4 | 4 |
| Mvmt Flow | 33 | 0 | 0 | 3313 | 0 | 0 |

| Major/Minor | Minor2 | | Major1 | |
|---|---|---|---|---|
| Conflicting Flow All | 1325 | - | - | 0 |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 1325 | - | - | - |
| Critical Hdwy | 5.8 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | 6.1 | - | - | - |
| Follow-up Hdwy | 3.85 | - | - | - |
| Pot Cap-1 Maneuver | 207 | 0 | 0 | - |
| Stage 1 | - | 0 | 0 | - |
| Stage 2 | 185 | 0 | 0 | - |
| Platoon blocked, % | | | | - |
| Mov Cap-1 Maneuver | 207 | - | - | - |
| Mov Cap-2 Maneuver | 207 | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | 185 | - | - | - |

| Approach | EB | NB |
|---|---|---|
| HCM Control Delay, s | 25.7 | 0 |
| HCM LOS | D | |

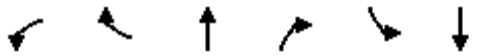
| Minor Lane/Major Mvmt | NBT | EBLn1 |
|---|---|---|
| Capacity (veh/h) | - | 207 |
| HCM Lane V/C Ratio | - | 0.161 |
| HCM Control Delay (s) | - | 25.7 |
| HCM Lane LOS | - | D |
| HCM 95th %tile Q(veh) | - | 0.6 |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 32 | 3090 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 32 | 3090 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 200 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 50 | | 50 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1719 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1719 | 4988 | 0 | 0 |
| Link Speed (mph) | 25 | | | 45 | 45 | |
| Link Distance (ft) | 85 | | | 784 | 717 | |
| Travel Time (s) | 2.3 | | | 11.9 | 10.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 5% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 36 | 3433 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 36 | 3433 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 105.5% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 43 | 2013 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 43 | 2013 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 500 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1736 | 4988 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1736 | 4988 |
| Link Speed (mph) | 55 | | 45 | | | 45 |
| Link Distance (ft) | 210 | | 224 | | | 652 |
| Travel Time (s) | 2.6 | | 3.4 | | | 9.9 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 48 | 2237 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 48 | 2237 |
| Sign Control | Stop | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 49.1% | | ICU Level of Service A | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | SEL | SET | NWT | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 30 | 2020 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 30 | 2020 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 250 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 50 | | 50 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Link Speed (mph) | 55 | | | 45 | 45 | |
| Link Distance (ft) | 53 | | | 842 | 889 | |
| Travel Time (s) | 0.7 | | | 12.8 | 13.5 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 5% | 5% |
| Adj. Flow (vph) | 0 | 0 | 33 | 2244 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 33 | 2244 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 67.6% | ICU Level of Service | C |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | EBL | EBR | SET | SER | NWL | NWT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 14 | 2998 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 14 | 2998 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 200 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1736 | 4988 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1736 | 4988 |
| Link Speed (mph) | 25 | | 45 | | | 45 |
| Link Distance (ft) | 173 | | 179 | | | 719 |
| Travel Time (s) | 4.7 | | 2.7 | | | 10.9 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 16 | 3331 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 16 | 3331 |
| Sign Control | Stop | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 130.0% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 182 | 18 | 2690 | 453 | 0 | 1861 |
| Future Volume (vph) | 182 | 18 | 2690 | 453 | 0 | 1861 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 500 | 500 | | 550 | 0 | |
| Storage Lanes | 1 | 1 | | 1 | 0 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 0.97 | 0.88 | 0.91 | 1.00 | 1.00 | 0.91 |
| Frt | | 0.850 | | 0.850 | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 3433 | 2787 | 4988 | 1553 | 0 | 4988 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 3433 | 2787 | 4988 | 1553 | 0 | 4988 |
| Right Turn on Red | | No | | No | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 35 | | 55 | | | 55 |
| Link Distance (ft) | 986 | | 624 | | | 167 |
| Travel Time (s) | 19.2 | | 7.7 | | | 2.1 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 202 | 20 | 2989 | 503 | 0 | 2068 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 202 | 20 | 2989 | 503 | 0 | 2068 |
| Turn Type | Prot | Prot | NA | Free | | NA |
| Protected Phases | 8 | 8 | 2 | | | 6 |
| Permitted Phases | | | | Free | | |
| Detector Phase | 8 | 8 | 2 | | | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 7.0 | 7.0 | 14.0 | | | 14.0 |
| Minimum Split (s) | 14.0 | 14.0 | 21.0 | | | 21.0 |
| Total Split (s) | 15.0 | 15.0 | 75.0 | | | 75.0 |
| Total Split (%) | 16.7% | 16.7% | 83.3% | | | 83.3% |
| Maximum Green (s) | 8.0 | 8.0 | 68.0 | | | 68.0 |
| Yellow Time (s) | 5.0 | 5.0 | 5.0 | | | 5.0 |
| All-Red Time (s) | 2.0 | 2.0 | 2.0 | | | 2.0 |
| Lost Time Adjust (s) | -2.0 | -2.0 | -2.0 | | | -2.0 |
| Total Lost Time (s) | 5.0 | 5.0 | 5.0 | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | 3.0 | 3.0 | | | 3.0 |
| Recall Mode | None | None | C-Min | | | C-Min |
| Act Effct Green (s) | 9.9 | 9.9 | 70.1 | 90.0 | | 70.1 |
| Actuated g/C Ratio | 0.11 | 0.11 | 0.78 | 1.00 | | 0.78 |
| v/c Ratio | 0.53 | 0.07 | 0.77 | 0.32 | | 0.53 |
| Control Delay | 43.5 | 36.5 | 2.2 | 0.3 | | 4.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | | 0.0 |
| Total Delay | 43.5 | 36.5 | 2.2 | 0.3 | | 4.4 |
| LOS | D | D | A | A | | A |
| Approach Delay | 42.8 | | 2.0 | | | 4.4 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Approach LOS | D | | A | | | A |
| Queue Length 50th (ft) | 56 | 5 | 41 | 0 | | 126 |
| Queue Length 95th (ft) | 91 | 18 | 56 | m0 | | 150 |
| Internal Link Dist (ft) | 906 | | 544 | | | 87 |
| Turn Bay Length (ft) | 500 | 500 | | 550 | | |
| Base Capacity (vph) | 381 | 309 | 3882 | 1553 | | 3882 |
| Starvation Cap Reductn | 0 | 0 | 0 | 0 | | 0 |
| Spillback Cap Reductn | 0 | 0 | 0 | 0 | | 0 |
| Storage Cap Reductn | 0 | 0 | 0 | 0 | | 0 |
| Reduced v/c Ratio | 0.53 | 0.06 | 0.77 | 0.32 | | 0.53 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green, Master Intersection | | | |
| Natural Cycle: 60 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.77 | | | |
| Intersection Signal Delay: 4.4 | | Intersection LOS: A | |
| Intersection Capacity Utilization 66.1% | | ICU Level of Service C | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 91: US 321 & Grace Chapel Road

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 4 | 0 | 0 | 0 | 0 | 1861 |
| Future Volume (vph) | 4 | 0 | 0 | 0 | 0 | 1861 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 500 | |
| Storage Lanes | 1 | 0 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 0 | 0 | 0 | 0 | 4988 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 0 | 0 | 0 | 0 | 4988 |
| Link Speed (mph) | 25 | | 55 | | | 55 |
| Link Distance (ft) | 91 | | 428 | | | 2189 |
| Travel Time (s) | 2.5 | | 5.3 | | | 27.1 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 4 | 0 | 0 | 0 | 0 | 2068 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 4 | 0 | 0 | 0 | 0 | 2068 |
| Sign Control | Stop | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 55.7% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 4 | 0 | 0 | 0 | 0 | 1861 |
| Future Volume (Veh/h) | 4 | 0 | 0 | 0 | 0 | 1861 |
| Sign Control | Stop | | Free | | | Free |
| Grade | 0% | | 0% | | | 0% |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 4 | 0 | 0 | 0 | 0 | 2068 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | | None |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 689 | 0 | | | 0 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 689 | 0 | | | 0 | |
| tC, single (s) | 6.9 | 6.9 | | | 4.2 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | | | 2.2 | |
| p0 queue free % | 99 | 100 | | | 100 | |
| cM capacity (veh/h) | 375 | 1084 | | | 1607 | |

| Direction, Lane # | WB 1 | SB 1 | SB 2 | SB 3 |
|---|---|---|---|---|
| Volume Total | 4 | 689 | 689 | 689 |
| Volume Left | 4 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 |
| cSH | 375 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.01 | 0.41 | 0.41 | 0.41 |
| Queue Length 95th (ft) | 1 | 0 | 0 | 0 |
| Control Delay (s) | 14.7 | 0.0 | 0.0 | 0.0 |
| Lane LOS | B | | | |
| Approach Delay (s) | 14.7 | 0.0 | | |
| Approach LOS | B | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.0 | | |
| Intersection Capacity Utilization | 55.7% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

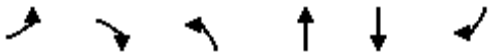
| Intersection | |
|---|---|
| Int Delay, s/veh | 0 |

| Movement | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 4 | 0 | 0 | 0 | 0 | 1861 |
| Future Vol, veh/h | 4 | 0 | 0 | 0 | 0 | 1861 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | 500 | - |
| Veh in Median Storage, # | 0 | - | - | - | - | 0 |
| Grade, % | 0 | - | 0 | - | - | 0 |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 4 | 2 | 4 | 4 | 4 | 4 |
| Mvmt Flow | 4 | 0 | 0 | 0 | 0 | 2068 |

| Major/Minor | Minor1 | | Major2 | |
|---|---|---|---|---|
| Conflicting Flow All | 827 | - | - | - |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 827 | - | - | - |
| Critical Hdwy | 5.78 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | 6.08 | - | - | - |
| Follow-up Hdwy | 3.84 | - | - | - |
| Pot Cap-1 Maneuver | 374 | 0 | 0 | - |
| Stage 1 | - | 0 | 0 | - |
| Stage 2 | 349 | 0 | 0 | - |
| Platoon blocked, % | | | | - |
| Mov Cap-1 Maneuver | 374 | - | - | - |
| Mov Cap-2 Maneuver | 374 | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | 349 | - | - | - |

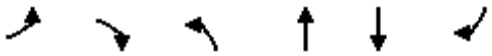
| Approach | WB | SB |
|---|---|---|
| HCM Control Delay, s | 14.7 | 0 |
| HCM LOS | B | |

| Minor Lane/Major Mvmt | WBLn1 | SBT |
|---|---|---|
| Capacity (veh/h) | 374 | - |
| HCM Lane V/C Ratio | 0.012 | - |
| HCM Control Delay (s) | 14.7 | - |
| HCM Lane LOS | B | - |
| HCM 95th %tile Q(veh) | 0 | - |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 29 | 0 | 0 | 3114 | 0 | 0 |
| Future Volume (vph) | 29 | 0 | 0 | 3114 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 0 | 0 | 4988 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 0 | 0 | 4988 | 0 | 0 |
| Link Speed (mph) | 25 | | | 45 | 55 | |
| Link Distance (ft) | 169 | | | 796 | 599 | |
| Travel Time (s) | 4.6 | | | 12.1 | 7.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 32 | 0 | 0 | 3460 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 32 | 0 | 0 | 3460 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 105.7% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 29 | 0 | 0 | 3114 | 0 | 0 |
| Future Volume (Veh/h) | 29 | 0 | 0 | 3114 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 32 | 0 | 0 | 3460 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1153 | 0 | 0 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1153 | 0 | 0 | | | |
| tC, single (s) | 6.9 | 6.9 | 4.2 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 83 | 100 | 100 | | | |
| cM capacity (veh/h) | 188 | 1084 | 1607 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | NB 3 |
|---|---|---|---|---|
| Volume Total | 32 | 1153 | 1153 | 1153 |
| Volume Left | 32 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 |
| cSH | 188 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.17 | 0.68 | 0.68 | 0.68 |
| Queue Length 95th (ft) | 15 | 0 | 0 | 0 |
| Control Delay (s) | 28.1 | 0.0 | 0.0 | 0.0 |
| Lane LOS | D | | | |
| Approach Delay (s) | 28.1 | 0.0 | | |
| Approach LOS | D | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.3 | | |
| Intersection Capacity Utilization | 105.7% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

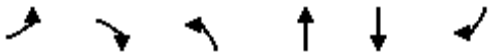
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.3 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 29 | 0 | 0 | 3114 | 0 | 0 |
| Future Vol, veh/h | 29 | 0 | 0 | 3114 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | - | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 4 | 2 | 4 | 4 | 4 | 4 |
| Mvmt Flow | 32 | 0 | 0 | 3460 | 0 | 0 |

| Major/Minor | Minor2 | | Major1 | |
|---|---|---|---|---|
| Conflicting Flow All | 1384 | - | - | 0 |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 1384 | - | - | - |
| Critical Hdwy | 5.78 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | 6.08 | - | - | - |
| Follow-up Hdwy | 3.84 | - | - | - |
| Pot Cap-1 Maneuver | 194 | 0 | 0 | - |
| Stage 1 | - | 0 | 0 | - |
| Stage 2 | 173 | 0 | 0 | - |
| Platoon blocked, % | | | | - |
| Mov Cap-1 Maneuver | 194 | - | - | - |
| Mov Cap-2 Maneuver | 194 | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | 173 | - | - | - |

| Approach | EB | NB |
|---|---|---|
| HCM Control Delay, s | 27.2 | 0 |
| HCM LOS | D | |

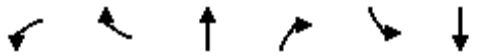
| Minor Lane/Major Mvmt | NBT | EBLn1 |
|---|---|---|
| Capacity (veh/h) | - | 194 |
| HCM Lane V/C Ratio | - | 0.166 |
| HCM Control Delay (s) | - | 27.2 |
| HCM Lane LOS | - | D |
| HCM 95th %tile Q(veh) | - | 0.6 |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 4 | 2708 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 4 | 2708 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 200 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 50 | | 40 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1736 | 4988 | 0 | 0 |
| Link Speed (mph) | 30 | | | 55 | 55 | |
| Link Distance (ft) | 91 | | | 347 | 2226 | |
| Travel Time (s) | 2.1 | | | 4.3 | 27.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 4 | 3009 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 4 | 3009 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 55.7% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 29 | 2014 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 29 | 2014 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 350 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1736 | 4988 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1736 | 4988 |
| Link Speed (mph) | 30 | | 45 | | | 55 |
| Link Distance (ft) | 169 | | 960 | | | 435 |
| Travel Time (s) | 3.8 | | 14.5 | | | 5.4 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 32 | 2238 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 32 | 2238 |
| Sign Control | Stop | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 128.4% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 2043 | 0 | 3143 |
| Future Volume (vph) | 0 | 0 | 0 | 2043 | 0 | 3143 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 0.76 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 0 | 0 | 4988 | 0 | 3541 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 0 | 0 | 4988 | 0 | 3541 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 435 | | | 624 | 599 | |
| Travel Time (s) | 5.4 | | | 7.7 | 7.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 2270 | 0 | 3492 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 2270 | 0 | 3492 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 119.4% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 2708 | 0 | 0 | 0 | 1861 |
| Future Volume (vph) | 0 | 2708 | 0 | 0 | 0 | 1861 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 0.76 |
| Frt | | | | | | 0.850 |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 4988 | 0 | 0 | 0 | 3541 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 4988 | 0 | 0 | 0 | 3541 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 167 | 347 | | 428 | |
| Travel Time (s) | | 2.1 | 4.3 | | 5.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 2% | 2% | 4% | 4% |
| Adj. Flow (vph) | 0 | 3009 | 0 | 0 | 0 | 2068 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 3009 | 0 | 0 | 0 | 2068 |
| Sign Control | | Free | Stop | | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 55.7% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

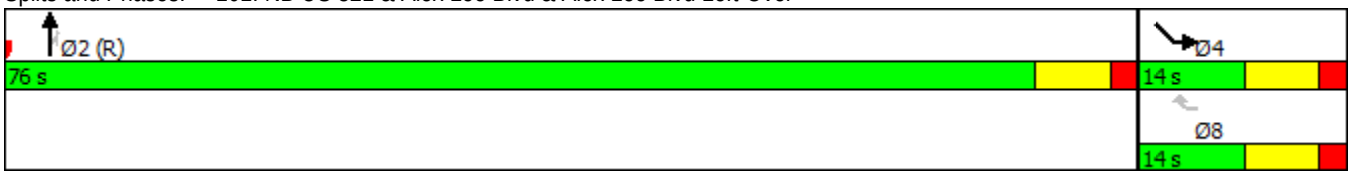
| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 104 | 0 | 2343 | 80 | 0 | 0 | 0 | 36 | 0 |
| Future Volume (vph) | 0 | 0 | 104 | 0 | 2343 | 80 | 0 | 0 | 0 | 36 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | | 0 | 250 | | 0 | 0 | 0 |
| Storage Lanes | 0 | 2 | | 0 | | 1 | 0 | | 0 | 1 | 0 |
| Taper Length (ft) | 50 | | | 50 | | | 50 | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2538 | 0 | 3471 | 1442 | 0 | 0 | 0 | 1612 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2538 | 0 | 3471 | 1442 | 0 | 0 | 0 | 1612 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 682 | | | | 200 | | | 676 | | 124 | |
| Travel Time (s) | 13.3 | | | | 2.5 | | | 8.4 | | 3.4 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 12% | 12% | 12% | 2% | 4% | 12% | 12% | 4% | 4% | 12% | 4% |
| Adj. Flow (vph) | 0 | 0 | 116 | 0 | 2603 | 89 | 0 | 0 | 0 | 40 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 116 | 0 | 2603 | 89 | 0 | 0 | 0 | 40 | 0 |
| Turn Type | | | Perm | | NA | Perm | | | | Prot | |
| Protected Phases | | | | | 2 | | | | | 4 | |
| Permitted Phases | | | 8 | | | 2 | | | | | |
| Detector Phase | | | 8 | | 2 | 2 | | | | 4 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 14.0 | 14.0 | | | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 21.0 | 21.0 | | | | 14.0 | |
| Total Split (s) | | | 14.0 | | 76.0 | 76.0 | | | | 14.0 | |
| Total Split (%) | | | 15.6% | | 84.4% | 84.4% | | | | 15.6% | |
| Maximum Green (s) | | | 7.0 | | 69.0 | 69.0 | | | | 7.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | 5.0 | | | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | 2.0 | | | | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | -2.0 | -2.0 | | | | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | 5.0 | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | 3.0 | | | | 3.0 | |
| Recall Mode | | | None | | C-Min | C-Min | | | | None | |
| Act Effct Green (s) | | | 9.0 | | 74.8 | 74.8 | | | | 9.0 | |
| Actuated g/C Ratio | | | 0.10 | | 0.83 | 0.83 | | | | 0.10 | |
| v/c Ratio | | | 0.46 | | 0.90 | 0.07 | | | | 0.25 | |
| Control Delay | | | 44.6 | | 6.3 | 0.2 | | | | 41.2 | |
| Queue Delay | | | 0.0 | | 0.0 | 0.0 | | | | 0.0 | |
| Total Delay | | | 44.6 | | 6.3 | 0.2 | | | | 41.2 | |
| LOS | | | D | | A | A | | | | D | |
| Approach Delay | 44.6 | | | | 6.1 | | | | | 41.2 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | D | | | | A | | | | | D | |
| Queue Length 50th (ft) | | | 35 | | 37 | 0 | | | | 23 | |
| Queue Length 95th (ft) | | | 65 | | #906 | m1 | | | | m40 | |
| Internal Link Dist (ft) | 602 | | | | 120 | | | 596 | | 44 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 253 | | 2885 | 1198 | | | | 161 | |
| Starvation Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Reduced v/c Ratio | | | 0.46 | | 0.90 | 0.07 | | | | 0.25 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 43 (48%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.90 | | | |
| Intersection Signal Delay: 8.2 | | Intersection LOS: A | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 101: NB US 321 & Alex Lee Blvd & Alex Lee Blvd Left-Over



| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 1601 | 90 | 0 |
| Future Volume (vph) | 0 | 0 | 0 | 1601 | 90 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 3505 | 1203 | 0 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 3505 | 1203 | 0 |
| Link Speed (mph) | 30 | | | 55 | 25 | |
| Link Distance (ft) | 653 | | | 1220 | 102 | |
| Travel Time (s) | 14.8 | | | 15.1 | 2.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 3% | 50% | 2% |
| Adj. Flow (vph) | 0 | 0 | 0 | 1779 | 100 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 1779 | 100 | 0 |
| Sign Control | Free | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 116.1% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

| Movement | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 1601 | 90 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 1601 | 90 | 0 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 1779 | 100 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 0 | | 890 | 0 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 0 | | 890 | 0 |
| tC, single (s) | | | 4.2 | | 7.8 | 6.9 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 4.0 | 3.3 |
| p0 queue free % | | | 100 | | 52 | 100 |
| cM capacity (veh/h) | | | 1607 | | 206 | 1084 |

| Direction, Lane # | SB 1 | SB 2 | NW 1 |
|---|---|---|---|
| Volume Total | 890 | 890 | 100 |
| Volume Left | 0 | 0 | 100 |
| Volume Right | 0 | 0 | 0 |
| cSH | 1700 | 1700 | 206 |
| Volume to Capacity | 0.52 | 0.52 | 0.48 |
| Queue Length 95th (ft) | 0 | 0 | 60 |
| Control Delay (s) | 0.0 | 0.0 | 37.9 |
| Lane LOS | | | E |
| Approach Delay (s) | 0.0 | | 37.9 |
| Approach LOS | | | E |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.0 | | |
| Intersection Capacity Utilization | 116.1% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

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

| Movement | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | ↑↑ | ↰ | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 1601 | 90 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 1601 | 90 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | - | - | - | - | 0 | - |
| Veh in Median Storage, # | - | - | - | 0 | 0 | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 4 | 4 | 4 | 3 | 50 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 1779 | 100 | 0 |

| Major/Minor | Major2 | | Minor1 | |
|---|---|---|---|---|
| Conflicting Flow All | - | - | 889 | - |
| Stage 1 | - | - | 0 | - |
| Stage 2 | - | - | 889 | - |
| Critical Hdwy | - | - | 7.8 | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | 6.8 | - |
| Follow-up Hdwy | - | - | 4 | - |
| Pot Cap-1 Maneuver | 0 | - | 206 | 0 |
| Stage 1 | 0 | - | - | 0 |
| Stage 2 | 0 | - | 264 | 0 |
| Platoon blocked, % | | - | | |
| Mov Cap-1 Maneuver | - | - | 206 | - |
| Mov Cap-2 Maneuver | - | - | 206 | - |
| Stage 1 | - | - | - | - |
| Stage 2 | - | - | 264 | - |

| Approach | SB | NW |
|---|---|---|
| HCM Control Delay, s | 0 | 37.9 |
| HCM LOS | | E |

| Minor Lane/Major Mvmt | NWLn1 | SBT |
|---|---|---|
| Capacity (veh/h) | 206 | - |
| HCM Lane V/C Ratio | 0.485 | - |
| HCM Control Delay (s) | 37.9 | - |
| HCM Lane LOS | E | - |
| HCM 95th %tile Q(veh) | 2.4 | - |

| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 1654 | 4 | 4 | 0 |
| Future Volume (vph) | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 1654 | 4 | 4 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.865 | | | | | | 0.850 | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 1565 | 0 | 0 | 0 | 0 | 3471 | 1553 | 1719 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 1565 | 0 | 0 | 0 | 0 | 3471 | 1553 | 1719 | 0 |
| Link Speed (mph) | 35 | | | | 30 | | | 55 | | 25 | |
| Link Distance (ft) | 227 | | | | 766 | | | 154 | | 171 | |
| Travel Time (s) | 4.4 | | | | 17.4 | | | 1.9 | | 4.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 5% | 5% | 5% | 4% | 4% | 4% | 4% | 4% | 4% | 5% | 2% |
| Adj. Flow (vph) | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 1838 | 4 | 4 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 1838 | 4 | 4 | 0 |
| Sign Control | Stop | | | | Free | | | Free | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 55.7% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

| Movement | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 1654 | 4 | 4 | 0 |
| Future Volume (Veh/h) | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 1654 | 4 | 4 | 0 |
| Sign Control | Stop | | | | Free | | | Free | | Stop | |
| Grade | 0% | | | | 0% | | | 0% | | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 1838 | 4 | 4 | 0 |
| Pedestrians | | | | | | | | | | | |
| Lane Width (ft) | | | | | | | | | | | |
| Walking Speed (ft/s) | | | | | | | | | | | |
| Percent Blockage | | | | | | | | | | | |
| Right turn flare (veh) | | | | | | | | | | | |
| Median type | | | | | None | | | None | | | |
| Median storage veh) | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | |
| vC, conflicting volume | 1840 | 1838 | 919 | 1842 | | | 0 | | | 1842 | 0 |
| vC1, stage 1 conf vol | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | |
| vCu, unblocked vol | 1840 | 1838 | 919 | 1842 | | | 0 | | | 1842 | 0 |
| tC, single (s) | 7.6 | 6.6 | 7.0 | 4.2 | | | 4.2 | | | 6.6 | 6.9 |
| tC, 2 stage (s) | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | | 4.0 | 3.3 |
| p0 queue free % | 100 | 100 | 90 | 100 | | | 100 | | | 94 | 100 |
| cM capacity (veh/h) | 43 | 72 | 268 | 318 | | | 1607 | | | 72 | 1084 |

| Direction, Lane # | EB 1 | SB 1 | SB 2 | SB 3 | NW 1 |
|---|---|---|---|---|---|
| Volume Total | 28 | 919 | 919 | 4 | 4 |
| Volume Left | 0 | 0 | 0 | 0 | 0 |
| Volume Right | 28 | 0 | 0 | 4 | 0 |
| cSH | 268 | 1700 | 1700 | 1700 | 72 |
| Volume to Capacity | 0.10 | 0.54 | 0.54 | 0.00 | 0.06 |
| Queue Length 95th (ft) | 9 | 0 | 0 | 0 | 4 |
| Control Delay (s) | 20.0 | 0.0 | 0.0 | 0.0 | 57.9 |
| Lane LOS | C | | | | F |
| Approach Delay (s) | 20.0 | 0.0 | | | 57.9 |
| Approach LOS | C | | | | F |

| Intersection Summary | | | | |
|---|---|---|---|---|
| Average Delay | 0.4 | | | |
| Intersection Capacity Utilization | 55.7% | ICU Level of Service | | B |
| Analysis Period (min) | 15 | | | |

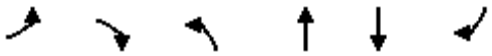
| Intersection | |
|---|---|
| Int Delay, s/veh | 0.4 |

| Movement | EBL | EBR | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | |
| Traffic Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 1654 | 4 | 4 | 0 |
| Future Vol, veh/h | 0 | 0 | 0 | 0 | 0 | 0 | 1654 | 4 | 4 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free | Free | Free | Stop | Stop |
| RT Channelized | - | - | - | - | None | - | - | None | - | None |
| Storage Length | - | 0 | - | - | - | - | - | 0 | 0 | - |
| Veh in Median Storage, # | 0 | - | - | - | - | - | 0 | - | 0 | - |
| Grade, % | 0 | - | - | 0 | - | - | 0 | - | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 5 | 5 | 4 | 4 | 4 | 4 | 4 | 4 | 5 | 2 |
| Mvmt Flow | 0 | 0 | 0 | 0 | 0 | 0 | 1838 | 4 | 4 | 0 |

| Major/Minor | Minor2 | | | | | Major2 | | | Minor1 | |
|---|---|---|---|---|---|---|---|---|---|---|
| Conflicting Flow All | - | 919 | | | | - | - | 0 | 919 | - |
| Stage 1 | - | - | | | | - | - | - | 0 | - |
| Stage 2 | - | - | | | | - | - | - | 919 | - |
| Critical Hdwy | - | 7 | | | | - | - | - | 7.6 | - |
| Critical Hdwy Stg 1 | - | - | | | | - | - | - | - | - |
| Critical Hdwy Stg 2 | - | - | | | | - | - | - | 6.6 | - |
| Follow-up Hdwy | - | 3.35 | | | | - | - | - | 3.55 | - |
| Pot Cap-1 Maneuver | 0 | 268 | | | | 0 | - | - | 222 | 0 |
| Stage 1 | 0 | - | | | | 0 | - | - | - | 0 |
| Stage 2 | 0 | - | | | | 0 | - | - | 286 | 0 |
| Platoon blocked, % | | | | | | | - | - | | |
| Mov Cap-1 Maneuver | - | 268 | | | | - | - | - | 199 | - |
| Mov Cap-2 Maneuver | - | - | | | | - | - | - | 199 | - |
| Stage 1 | - | - | | | | - | - | - | - | - |
| Stage 2 | - | - | | | | - | - | - | 256 | - |

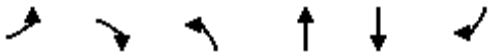
| Approach | EB | SB | NW |
|---|---|---|---|
| HCM Control Delay, s | 20 | 0 | 23.5 |
| HCM LOS | C | | C |

| Minor Lane/Major Mvmt | NWLn1 | EBLn1 | SBT | SBR |
|---|---|---|---|---|
| Capacity (veh/h) | 199 | 268 | - | - |
| HCM Lane V/C Ratio | 0.022 | 0.104 | - | - |
| HCM Control Delay (s) | 23.5 | 20 | - | - |
| HCM Lane LOS | C | C | - | - |
| HCM 95th %tile Q(veh) | 0.1 | 0.3 | - | - |



| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 11 | 0 | 0 | 2414 | 0 | 0 |
| Future Volume (vph) | 11 | 0 | 0 | 2414 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 0 | 0 | 4988 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 0 | 0 | 4988 | 0 | 0 |
| Link Speed (mph) | 25 | | | 55 | 55 | |
| Link Distance (ft) | 57 | | | 2226 | 645 | |
| Travel Time (s) | 1.6 | | | 27.6 | 8.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 12 | 0 | 0 | 2682 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 12 | 0 | 0 | 2682 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 56.6% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 11 | 0 | 0 | 2414 | 0 | 0 |
| Future Volume (Veh/h) | 11 | 0 | 0 | 2414 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 12 | 0 | 0 | 2682 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 894 | 0 | 0 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 894 | 0 | 0 | | | |
| tC, single (s) | 6.9 | 6.9 | 4.2 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 96 | 100 | 100 | | | |
| cM capacity (veh/h) | 277 | 1084 | 1607 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 | NB 3 |
|---|---|---|---|---|
| Volume Total | 12 | 894 | 894 | 894 |
| Volume Left | 12 | 0 | 0 | 0 |
| Volume Right | 0 | 0 | 0 | 0 |
| cSH | 277 | 1700 | 1700 | 1700 |
| Volume to Capacity | 0.04 | 0.53 | 0.53 | 0.53 |
| Queue Length 95th (ft) | 3 | 0 | 0 | 0 |
| Control Delay (s) | 18.6 | 0.0 | 0.0 | 0.0 |
| Lane LOS | C | | | |
| Approach Delay (s) | 18.6 | 0.0 | | |
| Approach LOS | C | | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.1 | | |
| Intersection Capacity Utilization | 56.6% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

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

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 11 | 0 | 0 | 2414 | 0 | 0 |
| Future Vol, veh/h | 11 | 0 | 0 | 2414 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | - | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 4 | 2 | 4 | 4 | 4 | 4 |
| Mvmt Flow | 12 | 0 | 0 | 2682 | 0 | 0 |

| Major/Minor | Minor2 | | Major1 | |
|---|---|---|---|---|
| Conflicting Flow All | 1073 | - | - | 0 |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 1073 | - | - | - |
| Critical Hdwy | 5.78 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | 6.08 | - | - | - |
| Follow-up Hdwy | 3.84 | - | - | - |
| Pot Cap-1 Maneuver | 281 | 0 | 0 | - |
| Stage 1 | - | 0 | 0 | - |
| Stage 2 | 257 | 0 | 0 | - |
| Platoon blocked, % | | | | - |
| Mov Cap-1 Maneuver | 281 | - | - | - |
| Mov Cap-2 Maneuver | 281 | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | 257 | - | - | - |

| Approach | EB | NB |
|---|---|---|
| HCM Control Delay, s | 18.4 | 0 |
| HCM LOS | C | |

| Minor Lane/Major Mvmt | NBT | EBLn1 |
|---|---|---|
| Capacity (veh/h) | - | 281 |
| HCM Lane V/C Ratio | - | 0.043 |
| HCM Control Delay (s) | - | 18.4 |
| HCM Lane LOS | - | C |
| HCM 95th %tile Q(veh) | - | 0.1 |

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 90 | 2357 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 90 | 2357 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 300 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 0 | 0 |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1203 | 3471 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1203 | 3471 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 55 | 55 | | 30 | |
| Link Distance (ft) | | 676 | 1243 | | 102 | |
| Travel Time (s) | | 8.4 | 15.4 | | 2.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 50% | 4% | 4% | 4% | 2% | 2% |
| Adj. Flow (vph) | 100 | 2619 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 100 | 2619 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 116.1% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 36 | 1655 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 36 | 1655 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 400 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 50 | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1736 | 3471 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1736 | 3471 | 0 | 0 |
| Link Speed (mph) | 30 | | | 55 | 30 | |
| Link Distance (ft) | 154 | | | 653 | 124 | |
| Travel Time (s) | 3.5 | | | 8.1 | 2.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 40 | 1839 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 40 | 1839 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 55.9% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | SEL | SET | NWT | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 11 | 1668 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 11 | 1668 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | 250 | | | 0 |
| Storage Lanes | 0 | 0 | 1 | | | 0 |
| Taper Length (ft) | 50 | | 50 | | | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 1736 | 3471 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 1736 | 3471 | 0 | 0 |
| Link Speed (mph) | 30 | | | 55 | 30 | |
| Link Distance (ft) | 57 | | | 766 | 2189 | |
| Travel Time (s) | 1.3 | | | 9.5 | 49.8 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 12 | 1853 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 12 | 1853 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 56.6% | ICU Level of Service | B |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 4 | 2423 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 4 | 2423 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 250 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 0 | 0 |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 4988 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 4988 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 55 | 55 | | 25 | |
| Link Distance (ft) | | 645 | 200 | | 171 | |
| Travel Time (s) | | 8.0 | 2.5 | | 4.7 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 2% | 2% |
| Adj. Flow (vph) | 4 | 2692 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 4 | 2692 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 108.0% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |

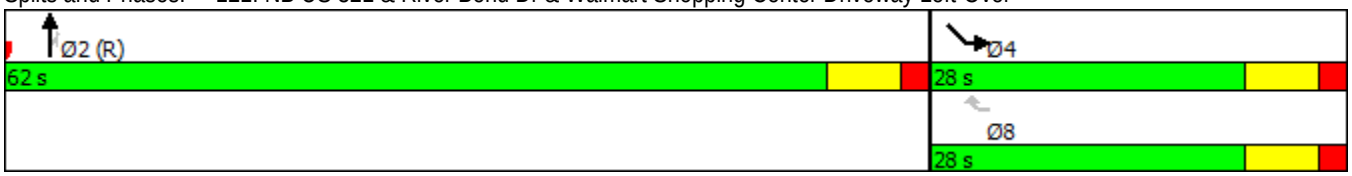
Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 813 | 0 | 1945 | 543 | 0 | 0 | 0 | 405 | 0 |
| Future Volume (vph) | 0 | 0 | 813 | 0 | 1945 | 543 | 0 | 0 | 0 | 405 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 0.76 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 | 1.00 |
| Frt | | | 0.850 | | | 0.850 | | | | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 3610 | 0 | 3471 | 1553 | 0 | 0 | 0 | 3367 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 3610 | 0 | 3471 | 1553 | 0 | 0 | 0 | 3367 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 489 | | | | 152 | | | 678 | | 131 | |
| Travel Time (s) | 9.5 | | | | 1.9 | | | 8.4 | | 3.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 2% | 2% | 4% | 4% | 4% | 4% | 4% | 4% | 2% |
| Adj. Flow (vph) | 0 | 0 | 903 | 0 | 2161 | 603 | 0 | 0 | 0 | 450 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 903 | 0 | 2161 | 603 | 0 | 0 | 0 | 450 | 0 |
| Turn Type | | | Perm | | NA | Perm | | | | Prot | |
| Protected Phases | | | | | 2 | | | | | 4 | |
| Permitted Phases | | | 8 | | | 2 | | | | | |
| Detector Phase | | | 8 | | 2 | 2 | | | | 4 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | 14.0 | 14.0 | | | | 7.0 | |
| Minimum Split (s) | | | 14.0 | | 21.0 | 21.0 | | | | 14.0 | |
| Total Split (s) | | | 28.0 | | 62.0 | 62.0 | | | | 28.0 | |
| Total Split (%) | | | 31.1% | | 68.9% | 68.9% | | | | 31.1% | |
| Maximum Green (s) | | | 21.0 | | 55.0 | 55.0 | | | | 21.0 | |
| Yellow Time (s) | | | 5.0 | | 5.0 | 5.0 | | | | 5.0 | |
| All-Red Time (s) | | | 2.0 | | 2.0 | 2.0 | | | | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | -2.0 | -2.0 | | | | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | 5.0 | 5.0 | | | | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | 3.0 | 3.0 | | | | 3.0 | |
| Recall Mode | | | None | | C-Min | C-Min | | | | None | |
| Act Effct Green (s) | | | 23.0 | | 57.0 | 57.0 | | | | 23.0 | |
| Actuated g/C Ratio | | | 0.26 | | 0.63 | 0.63 | | | | 0.26 | |
| v/c Ratio | | | 0.98 | | 0.98 | 0.61 | | | | 0.52 | |
| Control Delay | | | 59.6 | | 21.7 | 7.0 | | | | 27.9 | |
| Queue Delay | | | 0.0 | | 0.0 | 0.0 | | | | 0.0 | |
| Total Delay | | | 59.6 | | 21.7 | 7.0 | | | | 27.9 | |
| LOS | | | E | | C | A | | | | C | |
| Approach Delay | 59.6 | | | | 18.5 | | | | | 27.9 | |
| Approach LOS | E | | | | B | | | | | C | |
| Queue Length 50th (ft) | | | 223 | | 462 | 107 | | | | 117 | |
| Queue Length 95th (ft) | | | #331 | | #802 | m143 | | | | 151 | |

| Lane Group | WBL | WBR | WBR2 | NBL | NBT | NBR | SBL | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Internal Link Dist (ft) | 409 | | | | 72 | | | 598 | | 51 | |
| Turn Bay Length (ft) | | | | | | | | | | | |
| Base Capacity (vph) | | | 922 | | 2198 | 983 | | | | 860 | |
| Starvation Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Spillback Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Storage Cap Reductn | | | 0 | | 0 | 0 | | | | 0 | |
| Reduced v/c Ratio | | | 0.98 | | 0.98 | 0.61 | | | | 0.52 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green | | | |
| Natural Cycle: 90 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.98 | | | |
| Intersection Signal Delay: 28.6 | | Intersection LOS: C | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |
| # 95th percentile volume exceeds capacity, queue may be longer. | | | |
| Queue shown is maximum after two cycles. | | | |
| m Volume for 95th percentile queue is metered by upstream signal. | | | |

Splits and Phases: 121: NB US 321 & River Bend Dr & Walmart Shopping Center Driveway Left-Over



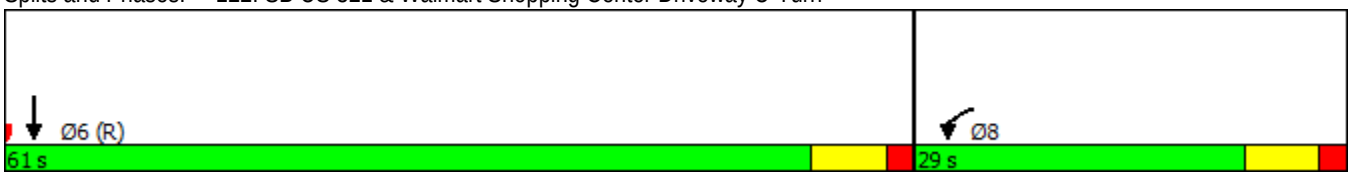
| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 404 | 0 | 0 | 0 | 0 | 1645 |
| Future Volume (vph) | 404 | 0 | 0 | 0 | 0 | 1645 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 250 | |
| Storage Lanes | 2 | 0 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 0.97 | 1.00 | 1.00 | 1.00 | 1.00 | 0.91 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 3367 | 0 | 0 | 0 | 0 | 4988 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 3367 | 0 | 0 | 0 | 0 | 4988 |
| Right Turn on Red | No | No | | No | | |
| Satd. Flow (RTOR) | | | | | | |
| Link Speed (mph) | 25 | | 55 | | | 55 |
| Link Distance (ft) | 118 | | 659 | | | 370 |
| Travel Time (s) | 3.2 | | 8.2 | | | 4.6 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 2% | 2% | 2% | 4% |
| Adj. Flow (vph) | 449 | 0 | 0 | 0 | 0 | 1828 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 449 | 0 | 0 | 0 | 0 | 1828 |
| Turn Type | Prot | | | | | NA |
| Protected Phases | 8 | | | | | 6 |
| Permitted Phases | | | | | | |
| Detector Phase | 8 | | | | | 6 |
| Switch Phase | | | | | | |
| Minimum Initial (s) | 14.0 | | | | | 14.0 |
| Minimum Split (s) | 21.0 | | | | | 21.0 |
| Total Split (s) | 29.0 | | | | | 61.0 |
| Total Split (%) | 32.2% | | | | | 67.8% |
| Maximum Green (s) | 22.0 | | | | | 54.0 |
| Yellow Time (s) | 5.0 | | | | | 5.0 |
| All-Red Time (s) | 2.0 | | | | | 2.0 |
| Lost Time Adjust (s) | -2.0 | | | | | -2.0 |
| Total Lost Time (s) | 5.0 | | | | | 5.0 |
| Lead/Lag | | | | | | |
| Lead-Lag Optimize? | | | | | | |
| Vehicle Extension (s) | 3.0 | | | | | 3.0 |
| Recall Mode | None | | | | | C-Min |
| Act Effct Green (s) | 19.4 | | | | | 60.6 |
| Actuated g/C Ratio | 0.22 | | | | | 0.67 |
| v/c Ratio | 0.62 | | | | | 0.54 |
| Control Delay | 33.2 | | | | | 7.3 |
| Queue Delay | 0.0 | | | | | 0.0 |
| Total Delay | 33.2 | | | | | 7.3 |
| LOS | C | | | | | A |
| Approach Delay | 33.2 | | | | | 7.3 |

| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Approach LOS | C | | | | | A |
| Queue Length 50th (ft) | 120 | | | | | 128 |
| Queue Length 95th (ft) | m113 | | | | | m207 |
| Internal Link Dist (ft) | 38 | | 579 | | | 290 |
| Turn Bay Length (ft) | | | | | | |
| Base Capacity (vph) | 897 | | | | | 3357 |
| Starvation Cap Reductn | 0 | | | | | 0 |
| Spillback Cap Reductn | 0 | | | | | 0 |
| Storage Cap Reductn | 0 | | | | | 0 |
| Reduced v/c Ratio | 0.50 | | | | | 0.54 |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 38 (42%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 45 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.62 | | | |
| Intersection Signal Delay: 12.4 | | Intersection LOS: B | |
| Intersection Capacity Utilization 104.4% | | ICU Level of Service G | |
| Analysis Period (min) 15 | | | |

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

Splits and Phases: 122: SB US 321 & Walmart Shopping Center Driveway U-Turn



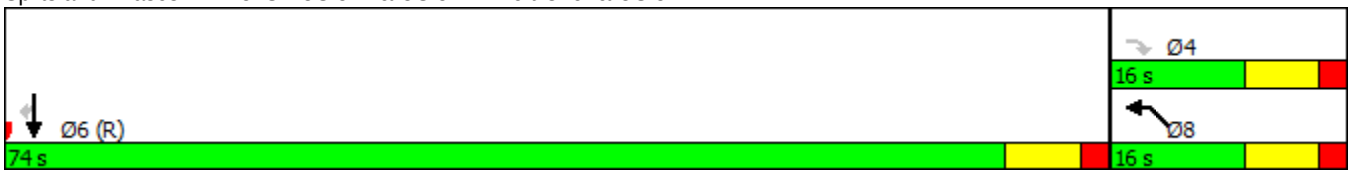
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 157 | 0 | 0 | 0 | 0 | 1497 | 147 | 37 | 0 |
| Future Volume (vph) | 0 | 0 | 157 | 0 | 0 | 0 | 0 | 1497 | 147 | 37 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 350 | | 0 | | 0 | 0 | | 0 | 0 | 0 |
| Storage Lanes | 0 | 1 | | 0 | | 0 | 0 | | 1 | 1 | 0 |
| Taper Length (ft) | 50 | | | 50 | | | 50 | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.88 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 | 1.00 |
| Frt | | | 0.850 | | | | | | 0.850 | | |
| Flt Protected | | | | | | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 2760 | 0 | 0 | 0 | 0 | 3471 | 1553 | 1736 | 0 |
| Flt Permitted | | | | | | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 2760 | 0 | 0 | 0 | 0 | 3471 | 1553 | 1736 | 0 |
| Right Turn on Red | | | No | | | No | | | No | | No |
| Satd. Flow (RTOR) | | | | | | | | | | | |
| Link Speed (mph) | 35 | | | | 55 | | | 55 | | 25 | |
| Link Distance (ft) | 456 | | | | 1044 | | | 127 | | 156 | |
| Travel Time (s) | 8.9 | | | | 12.9 | | | 1.6 | | 4.3 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 3% | 3% | 3% | 2% | 2% | 2% | 2% | 4% | 4% | 4% | 2% |
| Adj. Flow (vph) | 0 | 0 | 174 | 0 | 0 | 0 | 0 | 1663 | 163 | 41 | 0 |
| Shared Lane Traffic (%) | | | | | | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 174 | 0 | 0 | 0 | 0 | 1663 | 163 | 41 | 0 |
| Turn Type | | | Perm | | | | | NA | Perm | Prot | |
| Protected Phases | | | | | | | | 6 | | 8 | |
| Permitted Phases | | | 4 | | | | | | 6 | | |
| Detector Phase | | | 4 | | | | | 6 | 6 | 8 | |
| Switch Phase | | | | | | | | | | | |
| Minimum Initial (s) | | | 7.0 | | | | | 14.0 | 14.0 | 7.0 | |
| Minimum Split (s) | | | 14.0 | | | | | 21.0 | 21.0 | 14.0 | |
| Total Split (s) | | | 16.0 | | | | | 74.0 | 74.0 | 16.0 | |
| Total Split (%) | | | 17.8% | | | | | 82.2% | 82.2% | 17.8% | |
| Maximum Green (s) | | | 9.0 | | | | | 67.0 | 67.0 | 9.0 | |
| Yellow Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| All-Red Time (s) | | | 2.0 | | | | | 2.0 | 2.0 | 2.0 | |
| Lost Time Adjust (s) | | | -2.0 | | | | | -2.0 | -2.0 | -2.0 | |
| Total Lost Time (s) | | | 5.0 | | | | | 5.0 | 5.0 | 5.0 | |
| Lead/Lag | | | | | | | | | | | |
| Lead-Lag Optimize? | | | | | | | | | | | |
| Vehicle Extension (s) | | | 3.0 | | | | | 3.0 | 3.0 | 3.0 | |
| Recall Mode | | | None | | | | | C-Min | C-Min | None | |
| Act Effct Green (s) | | | 11.9 | | | | | 68.1 | 68.1 | 11.9 | |
| Actuated g/C Ratio | | | 0.13 | | | | | 0.76 | 0.76 | 0.13 | |
| v/c Ratio | | | 0.48 | | | | | 0.63 | 0.14 | 0.18 | |
| Control Delay | | | 40.7 | | | | | 4.4 | 2.3 | 39.5 | |
| Queue Delay | | | 0.0 | | | | | 0.0 | 0.0 | 0.0 | |
| Total Delay | | | 40.7 | | | | | 4.4 | 2.3 | 39.5 | |
| LOS | | | D | | | | | A | A | D | |
| Approach Delay | 40.7 | | | | | | | 4.2 | | 39.5 | |

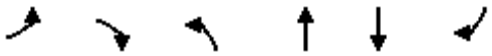
| Lane Group | EBL | EBR | EBR2 | NBL | NBT | NBR | SBL | SBT | SBR | NWL | NWR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Approach LOS | D | | | | | | | A | | D | |
| Queue Length 50th (ft) | | | 52 | | | | | 164 | 15 | 23 | |
| Queue Length 95th (ft) | | | 89 | | | | | 131 | 24 | m25 | |
| Internal Link Dist (ft) | 376 | | | | 964 | | | 47 | | 76 | |
| Turn Bay Length (ft) | | | 350 | | | | | | | | |
| Base Capacity (vph) | | | 373 | | | | | 2672 | 1195 | 234 | |
| Starvation Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Spillback Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Storage Cap Reductn | | | 0 | | | | | 0 | 0 | 0 | |
| Reduced v/c Ratio | | | 0.47 | | | | | 0.62 | 0.14 | 0.18 | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Cycle Length: 90 | | | |
| Actuated Cycle Length: 90 | | | |
| Offset: 30 (33%), Referenced to phase 6:SBT, Start of Green | | | |
| Natural Cycle: 50 | | | |
| Control Type: Actuated-Coordinated | | | |
| Maximum v/c Ratio: 0.63 | | | |
| Intersection Signal Delay: 8.0 | | Intersection LOS: A | |
| Intersection Capacity Utilization Err% | | ICU Level of Service H | |
| Analysis Period (min) 15 | | | |

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

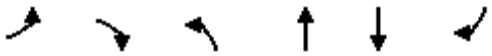
Splits and Phases: 123: SB US 321 & US 321 A Left-Over & US 321 A





| Lane Group | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 135 | 0 | 0 | 2390 | 0 | 0 |
| Future Volume (vph) | 135 | 0 | 0 | 2390 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.95 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 0 | 0 | 3471 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 0 | 0 | 3471 | 0 | 0 |
| Link Speed (mph) | 25 | | | 55 | 55 | |
| Link Distance (ft) | 85 | | | 1243 | 972 | |
| Travel Time (s) | 2.3 | | | 15.4 | 12.0 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 150 | 0 | 0 | 2656 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 150 | 0 | 0 | 2656 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 80.2% | | ICU Level of Service D | |
| Analysis Period (min) 15 | | | |



| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 135 | 0 | 0 | 2390 | 0 | 0 |
| Future Volume (Veh/h) | 135 | 0 | 0 | 2390 | 0 | 0 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (vph) | 150 | 0 | 0 | 2656 | 0 | 0 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 1328 | 0 | 0 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 1328 | 0 | 0 | | | |
| tC, single (s) | 6.9 | 6.9 | 4.2 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 0 | 100 | 100 | | | |
| cM capacity (veh/h) | 144 | 1084 | 1607 | | | |

| Direction, Lane # | EB 1 | NB 1 | NB 2 |
|---|---|---|---|
| Volume Total | 150 | 1328 | 1328 |
| Volume Left | 150 | 0 | 0 |
| Volume Right | 0 | 0 | 0 |
| cSH | 144 | 1700 | 1700 |
| Volume to Capacity | 1.04 | 0.78 | 0.78 |
| Queue Length 95th (ft) | 197 | 0 | 0 |
| Control Delay (s) | 148.2 | 0.0 | 0.0 |
| Lane LOS | F | | |
| Approach Delay (s) | 148.2 | 0.0 | |
| Approach LOS | F | | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 7.9 | | |
| Intersection Capacity Utilization | 80.2% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

| Intersection | |
|---|---|
| Int Delay, s/veh | 7.9 |

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Vol, veh/h | 135 | 0 | 0 | 2390 | 0 | 0 |
| Future Vol, veh/h | 135 | 0 | 0 | 2390 | 0 | 0 |
| Conflicting Peds, #/hr | 0 | 0 | 0 | 0 | 0 | 0 |
| Sign Control | Stop | Stop | Free | Free | Free | Free |
| RT Channelized | - | None | - | None | - | None |
| Storage Length | 0 | - | - | - | - | - |
| Veh in Median Storage, # | 0 | - | - | 0 | - | - |
| Grade, % | 0 | - | - | 0 | 0 | - |
| Peak Hour Factor | 90 | 90 | 90 | 90 | 90 | 90 |
| Heavy Vehicles, % | 4 | 2 | 4 | 4 | 4 | 4 |
| Mvmt Flow | 150 | 0 | 0 | 2656 | 0 | 0 |

| Major/Minor | Minor2 | | Major1 | |
|---|---|---|---|---|
| Conflicting Flow All | 1328 | - | - | 0 |
| Stage 1 | 0 | - | - | - |
| Stage 2 | 1328 | - | - | - |
| Critical Hdwy | 6.88 | - | - | - |
| Critical Hdwy Stg 1 | - | - | - | - |
| Critical Hdwy Stg 2 | 5.88 | - | - | - |
| Follow-up Hdwy | 3.54 | - | - | - |
| Pot Cap-1 Maneuver | ~ 144 | 0 | 0 | - |
| Stage 1 | - | 0 | 0 | - |
| Stage 2 | 208 | 0 | 0 | - |
| Platoon blocked, % | | | | - |
| Mov Cap-1 Maneuver | ~ 144 | - | - | - |
| Mov Cap-2 Maneuver | ~ 144 | - | - | - |
| Stage 1 | - | - | - | - |
| Stage 2 | 208 | - | - | - |

| Approach | EB | NB |
|---|---|---|
| HCM Control Delay, s | 148 | 0 |
| HCM LOS | F | |

| Minor Lane/Major Mvmt | NBT | EBLn1 |
|---|---|---|
| Capacity (veh/h) | - | 144 |
| HCM Lane V/C Ratio | - | 1.042 |
| HCM Control Delay (s) | - | 148 |
| HCM Lane LOS | - | F |
| HCM 95th %tile Q(veh) | - | 7.9 |

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

| Lane Group | EBL | EBR | SET | SER | NWL | NWT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 404 | 2354 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 404 | 2354 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 500 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 0.97 | 0.95 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 3367 | 3471 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 3367 | 3471 |
| Link Speed (mph) | 55 | | 55 | | | 55 |
| Link Distance (ft) | 118 | | 483 | | | 678 |
| Travel Time (s) | 1.5 | | 6.0 | | | 8.4 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 449 | 2616 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 449 | 2616 |
| Sign Control | Stop | | Stop | | | Free |

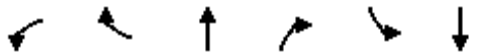
| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 104.4% | ICU Level of Service | G |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBT | NBR | SBL | SBT | NWL | NWR |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 405 | 1644 | 0 | 0 |
| Future Volume (vph) | 0 | 0 | 405 | 1644 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | | 0 | 500 | | 0 | 0 |
| Storage Lanes | | 0 | 1 | | 0 | 0 |
| Taper Length (ft) | | | 50 | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 0.97 | 0.91 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | | | 0.950 | | | |
| Satd. Flow (prot) | 0 | 0 | 3367 | 4988 | 0 | 0 |
| Flt Permitted | | | 0.950 | | | |
| Satd. Flow (perm) | 0 | 0 | 3367 | 4988 | 0 | 0 |
| Link Speed (mph) | 55 | | | 55 | 55 | |
| Link Distance (ft) | 127 | | | 659 | 131 | |
| Travel Time (s) | 1.6 | | | 8.2 | 1.6 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 2% | 2% |
| Adj. Flow (vph) | 0 | 0 | 450 | 1827 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 450 | 1827 | 0 | 0 |
| Sign Control | Stop | | | Free | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 51.8% | ICU Level of Service | A |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.



| Lane Group | WBL | WBR | NBT | NBR | SBL | SBT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 0 | 135 | 1519 |
| Future Volume (vph) | 0 | 0 | 0 | 0 | 135 | 1519 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 0 | 0 | | 0 | 250 | |
| Storage Lanes | 0 | 0 | | 0 | 1 | |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.95 |
| Frt | | | | | | |
| Flt Protected | | | | | 0.950 | |
| Satd. Flow (prot) | 0 | 0 | 0 | 0 | 1736 | 3471 |
| Flt Permitted | | | | | 0.950 | |
| Satd. Flow (perm) | 0 | 0 | 0 | 0 | 1736 | 3471 |
| Link Speed (mph) | 55 | | 30 | | | 55 |
| Link Distance (ft) | 85 | | 1220 | | | 1044 |
| Travel Time (s) | 1.1 | | 27.7 | | | 12.9 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 2% | 2% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 0 | 150 | 1688 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 0 | 150 | 1688 |
| Sign Control | Stop | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 80.2% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBT | SBT | SBR | SEL | SER |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 37 | 2488 | 0 | 0 | 0 | 0 |
| Future Volume (vph) | 37 | 2488 | 0 | 0 | 0 | 0 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Storage Length (ft) | 500 | | | 0 | 0 | 0 |
| Storage Lanes | 1 | | | 0 | 0 | 0 |
| Taper Length (ft) | 50 | | | | 50 | |
| Lane Util. Factor | 1.00 | 0.91 | 1.00 | 1.00 | 1.00 | 1.00 |
| Frt | | | | | | |
| Flt Protected | 0.950 | | | | | |
| Satd. Flow (prot) | 1736 | 4988 | 0 | 0 | 0 | 0 |
| Flt Permitted | 0.950 | | | | | |
| Satd. Flow (perm) | 1736 | 4988 | 0 | 0 | 0 | 0 |
| Link Speed (mph) | | 55 | 55 | | 55 | |
| Link Distance (ft) | | 972 | 152 | | 156 | |
| Travel Time (s) | | 12.0 | 1.9 | | 1.9 | |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 2% | 2% | 2% | 2% |
| Adj. Flow (vph) | 41 | 2764 | 0 | 0 | 0 | 0 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 41 | 2764 | 0 | 0 | 0 | 0 |
| Sign Control | | Free | Stop | | Stop | |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization | 131.6% | ICU Level of Service | H |
| Analysis Period (min) | 15 | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | EBL | EBR | SET | SER | NWL | NWT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 2024 | 0 | 0 | 0 | 3090 |
| Future Volume (vph) | 0 | 2024 | 0 | 0 | 0 | 3090 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 0.76 | 1.00 | 1.00 | 1.00 | 0.91 |
| Frt | | 0.850 | | | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 3541 | 0 | 0 | 0 | 4988 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 3541 | 0 | 0 | 0 | 4988 |
| Link Speed (mph) | 45 | | 45 | | | 45 |
| Link Distance (ft) | 960 | | 796 | | | 1065 |
| Travel Time (s) | 14.5 | | 12.1 | | | 16.1 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 2% | 2% | 4% | 4% |
| Adj. Flow (vph) | 0 | 2249 | 0 | 0 | 0 | 3433 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 2249 | 0 | 0 | 0 | 3433 |
| Sign Control | Free | | Stop | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 63.0% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

| Lane Group | NBL | NBR | SET | SER | NWL | NWT |
|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | |
| Traffic Volume (vph) | 0 | 0 | 0 | 2024 | 0 | 3090 |
| Future Volume (vph) | 0 | 0 | 0 | 2024 | 0 | 3090 |
| Ideal Flow (vphpl) | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 |
| Lane Util. Factor | 1.00 | 1.00 | 1.00 | 0.76 | 1.00 | 0.91 |
| Frt | | | | 0.850 | | |
| Flt Protected | | | | | | |
| Satd. Flow (prot) | 0 | 0 | 0 | 3541 | 0 | 4988 |
| Flt Permitted | | | | | | |
| Satd. Flow (perm) | 0 | 0 | 0 | 3541 | 0 | 4988 |
| Link Speed (mph) | 45 | | 45 | | | 45 |
| Link Distance (ft) | 641 | | 1065 | | | 717 |
| Travel Time (s) | 9.7 | | 16.1 | | | 10.9 |
| Peak Hour Factor | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Heavy Vehicles (%) | 4% | 4% | 4% | 4% | 4% | 4% |
| Adj. Flow (vph) | 0 | 0 | 0 | 2249 | 0 | 3433 |
| Shared Lane Traffic (%) | | | | | | |
| Lane Group Flow (vph) | 0 | 0 | 0 | 2249 | 0 | 3433 |
| Sign Control | Stop | | Free | | | Free |

| Intersection Summary | | | |
|---|---|---|---|
| Area Type: | Other | | |
| Control Type: Unsignalized | | | |
| Intersection Capacity Utilization 63.0% | | ICU Level of Service B | |
| Analysis Period (min) 15 | | | |

Intersection Sign configuration not allowed in HCM analysis.

## Summary of All Intervals

| Run Number | 1 | 10 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| Start Time | 4:50 | 4:50 | 4:50 | 4:50 | 4:50 | 4:50 | 4:50 |
| End Time | 6:00 | 6:00 | 6:00 | 6:00 | 6:00 | 6:00 | 6:00 |
| Total Time (min) | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| Time Recorded (min) | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Vehs Entered | 7814 | 7849 | 7813 | 7770 | 7871 | 7813 | 7797 |
| Vehs Exited | 7699 | 7631 | 7519 | 7201 | 7598 | 7587 | 7701 |
| Starting Vehs | 686 | 659 | 673 | 686 | 656 | 672 | 698 |
| Ending Vehs | 801 | 877 | 967 | 1255 | 929 | 898 | 794 |
| Denied Entry Before | 2 | 1 | 0 | 0 | 0 | 0 | 0 |
| Denied Entry After | 1 | 2 | 1 | 65 | 2 | 2 | 1 |
| Travel Distance (mi) | 23264 | 23183 | 23231 | 22526 | 23031 | 22858 | 23238 |
| Travel Time (hr) | 793.9 | 792.2 | 822.8 | 925.6 | 819.9 | 816.6 | 807.7 |
| Total Delay (hr) | 274.4 | 273.4 | 304.0 | 422.7 | 305.1 | 305.7 | 287.7 |
| Total Stops | 15454 | 15623 | 16144 | 18535 | 16806 | 16361 | 15746 |
| Fuel Used (gal) | 833.7 | 826.6 | 836.8 | 834.8 | 832.9 | 828.9 | 835.4 |

## Summary of All Intervals

| Run Number | 7 | 8 | 9 | Avg |
|---|---|---|---|---|
| Start Time | 4:50 | 4:50 | 4:50 | 4:50 |
| End Time | 6:00 | 6:00 | 6:00 | 6:00 |
| Total Time (min) | 70 | 70 | 70 | 70 |
| Time Recorded (min) | 60 | 60 | 60 | 60 |
| # of Intervals | 2 | 2 | 2 | 2 |
| # of Recorded Intervals | 1 | 1 | 1 | 1 |
| Vehs Entered | 7733 | 7894 | 7873 | 7823 |
| Vehs Exited | 7564 | 7534 | 7625 | 7567 |
| Starting Vehs | 646 | 636 | 695 | 669 |
| Ending Vehs | 815 | 996 | 943 | 921 |
| Denied Entry Before | 0 | 0 | 1 | 0 |
| Denied Entry After | 2 | 2 | 2 | 8 |
| Travel Distance (mi) | 23001 | 23066 | 23385 | 23078 |
| Travel Time (hr) | 788.9 | 842.6 | 826.6 | 823.7 |
| Total Delay (hr) | 274.7 | 327.5 | 303.8 | 307.9 |
| Total Stops | 15522 | 16654 | 16634 | 16346 |
| Fuel Used (gal) | 823.4 | 840.5 | 845.9 | 833.9 |

## Interval #0 Information Seeding

| | |
|---|---|
| Start Time | 4:50 |
| End Time | 5:00 |
| Total Time (min) | 10 |

Volumes adjusted by Growth Factors.

No data recorded this interval.

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 5:00 |
| End Time | 6:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 1 | 10 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| Vehs Entered | 7814 | 7849 | 7813 | 7770 | 7871 | 7813 | 7797 |
| Vehs Exited | 7699 | 7631 | 7519 | 7201 | 7598 | 7587 | 7701 |
| Starting Vehs | 686 | 659 | 673 | 686 | 656 | 672 | 698 |
| Ending Vehs | 801 | 877 | 967 | 1255 | 929 | 898 | 794 |
| Denied Entry Before | 2 | 1 | 0 | 0 | 0 | 0 | 0 |
| Denied Entry After | 1 | 2 | 1 | 65 | 2 | 2 | 1 |
| Travel Distance (mi) | 23264 | 23183 | 23231 | 22526 | 23031 | 22858 | 23238 |
| Travel Time (hr) | 793.9 | 792.2 | 822.8 | 925.6 | 819.9 | 816.6 | 807.7 |
| Total Delay (hr) | 274.4 | 273.4 | 304.0 | 422.7 | 305.1 | 305.7 | 287.7 |
| Total Stops | 15454 | 15623 | 16144 | 18535 | 16806 | 16361 | 15746 |
| Fuel Used (gal) | 833.7 | 826.6 | 836.8 | 834.8 | 832.9 | 828.9 | 835.4 |

## Interval #1 Information Recording

| | |
|---|---|
| Start Time | 5:00 |
| End Time | 6:00 |
| Total Time (min) | 60 |

Volumes adjusted by Growth Factors.

| Run Number | 7 | 8 | 9 | Avg |
|---|---|---|---|---|
| Vehs Entered | 7733 | 7894 | 7873 | 7823 |
| Vehs Exited | 7564 | 7534 | 7625 | 7567 |
| Starting Vehs | 646 | 636 | 695 | 669 |
| Ending Vehs | 815 | 996 | 943 | 921 |
| Denied Entry Before | 0 | 0 | 1 | 0 |
| Denied Entry After | 2 | 2 | 2 | 8 |
| Travel Distance (mi) | 23001 | 23066 | 23385 | 23078 |
| Travel Time (hr) | 788.9 | 842.6 | 826.6 | 823.7 |
| Total Delay (hr) | 274.7 | 327.5 | 303.8 | 307.9 |
| Total Stops | 15522 | 16654 | 16634 | 16346 |
| Fuel Used (gal) | 823.4 | 840.5 | 845.9 | 833.9 |

## Total Network Performance By Run

| Run Number | 1 | 10 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|---|
| Denied Delay (hr) | 1.4 | 1.5 | 1.1 | 4.6 | 0.8 | 1.8 | 0.9 |
| Denied Del/Veh (s) | 0.6 | 0.7 | 0.5 | 2.1 | 0.4 | 0.8 | 0.4 |
| Total Delay (hr) | 273.1 | 271.9 | 302.9 | 418.1 | 304.2 | 303.9 | 286.7 |
| Total Del/Veh (s) | 115.7 | 115.0 | 128.5 | 178.0 | 128.4 | 128.9 | 121.5 |
| Stop Delay (hr) | 119.0 | 118.3 | 141.0 | 253.4 | 147.0 | 150.5 | 129.4 |
| Stop Del/Veh (s) | 50.4 | 50.1 | 59.8 | 107.9 | 62.0 | 63.8 | 54.8 |
| Total Stops | 15454 | 15623 | 16144 | 18535 | 16806 | 16361 | 15746 |
| Stop/Veh | 1.82 | 1.84 | 1.90 | 2.19 | 1.97 | 1.93 | 1.85 |
| Travel Dist (mi) | 23263.5 | 23182.7 | 23231.5 | 22525.9 | 23031.0 | 22857.9 | 23238.0 |
| Travel Time (hr) | 793.9 | 792.2 | 822.8 | 925.6 | 819.9 | 816.6 | 807.7 |
| Avg Speed (mph) | 29 | 29 | 28 | 24 | 28 | 28 | 29 |
| Vehicles Entered | 7814 | 7849 | 7813 | 7770 | 7871 | 7813 | 7797 |
| Vehicles Exited | 7699 | 7631 | 7519 | 7201 | 7598 | 7587 | 7701 |
| Hourly Exit Rate | 7699 | 7631 | 7519 | 7201 | 7598 | 7587 | 7701 |
| Input Volume | 162433 | 162433 | 162433 | 162433 | 162433 | 162433 | 162433 |
| % of Volume | 5 | 5 | 5 | 4 | 5 | 5 | 5 |
| Denied Entry Before | 2 | 1 | 0 | 0 | 0 | 0 | 0 |
| Denied Entry After | 1 | 2 | 1 | 65 | 2 | 2 | 1 |

## Total Network Performance By Run

| Run Number | 7 | 8 | 9 | Avg |
|---|---|---|---|---|
| Denied Delay (hr) | 2.0 | 2.1 | 2.3 | 1.9 |
| Denied Del/Veh (s) | 0.9 | 0.9 | 1.0 | 0.9 |
| Total Delay (hr) | 272.7 | 325.4 | 301.6 | 306.0 |
| Total Del/Veh (s) | 117.2 | 137.3 | 126.7 | 129.8 |
| Stop Delay (hr) | 119.6 | 159.3 | 136.3 | 147.4 |
| Stop Del/Veh (s) | 51.4 | 67.2 | 57.3 | 62.5 |
| Total Stops | 15522 | 16654 | 16634 | 16346 |
| Stop/Veh | 1.85 | 1.95 | 1.94 | 1.93 |
| Travel Dist (mi) | 23001.0 | 23066.2 | 23385.3 | 23078.3 |
| Travel Time (hr) | 788.9 | 842.6 | 826.6 | 823.7 |
| Avg Speed (mph) | 29 | 27 | 28 | 28 |
| Vehicles Entered | 7733 | 7894 | 7873 | 7823 |
| Vehicles Exited | 7564 | 7534 | 7625 | 7567 |
| Hourly Exit Rate | 7564 | 7534 | 7625 | 7567 |
| Input Volume | 162433 | 162433 | 162433 | 162433 |
| % of Volume | 5 | 5 | 5 | 5 |
| Denied Entry Before | 0 | 0 | 1 | 0 |
| Denied Entry After | 2 | 2 | 2 | 8 |

## Intersection: 11: NB US 321 & 13th Street SW

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 15: NB US 321 & SB US 321

| Movement | NB | NB | NB |
|---|---|---|---|
| Directions Served | T | T | T |
| Maximum Queue (ft) | 12 | 81 | 84 |
| Average Queue (ft) | 0 | 7 | 8 |
| 95th Queue (ft) | 9 | 41 | 48 |
| Link Distance (ft) | 1064 | 1064 | 1064 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 21: SB US 321 & Main Avenue Drive NW

| Movement | EB | SB |
|---|---|---|
| Directions Served | R | T |
| Maximum Queue (ft) | 145 | 5 |
| Average Queue (ft) | 64 | 0 |
| 95th Queue (ft) | 122 | 5 |
| Link Distance (ft) | 813 | 187 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 31: NB US 321 & 2nd Avenue NW & 2nd Avenue NW Left-Over

| Movement | WB | WB | NB | NB | NB | SE |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | R | L |
| Maximum Queue (ft) | 228 | 197 | 151 | 165 | 69 | 90 |
| Average Queue (ft) | 160 | 97 | 75 | 101 | 22 | 30 |
| 95th Queue (ft) | 231 | 191 | 138 | 162 | 57 | 69 |
| Link Distance (ft) | 208 | 208 | 79 | 79 | 79 | 89 |
| Upstream Blk Time (%) | 3 | 0 | 5 | 9 | 0 | 0 |
| Queuing Penalty (veh) | 0 | 0 | 35 | 61 | 1 | 0 |
| Storage Bay Dist (ft) | | | | | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 32: SB US 321 & 2nd Avenue NW U-Turn

| Movement | SB | SB | NW |
|---|---|---|---|
| Directions Served | T | T | L |
| Maximum Queue (ft) | 268 | 284 | 133 |
| Average Queue (ft) | 103 | 121 | 106 |
| 95th Queue (ft) | 209 | 227 | 136 |
| Link Distance (ft) | 652 | 652 | 42 |
| Upstream Blk Time (%) | | | 51 |
| Queuing Penalty (veh) | | | 117 |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 33: SB US 321 & 2nd Avenue NW Left -Over & 2nd Avenue NW

| Movement | EB | EB | SB | SB | SB | NW |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | R | L |
| Maximum Queue (ft) | 251 | 218 | 159 | 152 | 124 | 202 |
| Average Queue (ft) | 155 | 103 | 99 | 118 | 50 | 106 |
| 95th Queue (ft) | 229 | 198 | 158 | 157 | 102 | 176 |
| Link Distance (ft) | 549 | 549 | 74 | 74 | 74 | 146 |
| Upstream Blk Time (%) | | | 11 | 19 | 3 | 4 |
| Queuing Penalty (veh) | | | 67 | 112 | 21 | 8 |
| Storage Bay Dist (ft) | | | | | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 34: NB US 321 & 2nd Avenue NW U-Turn

| Movement | NB | NB | SE |
|---|---|---|---|
| Directions Served | T | T | L |
| Maximum Queue (ft) | 451 | 464 | 134 |
| Average Queue (ft) | 237 | 255 | 108 |
| 95th Queue (ft) | 391 | 407 | 129 |
| Link Distance (ft) | 981 | 981 | 38 |
| Upstream Blk Time (%) | | | 70 |
| Queuing Penalty (veh) | | | 216 |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 35: NB US 321 & 2nd Avenue NW U-Turn

| Movement | NB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 182 |
| Average Queue (ft) | 50 |
| 95th Queue (ft) | 133 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 400 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 36: SB US 321 & 2nd Avenue NW Left-Over

| Movement | SB | SB | SB |
|---|---|---|---|
| Directions Served | T | T | T |
| Maximum Queue (ft) | 159 | 166 | 15 |
| Average Queue (ft) | 24 | 35 | 1 |
| 95th Queue (ft) | 98 | 116 | 11 |
| Link Distance (ft) | 790 | 790 | 790 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 37: SB US 321 & 2nd Avenue NW U-Turn

| Movement | SB | SB | SB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 275 | 150 | 51 |
| Average Queue (ft) | 116 | 19 | 7 |
| 95th Queue (ft) | 262 | 162 | 96 |
| Link Distance (ft) | | 779 | 779 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | 300 | | |
| Storage Blk Time (%) | 2 | | |
| Queuing Penalty (veh) | 21 | | |

## Intersection: 38: NB US 321 & 2nd Avenue NW Left -Over

| Movement | NB | NB | NB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 22 | 64 | 100 |
| Average Queue (ft) | 1 | 3 | 8 |
| 95th Queue (ft) | 10 | 34 | 53 |
| Link Distance (ft) | | 687 | 687 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | 550 | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 43: SB US 321 & 7th Avenue NW Left-Over & 7th Avenue NW

| Movement | EB | SB | SB | SB | NW |
|---|---|---|---|---|---|
| Directions Served | > | T | T | R | L |
| Maximum Queue (ft) | 340 | 414 | 431 | 72 | 94 |
| Average Queue (ft) | 185 | 197 | 188 | 20 | 41 |
| 95th Queue (ft) | 304 | 345 | 348 | 56 | 86 |
| Link Distance (ft) | 347 | 1100 | 1100 | 1100 | 37 |
| Upstream Blk Time (%) | 1 | | | | 15 |
| Queuing Penalty (veh) | 0 | | | | 12 |
| Storage Bay Dist (ft) | | | | | |
| Storage Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |

## Intersection: 44: NB US 321 & 7th Avenue NW U-Turn

| Movement | NB | NB | SE |
|---|---|---|---|
| Directions Served | T | T | L |
| Maximum Queue (ft) | 221 | 241 | 132 |
| Average Queue (ft) | 92 | 110 | 92 |
| 95th Queue (ft) | 176 | 194 | 133 |
| Link Distance (ft) | 655 | 655 | 37 |
| Upstream Blk Time (%) | | | 61 |
| Queuing Penalty (veh) | | | 96 |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 47: SB US 321 & 7th Avenue NW U-Turn

| Movement | SB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 132 |
| Average Queue (ft) | 25 |
| 95th Queue (ft) | 87 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 300 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 48: NB US 321 & 7th Avenue NW Left-Over

| Movement | NB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 29 |
| Average Queue (ft) | 1 |
| 95th Queue (ft) | 16 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 150 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 61: NB US 321 & Clement Boulevard & Clement Boulevard Left-Over

| Movement | WB | WB | WB | NB | NB | NB | NB | SE | SE |
|---|---|---|---|---|---|---|---|---|---|
| Directions Served | > | > | > | T | T | T | R | L | L |
| Maximum Queue (ft) | 366 | 350 | 267 | 150 | 147 | 150 | 137 | 196 | 202 |
| Average Queue (ft) | 332 | 260 | 142 | 113 | 107 | 110 | 56 | 123 | 141 |
| 95th Queue (ft) | 386 | 343 | 241 | 157 | 152 | 154 | 130 | 181 | 195 |
| Link Distance (ft) | 335 | 335 | 335 | 34 | 34 | 34 | 34 | 88 | 88 |
| Upstream Blk Time (%) | 13 | 1 | 0 | 44 | 45 | 45 | 9 | 15 | 22 |
| Queuing Penalty (veh) | 0 | 0 | 0 | 265 | 273 | 273 | 57 | 54 | 76 |
| Storage Bay Dist (ft) | | | | | | | | | |
| Storage Blk Time (%) | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | |

## Intersection: 62: SB US 321 & 13th Avenue Drive NW/Clement Boulevard U-Turn

| Movement | WB | WB | SB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | L | L | T | T | TR |
| Maximum Queue (ft) | 123 | 132 | 236 | 164 | 148 |
| Average Queue (ft) | 89 | 90 | 109 | 73 | 62 |
| 95th Queue (ft) | 131 | 133 | 201 | 142 | 123 |
| Link Distance (ft) | 36 | 36 | 845 | 845 | 845 |
| Upstream Blk Time (%) | 57 | 57 | | | |
| Queuing Penalty (veh) | 84 | 85 | | | |
| Storage Bay Dist (ft) | | | | | |
| Storage Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |

## Intersection: 63: SB US 321 & Clement Boulevard Left-Over & Clement Boulevard

| Movement | EB | EB | SB | SB | SB | NW | NW |
|---|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | TR | < | L |
| Maximum Queue (ft) | 210 | 177 | 179 | 175 | 175 | 109 | 96 |
| Average Queue (ft) | 122 | 63 | 130 | 136 | 100 | 42 | 39 |
| 95th Queue (ft) | 194 | 158 | 187 | 190 | 170 | 88 | 79 |
| Link Distance (ft) | 834 | 834 | 49 | 49 | 49 | 58 | 58 |
| Upstream Blk Time (%) | | | 28 | 31 | 22 | 12 | 10 |
| Queuing Penalty (veh) | | | 151 | 165 | 119 | 6 | 5 |
| Storage Bay Dist (ft) | | | | | | | |
| Storage Blk Time (%) | | | | | | | |
| Queuing Penalty (veh) | | | | | | | |

## Intersection: 64: NB US 321 & 9th Avenue NW & Clement Boulevard

| Movement | WB | WB | NB | NB | NB | SE |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | TR | <L |
| Maximum Queue (ft) | 149 | 93 | 258 | 262 | 282 | 176 |
| Average Queue (ft) | 75 | 18 | 156 | 154 | 180 | 130 |
| 95th Queue (ft) | 136 | 60 | 239 | 238 | 260 | 182 |
| Link Distance (ft) | 252 | | 1052 | 1052 | | 79 |
| Upstream Blk Time (%) | | | | | | 41 |
| Queuing Penalty (veh) | | | | | | 119 |
| Storage Bay Dist (ft) | | 250 | | | 375 | |
| Storage Blk Time (%) | | | | | 0 | |
| Queuing Penalty (veh) | | | | | 0 | |

## Intersection: 65: NB US 321 & Clement Boulevard U-Turn

| Movement | NW | NW | NW |
|---|---|---|---|
| Directions Served | L | L | T |
| Maximum Queue (ft) | 79 | 67 | 98 |
| Average Queue (ft) | 12 | 7 | 3 |
| 95th Queue (ft) | 49 | 37 | 96 |
| Link Distance (ft) | | | 911 |
| Upstream Blk Time (%) | | | 0 |
| Queuing Penalty (veh) | | | 0 |
| Storage Bay Dist (ft) | 300 | 300 | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 66: SB US 321 & Clement Boulevard Left-Over

| Movement | SB | SB | SB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | L | L | T | T | T |
| Maximum Queue (ft) | 34 | 43 | 192 | 182 | 90 |
| Average Queue (ft) | 2 | 2 | 22 | 24 | 6 |
| 95th Queue (ft) | 17 | 22 | 116 | 117 | 38 |
| Link Distance (ft) | | | 809 | 809 | 809 |
| Upstream Blk Time (%) | | | 0 | 0 | |
| Queuing Penalty (veh) | | | 0 | 0 | |
| Storage Bay Dist (ft) | 400 | 400 | | | |
| Storage Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |

## Intersection: 67: SB US 321 & Clement Boulevard

| Movement | SB | SB |
|---|---|---|
| Directions Served | L | T |
| Maximum Queue (ft) | 150 | 41 |
| Average Queue (ft) | 30 | 2 |
| 95th Queue (ft) | 104 | 48 |
| Link Distance (ft) | | 748 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | 200 | |
| Storage Blk Time (%) | 0 | |
| Queuing Penalty (veh) | 1 | |

## Intersection: 68: NB US 321 & Clement Boulevard Left-Over

| Movement | NB | NB | NB | NB | NB |
|---|---|---|---|---|---|
| Directions Served | L | T | T | T | T |
| Maximum Queue (ft) | 6 | 173 | 168 | 176 | 64 |
| Average Queue (ft) | 0 | 35 | 30 | 35 | 6 |
| 95th Queue (ft) | 7 | 112 | 104 | 115 | 34 |
| Link Distance (ft) | | 767 | 767 | 767 | |
| Upstream Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |
| Storage Bay Dist (ft) | 400 | | | | 400 |
| Storage Blk Time (%) | | | | | |
| Queuing Penalty (veh) | | | | | |

## Intersection: 81: NB US 321 & 15th Avenue NW & 15th Avenue NW Left-Over

| Movement | WB | WB | NB | NB | NB | SE |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | TR | L |
| Maximum Queue (ft) | 162 | 121 | 176 | 172 | 182 | 85 |
| Average Queue (ft) | 84 | 26 | 93 | 98 | 141 | 33 |
| 95th Queue (ft) | 143 | 85 | 164 | 161 | 195 | 73 |
| Link Distance (ft) | 410 | 410 | 100 | 100 | 100 | 133 |
| Upstream Blk Time (%) | | | 4 | 3 | 11 | |
| Queuing Penalty (veh) | | | 36 | 34 | 114 | |
| Storage Bay Dist (ft) | | | | | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 82: SB US 321 & 15th Avenue NW U-Turn

| Movement | WB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 60 |
| Average Queue (ft) | 21 |
| 95th Queue (ft) | 49 |
| Link Distance (ft) | 31 |
| Upstream Blk Time (%) | 11 |
| Queuing Penalty (veh) | 4 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 83: SB US 321 & 15th Avenue NW Left-Over & 20th Avenue NW/15th Avenue NW

| Movement | EB | NW |
|---|---|---|
| Directions Served | > | L |
| Maximum Queue (ft) | 79 | 52 |
| Average Queue (ft) | 31 | 13 |
| 95th Queue (ft) | 65 | 41 |
| Link Distance (ft) | 502 | 114 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 84: NB US 321 & 15th Avenue NW U-Turn

| Movement | EB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 63 |
| Average Queue (ft) | 21 |
| 95th Queue (ft) | 52 |
| Link Distance (ft) | -1 |
| Upstream Blk Time (%) | 20 |
| Queuing Penalty (veh) | 6 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 85: NB US 321 & 15th Avenue NW U-Turn

| Movement | NB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 3 |
| Average Queue (ft) | 0 |
| 95th Queue (ft) | 3 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 200 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 86: SB US 321 & 15th Avenue NW Left-Over

| Movement | |
|---|---|
| Directions Served | |
| Maximum Queue (ft) | |
| Average Queue (ft) | |
| 95th Queue (ft) | |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 87: SB US 321 & 15th Avenue NW U-Turn

| Movement | SE |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 51 |
| Average Queue (ft) | 6 |
| 95th Queue (ft) | 44 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 250 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 88: NB US 321 & 15th Avenue NW Left-Over

| Movement | NW | NW | NW |
|---|---|---|---|
| Directions Served | T | T | T |
| Maximum Queue (ft) | 23 | 16 | 62 |
| Average Queue (ft) | 1 | 1 | 8 |
| 95th Queue (ft) | 11 | 9 | 35 |
| Link Distance (ft) | 664 | 664 | 664 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 91: US 321 & Grace Chapel Road

| Movement | WB | WB | WB | WB | NB | NB | NB | SB | SB | SB |
|---|---|---|---|---|---|---|---|---|---|---|
| Directions Served | L | L | R | R | T | T | T | T | T | T |
| Maximum Queue (ft) | 139 | 171 | 45 | 22 | 204 | 210 | 188 | 96 | 126 | 121 |
| Average Queue (ft) | 36 | 92 | 11 | 1 | 112 | 128 | 89 | 32 | 58 | 73 |
| 95th Queue (ft) | 104 | 154 | 35 | 11 | 185 | 194 | 158 | 78 | 109 | 112 |
| Link Distance (ft) | | 910 | 910 | | 580 | 580 | 580 | 73 | 73 | 73 |
| Upstream Blk Time (%) | | | | | | | | 1 | 2 | 5 |
| Queuing Penalty (veh) | | | | | | | | 3 | 13 | 30 |
| Storage Bay Dist (ft) | 500 | | | 500 | | | | | | |
| Storage Blk Time (%) | | | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | | | |

## Intersection: 92: Grace Chapel Road U-Turn & SB US 321

| Movement | WB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 21 |
| Average Queue (ft) | 3 |
| 95th Queue (ft) | 14 |
| Link Distance (ft) | 13 |
| Upstream Blk Time (%) | 0 |
| Queuing Penalty (veh) | 0 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 93: NB US 321 & Grace Chapel Road U-Turn

| Movement | EB |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 80 |
| Average Queue (ft) | 23 |
| 95th Queue (ft) | 59 |
| Link Distance (ft) | 82 |
| Upstream Blk Time (%) | 1 |
| Queuing Penalty (veh) | 0 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 94: NB US 321 & Grace Chapel Road U-Turn

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 95: SB US 321 & Grace Chapel Road U-Turn

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 96: SB US 321/US 321 & NB US 321

| Movement | NW |
|---|---|
| Directions Served | R |
| Maximum Queue (ft) | 9 |
| Average Queue (ft) | 0 |
| 95th Queue (ft) | 6 |
| Link Distance (ft) | 534 |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 97: US 321 & NB US 321

| Movement | SE | SE | SE |
|---|---|---|---|
| Directions Served | R | R | R |
| Maximum Queue (ft) | 2 | 17 | 12 |
| Average Queue (ft) | 0 | 1 | 1 |
| 95th Queue (ft) | 2 | 7 | 9 |
| Link Distance (ft) | 375 | 375 | 375 |
| Upstream Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 101: NB US 321 & Alex Lee Blvd & Alex Lee Blvd Left-Over

| Movement | WB | WB | NB | NB | NB | SE |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | R | L |
| Maximum Queue (ft) | 146 | 103 | 208 | 195 | 71 | 79 |
| Average Queue (ft) | 57 | 22 | 127 | 147 | 13 | 28 |
| 95th Queue (ft) | 116 | 70 | 217 | 226 | 46 | 70 |
| Link Distance (ft) | 621 | 621 | 95 | 95 | 95 | 30 |
| Upstream Blk Time (%) | | | 9 | 12 | 0 | 25 |
| Queuing Penalty (veh) | | | 74 | 100 | 0 | 9 |
| Storage Bay Dist (ft) | | | | | | |
| Storage Blk Time (%) | | | | | | |
| Queuing Penalty (veh) | | | | | | |

## Intersection: 102: SB US 321 & Alex Lee Blvd U-Turn

| Movement | NW |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 129 |
| Average Queue (ft) | 58 |
| 95th Queue (ft) | 106 |
| Link Distance (ft) | 47 |
| Upstream Blk Time (%) | 14 |
| Queuing Penalty (veh) | 12 |
| Storage Bay Dist (ft) | |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 103: SB US 321 & Alex Lee Blvd Left-Over & Alex Lee Blvd

| Movement | EB | NW |
|---|---|---|
| Directions Served | > | L |
| Maximum Queue (ft) | 60 | 22 |
| Average Queue (ft) | 16 | 2 |
| 95th Queue (ft) | 45 | 15 |
| Link Distance (ft) | 164 | 102 |
| Upstream Blk Time (%) | | |
| Queuing Penalty (veh) | | |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | | |
| Queuing Penalty (veh) | | |

## Intersection: 104: NB US 321 & Alex Lee Blvd U-Turn

| Movement | EB | NB | NB | NB |
|---|---|---|---|---|
| Directions Served | L | T | T | T |
| Maximum Queue (ft) | 37 | 40 | 38 | 40 |
| Average Queue (ft) | 8 | 1 | 1 | 1 |
| 95th Queue (ft) | 28 | 39 | 37 | 40 |
| Link Distance (ft) | 4 | 2164 | 2164 | 2164 |
| Upstream Blk Time (%) | 14 | | | |
| Queuing Penalty (veh) | 2 | | | |
| Storage Bay Dist (ft) | | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 105: NB US 321 & Alex Lee Blvd U-Turn

| Movement | NB | NB | NB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 26 | 60 | 58 |
| Average Queue (ft) | 1 | 4 | 4 |
| 95th Queue (ft) | 18 | 80 | 82 |
| Link Distance (ft) | | 571 | 571 |
| Upstream Blk Time (%) | | 0 | 0 |
| Queuing Penalty (veh) | | 4 | 4 |
| Storage Bay Dist (ft) | 300 | | |
| Storage Blk Time (%) | | 0 | |
| Queuing Penalty (veh) | | 0 | |

## Intersection: 106: SB US 321 & Alex Lee Blvd Left-Over

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 107: SB US 321 & Alex Lee Blvd U-Turn

| Movement | SE |
|---|---|
| Directions Served | L |
| Maximum Queue (ft) | 2 |
| Average Queue (ft) | 0 |
| 95th Queue (ft) | 2 |
| Link Distance (ft) | |
| Upstream Blk Time (%) | |
| Queuing Penalty (veh) | |
| Storage Bay Dist (ft) | 250 |
| Storage Blk Time (%) | |
| Queuing Penalty (veh) | |

## Intersection: 108: NB US 321 & Alex Lee Blvd Left-Over

| Movement | NB | NB |
|---|---|---|
| Directions Served | T | T |
| Maximum Queue (ft) | 196 | 204 |
| Average Queue (ft) | 20 | 33 |
| 95th Queue (ft) | 114 | 134 |
| Link Distance (ft) | 590 | 590 |
| Upstream Blk Time (%) | 0 | 0 |
| Queuing Penalty (veh) | 1 | 1 |
| Storage Bay Dist (ft) | | |
| Storage Blk Time (%) | 0 | |
| Queuing Penalty (veh) | 0 | |

## Intersection: 121: NB US 321 & River Bend Dr & Walmart Shopping Center Driveway Left-Over

| Movement | WB | WB | WB | NB | NB | NB | SE | SE |
|---|---|---|---|---|---|---|---|---|
| Directions Served | > | > | > | T | T | R | L | L |
| Maximum Queue (ft) | 372 | 414 | 323 | 179 | 175 | 178 | 126 | 132 |
| Average Queue (ft) | 221 | 279 | 192 | 142 | 145 | 133 | 86 | 88 |
| 95th Queue (ft) | 361 | 405 | 309 | 181 | 184 | 187 | 131 | 131 |
| Link Distance (ft) | 428 | 428 | 428 | 66 | 66 | 66 | 25 | 25 |
| Upstream Blk Time (%) | 1 | 3 | 1 | 26 | 27 | 24 | 49 | 57 |
| Queuing Penalty (veh) | 0 | 0 | 0 | 217 | 225 | 200 | 99 | 116 |
| Storage Bay Dist (ft) | | | | | | | | |
| Storage Blk Time (%) | | | | | | | | |
| Queuing Penalty (veh) | | | | | | | | |

## Intersection: 122: SB US 321 & Walmart Shopping Center Driveway U-Turn

| Movement | WB | WB | SB | SB | SB | B993 | B993 |
|---|---|---|---|---|---|---|---|
| Directions Served | L | L | T | T | T | T | T |
| Maximum Queue (ft) | 119 | 156 | 227 | 259 | 297 | 206 | 204 |
| Average Queue (ft) | 57 | 124 | 82 | 121 | 136 | 36 | 36 |
| 95th Queue (ft) | 105 | 151 | 199 | 256 | 282 | 252 | 248 |
| Link Distance (ft) | 30 | 30 | | 321 | 321 | 410 | 410 |
| Upstream Blk Time (%) | 42 | 67 | | 4 | 5 | 4 | 5 |
| Queuing Penalty (veh) | 85 | 136 | | 50 | 61 | 50 | 53 |
| Storage Bay Dist (ft) | | | 250 | | | | |
| Storage Blk Time (%) | | | 1 | 5 | | | |
| Queuing Penalty (veh) | | | 4 | 26 | | | |

## Intersection: 123: SB US 321 & US 321 A Left-Over & US 321 A

| Movement | EB | EB | SB | SB | SB | NW |
|---|---|---|---|---|---|---|
| Directions Served | > | > | T | T | R | L |
| Maximum Queue (ft) | 219 | 186 | 158 | 152 | 104 | 83 |
| Average Queue (ft) | 111 | 42 | 88 | 105 | 31 | 26 |
| 95th Queue (ft) | 202 | 155 | 170 | 167 | 80 | 65 |
| Link Distance (ft) | 394 | | 32 | 32 | 32 | 77 |
| Upstream Blk Time (%) | 0 | | 24 | 26 | 9 | 1 |
| Queuing Penalty (veh) | 0 | | 133 | 141 | 52 | 0 |
| Storage Bay Dist (ft) | | 350 | | | | |
| Storage Blk Time (%) | 0 | 0 | | | | |
| Queuing Penalty (veh) | 0 | 0 | | | | |

## Intersection: 124: NB US 321 & US 321 A U-Turn

| Movement | EB | NB | NB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 118 | 125 | 125 |
| Average Queue (ft) | 85 | 19 | 19 |
| 95th Queue (ft) | 112 | 240 | 241 |
| Link Distance (ft) | 30 | 1173 | 1173 |
| Upstream Blk Time (%) | 94 | 1 | 1 |
| Queuing Penalty (veh) | 126 | 6 | 6 |
| Storage Bay Dist (ft) | | | |
| Storage Blk Time (%) | | | |
| Queuing Penalty (veh) | | | |

## Intersection: 125: NB US 321 & Walmart Shopping Center Driveway U-Turn

| Movement | NW | NW | NW | NW |
|---|---|---|---|---|
| Directions Served | L | L | T | T |
| Maximum Queue (ft) | 161 | 267 | 168 | 164 |
| Average Queue (ft) | 13 | 69 | 33 | 32 |
| 95th Queue (ft) | 95 | 214 | 255 | 250 |
| Link Distance (ft) | | 601 | 601 | 601 |
| Upstream Blk Time (%) | | 0 | 2 | 1 |
| Queuing Penalty (veh) | | 1 | 14 | 12 |
| Storage Bay Dist (ft) | 500 | | | |
| Storage Blk Time (%) | | | | |
| Queuing Penalty (veh) | | | | |

## Intersection: 126: SB US 321 & Walmart Shopping Center Driveway Left-Over

| Movement | SB | SB | SB | SB | SB |
|---|---|---|---|---|---|
| Directions Served | L | L | T | T | T |
| Maximum Queue (ft) | 93 | 325 | 395 | 398 | 152 |
| Average Queue (ft) | 7 | 49 | 89 | 94 | 24 |
| 95th Queue (ft) | 82 | 307 | 386 | 392 | 158 |
| Link Distance (ft) | | 591 | 591 | 591 | |
| Upstream Blk Time (%) | | 2 | 3 | 3 | |
| Queuing Penalty (veh) | | 13 | 19 | 22 | |
| Storage Bay Dist (ft) | 500 | | | | 250 |
| Storage Blk Time (%) | | 0 | | 9 | |
| Queuing Penalty (veh) | | 0 | | 50 | |

## Intersection: 127: SB US 321 & US 321 A U-Turn

| Movement | SB | SB | SB |
|---|---|---|---|
| Directions Served | L | T | T |
| Maximum Queue (ft) | 300 | 912 | 893 |
| Average Queue (ft) | 186 | 340 | 320 |
| 95th Queue (ft) | 382 | 1005 | 1000 |
| Link Distance (ft) | | 984 | 984 |
| Upstream Blk Time (%) | | 8 | 6 |
| Queuing Penalty (veh) | | 64 | 50 |
| Storage Bay Dist (ft) | 250 | | |
| Storage Blk Time (%) | 45 | 0 | |
| Queuing Penalty (veh) | 340 | 0 | |

## Intersection: 128: NB US 321 & US 321 A Left-Over

| Movement | NB | NB | NB | NB |
|---|---|---|---|---|
| Directions Served | L | T | T | T |
| Maximum Queue (ft) | 55 | 285 | 293 | 225 |
| Average Queue (ft) | 5 | 82 | 82 | 40 |
| 95th Queue (ft) | 96 | 342 | 335 | 216 |
| Link Distance (ft) | | 917 | 917 | 917 |
| Upstream Blk Time (%) | | 1 | 1 | |
| Queuing Penalty (veh) | | 8 | 8 | |
| Storage Bay Dist (ft) | 500 | | | |
| Storage Blk Time (%) | | 2 | | |
| Queuing Penalty (veh) | | 1 | | |

## Intersection: 996: US 321/NB US 321 & SB US 321

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Intersection: 997: SB US 321 & NB US 321/US 321

| Movement |
|---|
| Directions Served |
| Maximum Queue (ft) |
| Average Queue (ft) |
| 95th Queue (ft) |
| Link Distance (ft) |
| Upstream Blk Time (%) |
| Queuing Penalty (veh) |
| Storage Bay Dist (ft) |
| Storage Blk Time (%) |
| Queuing Penalty (veh) |

## Network Summary

Network wide Queuing Penalty: 5341